

Energy Trust Board of Directors Meeting

December 13, 2013

Agenda	Tab	Purpose
12:15pm Call to Order (<i>John Reynolds</i>) <ul style="list-style-type: none"> Approve agenda 		
General Public Comment <i>The president may defer specific public comment to the appropriate agenda topic.</i>		
12:20pm Consent Agenda <i>The consent agenda may be approved by a single motion, second and vote of the board. Any item on the consent agenda will be moved to the regular agenda upon the request from any member of the board.</i> <ul style="list-style-type: none"> November 6 board meeting minutes 	1	<i>Action</i>
12:25pm President's Report (<i>John Reynolds</i>)		
12:40pm Final Proposed 2014 Budget & 2014-2015 Action Plan <i>(Margie Harris and Courtney Wilton)</i> <ul style="list-style-type: none"> General overview Public comment discussion Resolution to adopt 2014 Budget—R685 Resolution to adopt 2014-2015 Action Plan—R686 	Separate Document	
	2	<i>Action</i>
	2	<i>Action</i>
2:10pm Break		
2:25pm Energy Programs <ul style="list-style-type: none"> Warm Springs Dam Hydro—R682 (<i>Jed Jorgensen</i>) Clean Water Services Biogas—R683 (<i>Dave Moldal</i>) Farmers Irrigation District Plant Two Hydro Upgrade—R684 (<i>Jed Jorgensen</i>) 	3	<i>Action</i> <i>Action</i> <i>Action</i>
4:00pm Committee Reports <ul style="list-style-type: none"> Evaluation Committee (<i>Debbie Kitchin</i>) Finance Committee (<i>Dan Enloe</i>) Nominating Committee (<i>Alan Meyer</i>) Policy Committee (<i>Roger Hamilton</i>) 	4 5 6	<i>Information</i> <i>Information</i> <i>Information</i> <i>Information</i>
4:45pm Adjourn		

**The next meeting of the Energy Trust Board of Directors will be held
Wednesday, February 26, 2014 at 12:15pm
at Energy Trust of Oregon, 421 SW Oak Street, Suite 300, Portland**

Separate Document Final Proposed 2014 Budget & 2014-2015 Action Plan

Tab 1 Consent Agenda

- November 6 meeting minutes

Tab 2 • Resolution to adopt 2014 Budget—R685

- Resolution to adopt 2014-2015 Action Plan—R686

Tab 3 Energy Programs

- Warm Springs Dam Hydro—R682
- Clean Water Services Biogas—R683
- Farmers Irrigation District Plant Two Hydro Upgrade—R684

Tab 4 Evaluation Committee

- New Buildings Process Evaluation Report 2

Tab 5 Finance Committee

- Notes on October 2013 financial statements
- October financials and contract summary report
- December 2 meeting notes
- Financial glossary

Tab 6 Policy Committee

- November 19 meeting notes

Tab 7 Advisory Council Notes

- October 23 RAC notes
- October 23 CAC notes

Tab 8 Glossary of Acronyms and Terminology

Board Meeting Minutes—124th Meeting

November 6, 2013

Board members present: Rick Applegate (by phone), Ken Canon, Dan Enloe, Roger Hamilton, Mark Kendall, Jeff King (by phone), Debbie Kitchin, Alan Meyer, John Reynolds, Anne Root, Dave Slavensky, John Savage (OPUC *ex officio*, by phone)

Board members absent: Julie Brandis, Lisa Schwartz (ODOE special advisor)

Staff attending: Margie Harris, Ana Morel, Hannah Hacker, Debbie Menashe, Amber Cole, Steve Lacey, Peter West, Courtney Wilton, Fred Gordon, Scott Clark, Thad Roth, Mark Wyman, Jed Jorgensen, Pete Gibson, Sue Fletcher, Cheryle Easton, Alison Ebbott, Scott Swearingen, Kim Crossman, Chris Dearth, Susan Jowaiszas, Oliver Kesting, Matt Braman, Diane Ferington, Andrew Hudson, Adam Bartini, Dave McClelland, Pati Presnail

Others attending: Juliet Johnson (OPUC), Jim Abrahamson (Cascade Natural Gas), John Charles (Cascade Policy Institute), Lis Saunders (NEEA), Christina Cabrales (CSG), Geoff Brown (Element Power), Nicole Hughes (Element Power), Bruce Griswold (Pacific Power), Les Perkins (Farmers Conservation Alliance), Julie O'Shea (Farmers Conservation Alliance)

Business Meeting

President John Reynolds called the meeting to order at 12:15 p.m.

General Public Comments

There were no public comments.

Consent Agenda

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

MOTION: Approve consent agenda

Consent agenda includes:

- 1) September 25 board meeting minutes

Moved by: Ken Canon

Seconded by: Debbie Kitchin

Vote: In favor: 9

Abstained: 0

Opposed: 0

Mark Kendall entered the room and joined the meeting at 12:17 p.m.

President's Report

John Reynolds presented on the JC Biomethane biogas project. Several board members and Energy Trust staff attended a dedication of the facility in October. Located in Junction City, the facility takes advantage of one company's waste to produce another company's product. Trucks that carry compost materials to nurseries in Portland and return to Junction City empty now carry Portland restaurant food waste back to the JC Biomethane facility. The materials run through a co-generation facility and

are also compressed to produce fiber for the composting operation and a highly concentrated liquid fertilizer for another local business. Waste heat from the engine is used to keep the digester at the right temperature and there is still enough to be used by a commercial business. The project owner, Dean Foor, suggest a brewery.

John R. described the steps of the operation. Garbage arrives at a reception building, which is made with a steel frame that has a translucent fabric cover to allow for daylighting. Trucks from Lane Forest Products dump the material into a tipping facility. The material then goes through a sorting machine. The board asked how many trucks a day and how the material is gathered in Portland. Staff will follow up.

Most material is ground finely and sent to a receiving "mix" tank to begin the anaerobic digestion process, which produces methane. The continuously stirred tank reactor, CSTR, is the next step. From the CSTR the material overflows into the post digester to undergo further decomposition; meanwhile, the solids from the CSTR are pressed to remove water and finish the compost byproduct. The digestate liquid storage tank is where fertilizer is produced. In another part of the facility, methane is cleaned and excess flared when the generator is inoperative.

Jeff King joined by phone at 12:23 p.m.

An ozone odor treatment system was installed to further reduce any odors from the process.

At the dedication, Energy Trust presented Dean Foor and JC Biomethane with a ceremonial "big check" for the \$2 million Energy Trust incentive. Thad Roth clarified the total project cost is roughly \$16.5 million.

Roger: These facilities are modeled after some in Germany and other places in Europe. This one is the largest in the Pacific Northwest.

John R: And Stahlbush Island Farms gets a slightly different mix and is also one of the first of its kind.

Committee Reports

Evaluation Committee, Debbie Kitchin

The most recent committee meeting was in October. The committee reviewed the 2013 Trade Ally Survey, which used a stratified random sample for the first time. Results are still comparable to past results, and the stratified sample was a good method to seek responses from active trade allies. Findings from the survey help programs make modifications to program offerings and find areas for improvement, like in paperwork and forms.

Also reviewed was the Commercial Strategic Energy Management (SEM) pilot evaluation, which is built off lessons learned from SEM in industry. Debbie K mentioned this is an offering which has good results and is cost effective, largely by using a cohort approach. An individual approach was used with a company with multiple locations but results were not as cost effective.

John R: The notes mention Commercial SEM is an opportunity for facility managers to work with C-level staff. Who are C-level staff?

Debbie: CEOs and CFOs.

John R: What college participated?

Fred: We generally do not say.

Debbie K: Because we publish results, we do not attribute the data. We may decide to do a profile and then the company allows us to publicize their name. Typically in evaluations, we keep it blind to the company name, especially to protect proprietary information.

The committee reviewed the New Buildings Process Evaluation. Debbie K clarified that process evaluations do not look at results in terms of savings but look at how the program is operating. The evaluations identify areas for improvements and staff looks at the recommendations to make modifications.

The committee also reviewed the 2011 Existing Buildings Impact Evaluation. The results are largely in line with what was seen in prior years, and not many changes were identified in realization rates or expected savings.

There was a preliminary rooftop HVAC unit tune-up analysis. There was a wide range of variation in the savings results, and the analysis identified situations where realization rates were significantly off for a particular contractor, which is no longer participating in the program.

John R: In the notes it says one of the implications may be the fresh air provision not working very well until the unit is tuned up, but once that was fixed, energy use went up?

Fred: That is one of many explanations for the savings variations. If you have people who do service work on a roof and you have them do new things, it is hard to discern the interaction between what they regularly do and what you are having them do. We had significant quality control in the pilot year, then project numbers and the sample size went up in the second year, so quality control was reduced to keep costs in check. In addition, many firms used the same contractor with which they already have service contracts.

John R: in my architecture work, rooftop units are the most easily forgotten. I was hoping this would have energy savings results, rather than the opposite.

Fred: This is the result of 10-15 years of work on the problem. It is frustrating. The program is looking at some simpler approaches to at least get economizer savings. It is going to be hard to get positive savings from demand controlled ventilation.

Debbie K: It may be beneficial for the building to do the work, but from an energy savings perspective, it is not something Energy Trust should be paying for.

Dave: It seems important that the trend will move to these types of units instead of centralized systems.

Fred: It is true that rooftop units dominate our building stock now and there are fewer and fewer chillers. There is a proposed, new national model building code that includes fault detection and diagnostics for larger systems; these are simple tripwires so that you can know if they are working right. We still need an infrastructure to assess and analyze in a predictable manner. It is challenging without more automatic equipment.

Finance Committee, Dan Enloe

There have been a few meetings since the last board meeting. In the packet are the August and September financial statements. Dan expressed interest in updating everyone on the status of collecting additional Cascade Natural Gas revenues.

Dan reviewed the August and year-to-date income by utility (page 5 of 11 of the August financials), referencing the Cascade Natural Gas line. Actual Cascade Natural Gas revenue in August was \$68,557 and \$95,226 in September, reflecting an increase. Budget was \$75,067 in August and \$110,311 in September. August and September financial statements reflect a lag in Cascade Natural Gas revenues of approximately \$927,041 as compared to budget for year-to-date, though there is evidence of increasing collection over the two months. The increased rates started in bills this summer.

Steve Lacey: We have spent some time modeling where we will be by year-end and the potential rate adjustment anticipated by the end of February. Based on trending and Cascade's pending rate increase which essentially would double the revenue coming in, we expect to have the full amount Cascade needs to recover by year end. The winter months are when usage increases, so that will also increase the revenue collected.

Dan: Your point-of-view is that this is where you expected to be?

Steve: Yes.

Jim Abrahamson: As we have expected, there is significant under fall in Energy Trust of Oregon expenses starting at the first of the year and rolling through to now. We have met with Energy Trust staff, and we feel very comfortable that we are on track to not only return to the board the money loaned last year but be able to make all of the payments associated with delivering the program on behalf of Cascade Natural Gas. Our understanding is that we are looking at fairly substantial carryover of funds by year end.

Dan: There are a lot of moving pieces.

Jim: Yes, and the financial report in the packets today is a few months' snapshot.

Dan: And is lagged from actual.

Dan: In the same section, page 11, you will see incentives budget versus actual. When you compare actual to same time last year, we are consistently under-running on incentives. We are coming up on Quarter 4 where most money is expended and incentives distributed. We are about even compared to last year, that portends we ought to have a repeat in Quarter 4 as last year.

Alan: We know there is a seasonality and it appears we try to forecast for it but every single month, incentives are lower than forecast. Can we not do a better job forecasting for seasonality so we are not always under for the year? Also, instead of comparing to the prior month and end of prior year, what about comparing to the same point in time in the prior year? So compare September 2013 to September 2012 and not December 2012. Like on page 1 of 11 on the balance sheet.

Margie: Much of that comparison is captured on a quarterly basis, done in chart form and in narrative in the quarterly reports to the board and the OPUC. We could borrow from that and see how we can reflect on monthly financials, but the comparison is done.

John: And do this quarterly and not monthly?

Alan: Yes.

Margie: We will send you the highlight section in the quarterly report. And insert that quarterly into the financial statements.

Margie: As to the forecast question, there will always be variation, and there are different reasons each year, whether it is the economy, market, weather, state or federal subsidies or other factors.

Debbie K: Is the amount of seasonality increasing? That would be interesting to look at.

Margie: There is a correlation when we put a bonus on an offer because we see a jump in activity and that will cause some of those variances. I have been in dialogue with Courtney on how to adjust our forecasting.

Dan: The October meeting was an early look at the budget and we have time to fully discuss that later today. You will see Margie's theme of "steady as she goes." We will also talk about new head count issues. Courtney also talked about ways to slightly adjust risks and get return on investments. Good diligence on his part will get us a few extra thousand on our deposits.

Compensation Committee, Dan Enloe

The committee made good progress on healthcare planning that Margie will soon talk about with staff. The committee also talked about deferred compensation to make sure Energy Trust is in compliance.

Draft 2014-2015 Action Plan & Draft 2014 Budget

Margie Harris presented on the draft 2014 budget and 2014-2015 action plan, available in full detail in the "budget binder" provided to all board members and posted on the Energy Trust web site. Margie referenced a one-page handout, which summarizes the budget at a high level.

Margie started the presentation by thanking staff across the organization for their efforts in participating and shaping the budget. Staff appreciation included new CFO Courtney Wilton; Pati Presnail who is a major driver behind the documents; Alison Ebbott who developed many of the graphs and charts; Diana Rockholm, Ana Morel and Elizabeth Fox who assembled the documents; Amber Cole who created the new look for the presentation; and Peter West and all program staff. Margie encouraged board comment and feedback throughout the presentation.

Margie prefaced the budget presentation with an overview of Energy Trust. Energy Trust serves 1.5 million customers and is in the business of buying affordable and cost-effective energy efficiency and generating clean, renewable energy. Opportunities in the budget and action plan are more and more about tailoring offerings for customers. Energy Trust is more sophisticated and knowledgeable on how to serve customers. The business model is built on working with local business, trade allies and new parts of the business sector including engineers and lenders. Energy Trust also invests in market transformation via NEEA, where the next technology is researched and other work on codes and standards delivers important savings.

Energy Trust has programs for every type of customer. In the residential and commercial sectors, programs are characterized by a high volume of transactions and smaller amounts of savings, though savings are larger for commercial projects. Energy Trust competitively bids and buys expertise from Program Management Contractors, PMCs, for management and delivery. For industrial and renewables, the programs are operated internally with staff. Except for residential solar, these projects are larger, slower and have long lead times. There are also many more custom projects. The

industrial sector also has “streamlined” projects which are increasingly delivered through program delivery contractors and trade allies who have the direct relationship with customers.

Programs are supported through the work of Planning & Evaluation, IT, Communications & Customer Service, Finance and Executive groups. These functions are called program support and infrastructure.

This all adds up to a decade of difference. Part one of that story is Energy Trust saved, between 2002 and 2012, 368 aMW of electricity, generated 110 aMW of renewable energy and saved 28 million annual therms of natural gas, enough energy to power 370,000 homes and heat 55,000 homes with natural gas. Investments have also avoided 8.4 million tons of carbon dioxide. This has kept Oregon one of the most energy efficient states in the country. As of today, the American Council for an Energy-Efficient Economy says Oregon is still fourth in the nation for being the most efficient.

Alan: On energy saved, is that a run rate, average megawatts and annual therms?

Roger: It is cumulative.

Margie: We can get you what is an annual and what is an ongoing benefit.

Margie said the second part of the story is economic benefits. Since 2002, \$1.3 billion have been saved on utility bills and are now dollars moved into the economy. Economic activity adds up to 2,200 jobs lasting a decade and \$2.7 billion added to the economy in the form of wages and income. These are benefits just from Energy Trust investments. For every \$1 invested by Energy Trust, ratepayers save \$3 because Energy Trust keeps the overall cost of energy lower than it otherwise would have been.

Ken: I want to see for X money invested, we have gotten X result.

Debbie K: This is net.

Ken: And that is what I would like to see. Over this time period, Energy Trust has utilized this money from customer investment and the net result is these three.

Margie: We can clarify that these benefits are net of Energy Trust costs.

Margie described a high level approach to how Energy Trust does its work. Energy Trust is performance based and driven by measurable goals. It is accountable to the board of directors and OPUC. Energy Trust seeks and listens to input on plans and strategies, including the budget. Any comments received on the budget will be summarized, reflected in the budget if applicable and noted to the board at the December board meeting.

For energy efficiency to be a real resource that can be quantified, third-party evaluations of all programs are conducted. Energy Trust relies on a continuous cycle of improvement and change. Energy Trust is transparent on its budget, plans, reports and evaluations and posts them online so anyone can have access. Energy Trust also holds public meetings and keeps strong relationships with the four utilities.

Margie gave a brief overview of revenue sources since 2002. Starting with the 3 percent public purpose charge in 2002 from SB 1149; of which, Energy Trust receives approximately 74 percent, split between energy efficiency and renewable energy. Margie noted this was \$45 million for energy efficiency and \$14 million for renewables in 2014 and the annual amount remains fairly stable over

time. Funding from the gas utilities was added later via decoupling agreements between the individual gas utilities and the OPUC. NW Natural began funding efficiency programs in 2003 and Cascade Natural Gas started in 2006. That revenue has grown over time. Also, in the early 2000s, Energy Trust operated gas residential programs with Avista for a few years. The third major source of funding is supplemental electric efficiency funding via SB 838, better known as the Renewable Electricity Standard. A lesser known part of this law allows collection of supplemental electric efficiency funding and the first full year for this funding was in 2009. SB 838 enabled PGE and Pacific Power to make an appeal to the OPUC for additional investment in electric efficiency above and beyond the original 3 percent public purpose charge. The SB 838 amount of revenue has outstripped the original, base public purpose charge funding. This same principle of increasing funding to invest in and capture greater levels of efficiency is in practice today with both natural gas utilities.

Roger: Why the rapid increase (in savings acquired) between 2010 and 2013?

Margie: More savings acquired faster and more than projected. In 2009, we completed an internal redesign to double savings acquisition, which we did. Now as you know from the last two strategic planning sessions with the board, we expect that growth to slow and stabilize over time. Opportunities were great and we got them.

Margie clarified what is not on the "Revenue aligned with investment" chart is \$1.3 million in revenue for NW Natural programs in Washington. The amount would not change the overall picture in the chart, if included.

Ken: The SB 1149 amount has essentially been flat for the last two years and into 2014. Can you project any further out than 2014?

Margie: We do not see a significant change into 2015.

Steve: The SB 1149 amount is a function of (changes in) rates. If rates go up, the amount reflects that, and vice versa.

Margie described the building blocks for Energy Trust's annual budget and two-year action plan. Staff starts with the 2010-2014 Strategic Plan, then looks to resources identified in the utility IRPs, and uses market knowledge and expertise to refine strategies and approaches. The fourth area is distillation into themes, or areas of emphasis, for the action plan.

Margie showed a chart of progress to the 2010-2014 Strategic Plan goals. Energy Trust expects to exceed electric and natural gas goals but will not quite reach the renewable energy goal. There is growth across all sectors on the electric and gas side, and diversity in project sizes and types. Energy Trust is not expecting to reach the full 23 aMW in renewable energy generation. There is great dependence on federal subsidies for renewable energy projects. Right now, the federal Production Tax Credit is set to expire at the end of this year, the state no longer offers the Business Energy Tax Credit, the nation was in an economic period where there was great struggle to make capital investments, and with low gas prices there is low avoided costs. Those factors affect the economics of renewable energy. That said, Energy Trust is still seeing new projects coming forward and seeing growth in residential solar. The different role Energy Trust plays has been recognized by the OPUC and measured differently starting this year.

Ken: Plus there is growing uncertainty around regulation that applies to renewables.

Peter: We are starting to see a national push to reconsider net metering, as an example.

Roger: The reason net metering is uncertain is the success of the solar industry in reducing costs; we are seeing the market pushing against regulation.

Peter: The success of solar is running up against capacity limits.

Margie said that for 2013, Energy Trust expects to land at 96 percent of stretch goal for three utilities and is working especially hard to drive savings toward the conservative goal for Cascade Natural Gas. Margie summarized how Energy Trust plans with each utility, develops an annual goal for each utility and links to the IRPs for each utility.

Margie showed a chart of the last 10 years of electric and natural gas efficiency savings and the next 20 years of potential. Looking at acquired savings, Energy Trust has the most knowledge and experience capturing results in residential markets. Savings achieved for electric commercial and industrial reflect lower market penetration in the first 10 years of effort. Low gas savings is indicative of industrial gas programs not starting until 2009. For the next 20 years, there are bigger opportunities in the commercial and industrial sectors for electric savings. On the gas side, industrial potential may grow but the majority of gas savings will be in the commercial sector.

The value of this chart is it gives a basis of comparison. We know from Fred's shop that five-year projections are best known. What is important is there is head room. We will be able to get more cost-effective electric and gas efficiency in the future, likely at a greater cost. We have captured the easy, cheaper savings; we know what we have done and where the future potential is greater to focus opportunities.

Margie described Energy Trust's market knowledge and expertise. Staff gains an understanding of customers from surveys, evaluations, comments from PMCs and PDCs, comments from trade allies and comments from customers. Staff use program experience and analyses to determine what results programs can acquire in the next year. Staff designs creative approaches, either packaging programs or incentive offerings, making it simpler for customers to participate, initiating partnerships like the Fill-a-Fridge offer or revising opportunities for SEM in the commercial sector by offering a shorter, introductory program for those with less time to devote. Innovation is a theme seen throughout the budget and action plan and is also a cultural part of who Energy Trust is. Energy Trust will pilot and adjust approaches before going to scale, like Clean Energy Works Portland prior to Clean Energy Works Oregon, and now taking on-bill repayment for moderate-income customers through Savings Within Reach. Increasingly there is refinement around specific customers and what they need. It might be an instant rebate for appliance purchases, or sales training for a trade or program ally to help them communicate with their customers about the benefit of an energy efficiency upgrade.

Themes for the budget this year intentionally overlap and cross cut through the organization. "Easy access" by customers and trade allies through online tools, forms and online trade ally enrollment. Packaged offerings for different customers, like homeowners, restaurant owners, data centers and schools. "Targeted and general outreach"; this budget buys more of both. Energy Trust sees both as equally important. There has been great success in Eastern Oregon with someone on-the-ground connecting customers to programs. Energy Trust wants to take a similar approach in Southern Oregon. General awareness of Energy Trust has recently fallen off, with the residential awareness study showing a decline in awareness of Energy Trust and its programs. Energy Trust needs to get out to remind and reinforce people about what it offers. It is important to have visibility and presence. Part of that is a staff member dedicated to stakeholder relationships and outreach. "Innovation" as a

theme includes the Pay-for-Performance pilot and on-bill repayment. "Improved systems and processes" include updating or replacing the project tracking system and adding on to CRM. "Looking ahead" includes the next strategic plan and continuing collaboration with the OPUC, utilities and others to address cost-effectiveness challenges.

The top takeaway for the budget is "steady as we go." Overall, revenue is projected to decrease next year by 1.4 percent and expenses are going up by 5.1 percent. There is growth in savings but it is more modest than we have seen in past years, and the growth in generation is comparable to 2013. Levelized costs remain stable and incentives are going up 3 percent over 2013, helping fill the gap left by the Business Energy Tax Credit. Administrative and program support costs are anticipated at 6.8 percent and Energy Trust typically comes in less than projected.

Alan: Do planned expenses include incentives?

Margie: Yes.

Alan: So non-incentive expenses are going up since incentives are the largest part of the budget?

Margie: Those non-incentive expenses are driven by some increase in program delivery and PMCs which is 45 percent of the 5.1 percent increase and incentives are 41 percent of the increase of 5.1 percent. A smaller portion of the increase is from staffing, which includes additional resources for outreach, broad marketing, project management and web development. There is also 3 percent for other costs, including the Strategic Plan update and management audit.

Ken: Some of those are within the 6 percent.

Margie: Yes.

Alan: I am interested in knowing how much non-incentive expenses will go up.

Margie: We will calculate that.

Roger: It looks like revenue is going down, expenses are going up and incentives are going up. This is not a good direction. Does that mean our reserves come into play?

Margie: Yes, as we get into the details, our plan is to spend down the reserves. It is important to the OPUC, utilities and Energy Trust to not increase rates and hold them stable by spending down reserves.

Courtney reviewed the 2014 budgeted revenues. The big picture is very similar to 2013. Revenue is slightly down. The pie charts show revenue by utility and by how revenue is dedicated. Looking at the chart on the left on slide 18, roughly 91 percent of budget is for energy efficiency, 9 percent to renewable energy and less than 1 percent to interest income. Electric utility customers contribute 85 percent of total revenue and gas utility customers contribute 15 percent.

Margie clarified slide 18 had an incorrect number in the budget binder materials previously sent to the board. As noted on today's slide, total 2014 projected revenue is down \$2.3 million from 2013, or 1.4 percent, not \$15 million.

Mark: On the left-hand chart, you might label "other" simply as "interest." You might also go back and clarify where the \$15 million in planned expenditures is coming from, the reserve drawdown.

Dan: Will one year of drawing down reserves do it?

Margie: It will be multiple years.

Courtney: We also budget fairly conservatively.

John: Why the 1.4 percent decrease in revenue?

Courtney: Because of gas revenues.

Steve: NW Natural filed a rate adjustment downward for the upcoming year.

Courtney showed a pie chart of 2014 expenditures at a glance. Management & General and Communications & Outreach are only about 4 percent of the total. The vast amount of expenses is in the programs. It is a good question between 5.1 percent and split between incentives and non-incentives.

Ken: Can you break down both electric efficiency and gas efficiency between incentives and program activities?

Courtney: Yes.

Margie: For a rough calculation, incentives range between 50-70 percent of the total budget.

Peter: To answer Alan, 58 percent of the budget is incentives, about 30 percent is program delivery. There are increases in program delivery in Existing Buildings, Production Efficiency and residential Products. For Products you pay a service fee per incentive for a unit going out. We are having increasing volume, especially in lighting and some in appliances, so administrative fees are going up for processing the increased volume. For Production Efficiency, we are raising delivery higher than incentives because the more delivery we put on table, the more energy savings we get out in the program. That is, therefore, a more effective way to get savings for this program. On Existing Buildings, the volume over the last four years has doubled. And it is a vast amount of small projects. Each small project takes as much work as a medium-sized project. So cost of delivery has gone up. On slide 20, the right-hand column shows levelized costs, which roll in all Energy Trust costs for acquiring that unit of energy. Electric is coming in at 3 cents per kWh levelized and the OPUC benchmark is 3.9 cents. We will get you more numbers but this is to address Alan's question.

Alan: My concern is on three levels, how many dollars are going to ratepayers, of those not going to ratepayers, how many are invested in services for them as part of program, and how many are spent as part of overhead.

Peter described the table on slide 20 showing electric savings by program. The percent value by the program name is the percent of total savings goal that program is responsible for in 2014. The potential is on the business side looking forward. More than two-thirds of electric savings are from businesses and they account for 60 percent on the gas side. The table shows where Energy Trust expects to end up this year in the 2013 Forecast column and the 2014 costs in the two columns on the right. Overall, there is a 7.8 percent increase in electric savings from where Energy Trust expects to land this year. From budget to budget that is a 4 percent increase. Growth areas are in Production Efficiency, Existing Buildings and residential Products.

Peter provided some additional detail regarding electric savings and costs in the budget. There is a significant, 25 percent increase in lighting incentives on the business side. There was erosion of the economic value to the customer on the lighting side as they lost some federal tax credits and the Business Energy Tax Credit. There are plenty of cost-effective savings out there. The focus on lighting will drive Existing Buildings and Production Efficiency savings. Energy Trust is also introducing and catching up on LED products, especially on the residential side though commercial is starting to adopt. Existing Buildings tested some street lighting efforts with PGE and will extend that in

2014. There is LED testing in car dealership parking lots. Existing Buildings will continue SEM and will make available "SEM light," an easier entry for commercial customers with less time. The program will get more participants though not as many savings per participant. Many commercial customers have constrained employment, like government agencies. In exchange for doing a "light" SEM, they have to engage with Energy Trust longer. The production efficiency program will still get savings though not in as big chunks as in years past on the industrial side. Also, savings show a great increase in multifamily, which is expanding into assisted living. Staff believes they can double the amount multifamily has done statewide.

There is flattening in Existing Homes electric savings. The program got quite a bit of savings early on. There is a small drop in New Buildings, entirely explained by data centers. There are large data centers in the forecast for 2013 but the program does not have them in 2014 or on the horizon at this point.

Mark: Do the new commercial codes have less effect on New Buildings?

Peter: As you move through the code cycle, we claim savings for converting people over to that code and once you are there, you are done claiming savings. We have been able to offset that through the menu approach called Market Solutions. Pop-up buildings like strip malls traditionally just meet code. We have created packages to move them beyond code. The majority of the big swing is data centers.

Peter reviewed budgeted savings and costs for natural gas programs. Thirty eight percent of savings are residential and 62 percent on the business side. Savings are growing in Production Efficiency, especially nurseries. Multifamily savings are increasing for gas too. Residential Products is losing some products due to cost-effectiveness issues stemming from lower avoided costs. There is substantial growth in the New Homes market. That market has rebounded from the recession, is growing much faster than staff thought and will exceed goal this year on account of that. On the program design side, there has been work done with Matt Braman and PECEI to work with subcontractors, leading to 10 percent more savings per home this year than in years past. Stepping past general contractor to suppliers to get them interested and trained will get more homes and more savings. Seventy percent of homes two years ago were gas and now it is 85 percent. New Homes is more than making up for the loss in product elsewhere. It is pretty stable in New Buildings.

There are challenges on both gas and electric. These budgets assume continued capital investment by businesses. Programs are seeing an uptick in that as the economy recovers. If a customer switches and has less capital, that impacts Energy Trust savings. Energy Trust is also assuming significant continuation of consumer confidence on the product side. Staff does not have any reason to assume differently, but if that changes because the market takes a dive, consumers' willingness to upgrade to different appliances or change out lights will go down. The budget also assumes changes in utility data sharing and our customer relationship management system (CRM) will allow programs to be more effective in reaching and targeting customers. The cost of doing the analysis will more than offset the cost of getting savings.

Mark: What is the reason we are sending \$100,000 to NEEA?

Margie: There is a new gas market transformation advisory committee set up through NEEA and we are going to explore a pilot next year. This is the first time we are diversifying with NEEA, which is an electric market transformation organization. We are representing NW Natural and perhaps Cascade Natural Gas.

Alan: What is the levelized cost cap on gas?

Peter: 60 cents.

Margie: And this is done on an aggregate basis.

Roger: What is avoided cost for electricity?

Fred: Long term is 6-9 cents depending on the load shape.

Roger: And for gas?

Fred: We can get you the gas avoided cost.

Peter reviewed the renewable energy table, which includes two programs, Solar and Other Renewables. 2013 expected generation is 2.65 aMW. The 2014 forecast lands in the same spot of about 2.7 aMW, and will be more Solar and less Other Renewables. The Other Renewables pipeline is fairly certain, projects are typically known more than a year out, have long lead times and take multiple years to come on line. The price is going up as the Business Energy Tax Credit has gone away and Energy Trust is supporting more of the project cost. Surprisingly, levelized cost for solar is comparable to energy efficiency. Next year it will be 10.4 cents and four years ago it was at 17 cents. The value is improving. For Other Renewables, the levelized cost includes qualifying facility rates. Peter clarified levelized cost calculations include all costs for incentives, program administration and program support.

Dave: If levelized cost is quite a bit less on Other Renewables, why do not we move budget there?

Peter: SB 1149 prescribed what goes to renewables.

Margie: Are you asking how do we split the renewable energy budget? There are not as many opportunities in Other Renewables as in Solar.

Peter: We also constrain the budget for Solar by lowering incentives. It would help to show you the activity we are funding; over time, the actual amount of kWh from solar versus Other Renewables.

Margie: This is a snapshot for this one year and it is not always the same each year. It would be interesting to look at over time.

Peter: We are doing a good job of building a pipeline of future projects. Solar levelized cost is still pretty low when compared to just a few years ago.

Margie reviewed the top takeaways for the budget, referencing Energy Trust "cannot direct the wind but we can adjust our sails." Underneath the numbers, there are a lot of changes in strategies and how Energy Trust delivers programs. Staff will promote new technologies and new delivery channels, will rely on trade-ally driven offers for customers and will expand the volume of online transactions to keep costs down. Energy Trust is also building integrated systems to support more complex and diverse projects, and to increase targeted marketing and general awareness. Energy Trust will continue cost management; when staff does processes more efficiently, the more dollars are freed up to direct to incentives and directly to customers.

Margie summarized new program initiatives and offers including expanded SEM, recruiting lender allies, providing instant incentive processing for products, reducing soft costs for solar and providing on-bill repayment. Programs will promote new technologies like LEDs, gas furnaces for moderate income and high-efficiency heat pumps. New pilots include a gas market transformation pilot with NEEA, a Pay-for-Performance pilot, a Memory Care lighting pilot, MPower for affordable housing multifamily renters and prescriptive air sealing combined with ceiling insulation.

Program support activities include addressing cost-effectiveness challenges, developing a new approach for future conservation supply curves with utilities, drafting a new strategic plan, expanding customer awareness in Southern Oregon and with general stakeholders and communities, conducting a general awareness campaign, engaging with diverse customers, replacing the FastTrack project tracking system through the Integrated Solutions Implementation Project and strengthening connections between IT and the website. Energy Trust will also build new capability to manage complex projects that are cross organizational.

Debbie K: On system improvements, like automating customer tracking, those are savings Energy Trust will have but also savings PMCs will have. At some point, when we have multiple year contracts, how do we realize those gains when there are contracts originally scoped prior to the efficiency gains? Margie: We do renegotiate PMC and PDC contracts annually. The trickier part is how do you measure and quantify the benefits. You heard at the last board meeting that PECl has increased New Buildings savings but kept costs flat.

Margie showed a snapshot of commercial sector offerings, comparing what offers were provided in 2008 to what is proposed for 2014. The increase in 2014 offerings is a reflection of refinement and targeting based on understanding of markets and submarkets within a sector. 2014 activity also includes interest from policy makers, like whole building retrofit and Pay-for-Performance. Margie showed a similar slide comparing 2008 customer engagement strategies to those proposed for 2014.

Margie said staffing requests relate to the themes in the budget and action plan. Staffing increases are driven by priorities staff sees to reach more and different types of customers to capture results. In addition, the employment audit limits how Energy Trust can contract for temporary and contract resources and we must comply. This budget requests 5.5 FTE, 3.5 of which are new. Currently, two FTE are full-time temporary positions: Commercial & Industrial Marketing Coordinator and Residential Marketing Coordinator. We considered these positions last year, and retained the temporary contractors for another year. Their roles and functions have been monitored for a year and staff believes they should be converted to regular full-time employees.

John R: Can you show the "staffing costs as percentage of total revenue" chart out to 2014?

Margie: Yes.

Margie continued. A total of 3.5 FTE are new. For the proposed Senior Stakeholder & Community Relations Manager, Energy Trust needs to be more visible and more present around state. Energy Trust needs someone dedicated and responsible for the overall outreach strategy, to get outside the I-5 corridor, to respond more efficiently to requests for information and analysis, to respond to public policy leaders and to be in discussions with those who care about the kind of work Energy Trust is doing. This is a high priority position and ranked first in Margie's request to the board.

Ken: Do utilities support this?

Margie: I will find out next week. This position, unlike any other time in the past, was first suggested by the Citizens' Utility Board of Oregon and Renewables Northwest Project. Both have said Energy Trust needs a position like this. There is support of some staff of OPUC and we will find out next Wednesday what the Commissioners think. This is the first time someone outside the organization said Energy Trust needs to have this type of position.

Margie covered the second priority position, the Southern Oregon Outreach Manager. Staff member Susan Badger Jones in Eastern Oregon is highly effective. She has helped staff in outlying areas that are hard to get to and expensive to reach. Staff recommends taking the same approach in Southern Oregon.

The third proposed full-time FTE is a Senior Operations Project Manager. This position has to do with implementation and management of highly complex projects that cross the organization. These projects are oftentimes process improvement projects with IT around innovation, cost management and efficiency gains. Staff needs someone to own that effort and manage those resources and schedule.

Lastly, the 0.5 FTE recommended position is moving a current 0.5 FTE staff position in web project management to 1.0 FTE. The Web Project Manager will be especially important as Energy Trust increasingly shifts to online platforms and communications.

All positions were vetted with the Energy Trust Management Team, comprised of directors across the organization, and reflect the highest priorities while looking for balance and return on investment.

Debbie K: The Senior Project Manager position is timely as we integrate technology changes and go through the Strategic Plan update. Over time, are there positions eliminated or functions no longer needed? It would be valuable to hear what positions are being changed or modified. The position may not be eliminated but modified and moved. It would be helpful to hear about that. First it would demonstrate there is re-evaluating going on for what positions are needed and it would be valuable for you to document those evolutionary changes. So it may not be a new position but a new or changed focus.

Margie: I appreciate you asking this. Juliet Johnson at the OPUC asked the same question. I will do my best to document but it is a constantly changing situation. We are always adapting, changing and innovating. I will try my best to capture examples of that.

Debbie K: A description of any major shifts would be valuable.

Margie outlined what anticipated benefits the budget buys, including \$415 million in future bill savings for 2014 participants, improvements at an estimated 120,000 homes and businesses in Oregon and SW Washington, and buying energy at 3 cents/kWh and 40 cents/therm levelized. The energy saved in the 2014 budget is expected to be enough to power 47,000 homes and heat another 12,000 for a year. This budget will provide for continued high customer satisfaction, and increased visibility and participation statewide. It will also support and train 2,700 local businesses as trade and program allies.

Dave: You do not talk about emerging technologies, changing behavior, or the greening effect. That should be here and on the summary sheet.

Margie: Thank you, we will make the change.

Margie reviewed next steps on budget outreach, which includes an OPUC informal workshop, meetings with each utility, another meeting with the Renewable Energy Advisory Council and Conservation Advisory Council, a public meeting with the OPUC and then a final proposed budget

presentation to the board in December. The December presentation will include a summary of public comments and any copies of written comments received.

Development of the next Energy Trust Strategic Plan is starting now. Ed Sheets, former director of the Northwest Power and Conservation Council, is conducting interviews with industry experts around the nation. Margie is conducting interviews with others, as well. A draft will be ready by the June 2014 board strategic planning retreat with a final version presented at the October 2014 board meeting. The Board Strategic Planning Committee will be a part of the process every step of the way.

Dave: Is there a national association of energy conservation groups? And do you attend to help with strategy?

Margie: Yes and some representatives are on the list of interviews that Ed is conducting.

Alan: The Planning & Evaluation budget has increased over the last few years. You are proposing a 41 percent increase this year, last year there was a 21 percent increase and the year before a 59 percent increase. For actuals, two years ago, instead of a 59 percent increase it only went up 24 percent and last year, instead of a 21 percent increase it went down 1 percent. Can you clarify?

Margie: We are overly optimistic in what we can accomplish in any one given year, and some has to do with changes in resource potential studies.

Fred: We will review these numbers. What is different next year? We are planning more site visits for large commercial and industrial projects largely because of issues with resolution on the gas side and a slew of SEM-related pilots on the business side. From a planning point of view, we believe that these are realistic budget increase drivers, but we will review the overall budget.

Roger: on strategic planning, the Western states governors and the British Columbia premier signed an agreement. For Ed's outreach, we may need to go there to see about carbon targets.

Margie: Yes, I am familiar with the Pacific Coast Collaborative. I have been to a two of those meetings. Thank you, we will check that out.

The board took a break from 2:52 p.m. to 3:05 p.m.

Energy Programs

Authorize Funds for Stone House Solar PV Project

Thad introduced Bruce Griswold, Pacific Power director of origination, Geoff Brown, Element Power director of origination and Nicole Hughes, Element Power project manager for Stone House.

Thad reviewed the project. As laid out in the background material to the resolution, in 2009 the Oregon Solar Capacity Standard required Pacific Power to acquire 8.7 MW by 2020. In 2010, the Oregon Legislature amended the bill and allowed Energy Trust to provide public purpose incentive funding for Solar Capacity Standard projects. Since then, the Energy Trust board has approved funding for two PGE systems, Baldock and Outback, and one Pacific Power system, Black Cap.

In 2013 Pacific Power announced a solar request for proposals, RFP, for 6.7 MW capacity to meet its final requirements under the mandate. For the RFP, qualifying systems are between 500 kW_{AC} to 5 MW_{AC}. Pacific Power came to Energy Trust after it had announced the RFP and invited Energy Trust to review the proposals received. Once Pacific Power reached a list of two solar projects, Stone House and Bevans Point, Pacific Power requested \$1.7 million in incentives from Energy Trust.

From a funding standpoint, when Pacific Power came to Energy Trust, staff shared with the utility in July that the 2013 budget did not anticipate utility-scale solar projects. In addition, Energy Trust's funding priorities, as discussed in board strategic planning and laid out as performance measures with the OPUC, flow, in order of priority as project development assistance, then funding the standard solar program for net metered projects and then maintaining funding for the other program technologies of hydropower, biopower, wind and geothermal. Then if there are any remaining dollars, Energy Trust will evaluate large-scale solar.

Last July, Energy Trust led an RFP for Pacific Power non-solar projects, offering potential funding of up to \$2.2 million. Energy Trust informed Pacific Power that no incentive dollars were available for utility scale solar projects, depending on the outcome of the non-solar RFP.

Still, to be available to support Pacific Power solar projects, Energy Trust agreed to do a parallel review of Pacific Power solar projects with the Energy Trust non-solar projects received through the RFP. Energy Trust's review of the Pacific Power projects included an eligibility and technical review, and determining if there were any above-market costs.

The Energy Trust non-solar RFP resulted in two hydropower projects qualifying and pursuing funding, and staff will go to the board in December for incentive funding requests stemming from this process. After funding these two projects, there was \$700,000 remaining of unallocated funding. Above-market costs for the two Pacific Power solar projects were well above the \$700,000 available and the incentive request amount by Pacific Power.

Staff discussed with Pacific Power how best to allocate the available dollars between the projects. Staff proposed to allocate the \$700,000 based on AC capacity. Pacific Power, as well as the project owners themselves, indicated comfort with the approach.

Benefits of the projects from Energy Trust's perspective are that they support Goal 2 of the Energy Trust Strategic Plan, they follow the funding priorities established by the board and reinforced by the OPUC performance measures. Importantly and further, the incentives reduce the rate impacts of the projects on Pacific Power ratepayers because it reduces the power purchase agreement rate that Pacific Power is in the process of negotiating with each project. Finally, the projects support the state's goal of utility investment in large-scale solar resources in Oregon.

Bruce: Under the arrangements we have, the money is delivered to Element Power, and Element Power and Pacific Power have worked through a reduction in the power purchase agreement contract price. They will take that money and spread it over a 20-year term of agreement. With approval of the project by the Energy Trust board, the price will become the contract price in the agreement.

Alan: My question is why support the project if there is still above-market costs? In the pro forma we see, is that the avoided costs, qualifying facility sales?

Thad: That is correct. The above market cost reflected in our analysis shows how this project would perform with standard avoided cost rates, demonstrating that the projects have above market costs. Since the projects are receiving a negotiated rate (instead of standard avoided cost rates) we are

requiring an adjustment to their negotiated Power Purchase Agreement rates reflecting the incentive we are providing.

Thad described the two incentive amounts, \$520,000 for the Stone House Solar Project and \$180,000 for the Bevans project. Thad reviewed the Stone House project details, which is the project that requires board approval. Stone House is 5.88 MW_{DC} or 5.0 MW_{AC}. The project could get larger, even to be the largest project Energy Trust has supported. One advantage of raising capacity is it raises capacity factor, extending the amount of generation you can accomplish during the day and during the season. The developer is Element Power. Project cost is \$16.3 million net present value. The system has an annual expected production of 11,400 MWh. It is located in Christmas Valley near the Outback project, has an Oregon Business Energy Tax Credit and needs to be online by April 2014.

The technology is fairly standard, polycrystalline silicon solar panels with a single-axis tracking system and capacity factor of 26 percent. If the project got to 7 MW, the capacity factor would go to 30 percent. Element Power will finance and own the project, using an Engineering, Procurement, and Construction (EPC) contractor to build the system. The energy will be wheeled through Midstate Electric Cooperative, delivered into the Redmond substation and will serve the Bend/Redmond area. All Bonneville Power Administration agreements are in place and the project owner is finalizing the negotiated power purchase agreement. The project has site control and is nearly done getting all permits.

The project has both a federal Investment Tax Credit and a state Business Energy Tax Credit. Capitalized construction costs with operations and maintenance shows above-market costs of \$2.6 million. The proposed incentive, at 25 years with an 8 percent internal rate of return, is \$520,000. Pacific Power requested \$1.47 million. All RECs are part of the power purchase agreement and the Energy Trust funding agreement will be received by Pacific Power for full 25 years.

Roger: Solar thermal projects add storage to increase capacity factor, will that be here?

Bill: No, this is strictly taking project output into the system.

Roger: You are using a tracking system, too?

Bill: To track the sun to optimize the panel orientation to the sun.

Thad: And this area is some of the best solar resource in the state.

Dan: This project comes in at a significantly better average amount of capacity for the incentive dollars, which is good.

Alan: Given there are no other projects, this looks like a good project to reduce costs to ratepayers.

John R: And we would not be doing this if other projects were coming through the RFP.

Thad briefly reviewed the Bevans project for the benefit of the board. Bevans is 1.7MW_{AC}, 2 MW_{DC}. The developer is OneEnergy Renewables. There are costs of \$4.6 million and the system is expected to produce annually 3,800 MWh. It is located near Malin, and commercial operation is scheduled for Quarter 4 2014. Similar to Stone House, this project has strong financial partners. The project connects to Pacific Power's Turkey Hill substation and uses the same technology as Stone House with a similar capacity factor. Site control has been obtained through 26-year lease and permits

obtained. The above-market cost is \$1.8 million. Pacific Power requested \$500,000, and staff proposes an incentive of \$180,000. Because the incentive amount is below \$500,000, Executive Director signing of the contract is allowed without board approval.

Anne: What is the investor's rate of return?

Thad: It is at 8 percent. It depends on many factors. Stone House is wheeling power through MidState Electric Cooperative and then Bonneville Power Administration. With a lower capacity factor, project costs increase.

Ken: Will the incentive go to benefit Pacific Power ratepayers?

Thad: Yes. And we have received assurances through the OPUC that they will keep eye on how the incentive is treated.

Mark: The net tax benefits poses a substantial portion of cost recovery, what portion is attributable to federal tax credits and were either eligible for monetization?

Thad: For Stone House, the Investment Tax Credit (ITC) is applied first to the eligible basis of the project and then the 50% Business Energy Tax Credit recognizes contribution of any grants.

Margie: Anything about wear and tear on the system for an area that has hot and freezing temperatures?

Geoff Brown: The system is designed for the full length of the contract, 30 years, and takes into account all seasons. And Christmas Valley is not particularly extreme. We are comfortable with the design.

John R: Are there any public comments?

John Charles: I am president of Cascade Policy Institute. I have followed your work for quite a long time. My concern is summarized in the first bullet of the staff report that Pacific Power is obligated to install solar under the Solar Capacity Standard and then that Energy Trust is allowed by state law to spend money to support solar. State law is the stick and the public purpose charge is the carrot. Why are two of them used for one project, on top of the Business Energy Tax Credit? Pacific Power has a gun to its head. They will meet the mandate. You are not incentivizing anything new. It is going to happen. The priority you had at the beginning of the year to not fund these projects was correct. Now you have \$700,000 left over and you are going to spend it. You could just carry it over. Especially since these projects are so expensive. You could do more RFPs next year. The IOUs (investor owned utilities) are under the 2020 mandate. They are going to do it anyway. It is just cycling money back and forth of the ratepayers'. I understand this is a conflict created by the legislature, not you, but you do have the discretion not to appropriate this money. I recommend you keep the money, carry it over and look for better projects.

Alan: I actually agree there is a carrot and a stick. Any project we subsidize helps offset costs to ratepayers. Pacific Power is not doing this project, the developer is. You could argue whether it is the most cost effective. But there are no other projects.

Ken: And that is why I asked whether the \$180,000 for the second project was going to flow back to the ratepayers. That is a key feature of both of these projects, that ratepayers get the direct benefit. Otherwise it would be that much more expensive.

Dan: And it does no good for anybody to have money sitting around. If there was a project there that was biopower or wind, which we have solicited for and they have failed to come through, we would consider that. This is the only reason that we are moving forward and getting the benefits to ratepayers.

John R: And solar projects are the cleanest way to generate power.

With no other public comments, the board voted on the resolution.

**RESOLUTION 680
AUTHORIZING FUNDS FOR STONE HOUSE SOLAR PV PROJECT**

Whereas:

- 1. Pacific Power desires to purchase energy from 5.88 megawatts_{DC} (MW) of solar photovoltaic generating capacity in Christmas Valley, Oregon, to count toward its state Renewable Energy Standard and Solar Capacity Standard mandates.**
- 2. This project has already secured Business Energy Tax Credit pre-certification, a major barrier to renewable energy projects in Oregon.**
- 3. Total project cost is estimated to be \$16,111,238, which Energy Trust staff considers reasonable for a project of this size and design.**
- 4. The above-market cost on a net-present value basis over 25 years is estimated at \$2,630,737.**
- 5. Based on its analysis of above-market cost and available incentive funding for projects of this type, staff recommends an Energy Trust incentive of up to \$520,000. Pacific Power supports this incentive level.**
- 6. In consideration for its incentive funding contribution, Energy Trust will require that the project owner assign 100 percent of the Renewable Energy Certificates (RECs) for the project to Pacific Power for compliance with Oregon's solar mandate and renewable energy requirements.**

It is therefore RESOLVED that the board of directors of Energy Trust of Oregon, Inc. authorizes:

- 1. An incentive of \$520,000 for the Stone House ground-mounted solar photovoltaic facility in Christmas Valley, Oregon with minimum capacity of 5.88MW_{DC}.**
- 2. Energy Trust to require the project owner to assign all RECs from this project to Pacific Power for the benefit of its ratepayers and for compliance with Pacific Power's renewable energy generation and solar capacity obligations to the state.**
- 3. The executive director to negotiate and sign an agreement consistent with this resolution.**

Moved by: Ken Canon

Seconded by: Dan Enloe

Vote: In favor: 11 Abstained: 0
 Opposed: 0

Ken: I am glad Mr. Charles came to us and provided his opinion. It is why we are here. I always welcome public comment.

Farmers Conservation Alliance

Feature presentation to board, Les Perkins and Julie O'Shea, Farmers Conservation Alliance

Jed Jorgensen introduced Les Perkins and Julie O'Shea of Farmers Conservation Alliance. The alliance is a nonprofit from Hood River, and holds the license for the farmer's screen, an innovative fish screen developed in the 1980s. Today's presentation is on the results of a study that explores impacts of irrigation hydropower, both positives and negatives. Both Energy Trust and Bonneville Environmental Foundation supported the study, and are working together to publicize the results and talk with others on what the results mean. It is also a good segue to two hydropower projects that staff will present to the board in December.

Les: When you hear hydropower in the Pacific Northwest, many people think of large dams, the negative of environmental impacts and the positive of low-cost power. Today, I will quickly cover a 55-page study on irrigation districts and hydropower.

Les highlighted the study, which focused on the Hood Basin that has three irrigation districts. Most irrigation diversions were set in the 1870s and early 1900s. Agriculture was the dominant driver of the economy back then and still is today, especially pears. Another major economic driver is timber. The third major piece of the economy and tribal culture in the area is salmon. When combined, all three drivers are difficult to navigate.

Farmers Irrigation District is the northern most district, was established in the late 1870s and historically struggled to deliver water to landowners. Costs kept increasing. By the 1970s, it realized it would not be able to maintain the system purely with landowner assessments alone. In 1985, the district constructed two plants and began generating power. Slowly over time, revenue from sales allowed for piping, which led to increased water flows and increased generation. Since then, the district has invested \$45 million in the system. One aspect of generation is revenue goes back into the system. By 2015 the district will be fully piped. The district has eliminated all pumps. And the district invented and patented a new fish screen, licensing the patent to a nonprofit and requiring all profits to go into investments benefiting the environment and agriculture.

Middle Fork Irrigation District is near the base of Mt. Hood. It started conservation in 1948, and built a reservoir in the 1960s. Its flows are subject to extreme and expensive natural events. The district recognized it needed a way to fund improvements over time. It built three powerhouses, and completed a lot of piping and pipe replacement. The district invested \$40 million into systems, installed 33 miles of pipe, installed two horizontal fish screens and removed eight fish passage barriers including one dam.

East Fork Irrigation District is the eastern-most district and has the largest acreage. It does not have hydropower, and has more than 60 miles of open canals.

The study revealed that hydropower projects are a net benefit to the watershed. Through interviews, Farmers Conservation Alliance found the only negative impact of these hydropower systems is reduced winter flows.

Combined, the benefits of Farmers and Middle Fork is that more than \$85 million has been invested, 96 miles of pipe installed, 30 passage barriers removed, 11 fish screens installed, 50 million kWh produced and 7.7 billion gallons of water conserved annually.

The vision for the alliance's study is to open the door to conversation with regulators on the benefits of hydropower in irrigation districts.

Ken: Farmers and Middle Fork, how many impoundments are there?

Les: They are run of river.

Ken: Then what is the winter issue?

Les: It comes down to late November, early December flow for steelhead.

Roger: How does climate change affect the viability of projects? Seems in the long term, irrigation supply is at risk with climate change because of increased natural events and reduced summer flows due to receding glaciers.

Les: That is a big impact. Districts may look at increasing winter flows, which is controversial.

Julie: Plus, Farmers has been able to reduce water use by 40 percent through these actions. A big question for these districts is where the capital will come from.

Margie: Thank you for this presentation. Are you also analyzing potential increase in forest fires and what impacts that would have?

Les: It is similar to logging practices, you see less water stored and less water released.

The board thanked Les and Julie for their presentation.

Adjourn

The meeting adjourned at 4:10 p.m.

The next regular meeting of the Energy Trust Board of Directors will be held Friday, December 13, 2013, at 12:15 p.m. at Energy Trust of Oregon, Inc., 421SW Oak Street, Suite 300, Portland, Oregon.

Alan Meyer, Secretary

Board Decision

Adoption of 2014 Budget and 2015 Projection

December 13, 2013

Summary

To adopt the Energy Trust budget for 2014 and projection for 2015.

Background

- The draft budget for 2014 and projections for 2015 (the draft budget) were presented to and discussed by the board at their meeting on November 6, 2013.
- The draft budget was posted on the Energy Trust website beginning on November 7, 2013.
- The Conservation and Renewable Energy Advisory Councils were presented highlights from the draft budget, and discussed the draft budget, at their respective meetings on October 23, 2013; the Councils were each provided updates on November 20, 2013.
- The Finance Committee reviewed the draft budget on October 25, 2013 and discussed updates and outreach progress on December 2, 2013.
- The Oregon Public Utility Commission was briefed on the draft budget on November 13, 2013 and heard public comment on the draft budget on November 26, 2013.
- Northwest Natural Gas, Cascade Nature Gas, Portland General Electric, and Pacific Power were presented the draft budget at individual meetings held between November 11, 2013 and November 25, 2013.
- Customer associations were briefed on the draft budget November 14, 2013; Oregon Home Builders Association November 18, 2013; and a live public webinar was conducted November 15, 2013.
- Public comments were due November 27, 2013.
- The board will hear public comment and discuss the proposed final budget at its meeting on December 13, 2013.

Recommendation

Staff recommends adoption of the Energy Trust budget for 2014 and projection for 2015.

RESOLUTION 685

ADOPTION OF 2014 BUDGET AND PROJECTION FOR 2015

BE IT RESOLVED: That the Energy Trust of Oregon, Inc., Board of Directors approves the 2014 budget and 2015 projection as presented in the board packet.

Moved by:

Seconded by:

Vote: In favor:

Abstained:

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

Board Decision

Adoption of 2014-2015 Action Plan

December 13, 2013

Summary

To adopt the Energy Trust two-year Action Plan for 2014-2015.

Background

- The Energy Trust grant agreement with the Oregon Public Utility Commission requires Energy Trust to update its two-year Action Plan annually and describe the activities the organization will undertake to accomplish over the coming two years.
- This updating occurs each year in connection with the preparation and finalization of the following year's budget.
- The 2014-2015 Action Plan outlines activities Energy Trust will undertake in 2014 and 2015 to achieve its strategic goals.

Discussion

- A draft of the two year action plan for 2014-2015 (the action plan) was presented to and discussed by the board at their meeting on November 6, 2013.
- The action plan was posted on the Energy Trust website on October 31, 2013.
- The Conservation and Renewable Energy Advisory Councils were presented highlights from the action plan at their respective meetings on October 23, 2013, and provided updates on November 20, 2013.
- The Finance Committee reviewed the action plan on October 25, 2013 and discussed outreach progress on December 2, 2013.
- The Oregon Public Utility Commission was briefed on the action plan on November 13, 2013 and heard public comment on the action plan on November 26, 2013.
- Northwest Natural Gas, Cascade Nature Gas, Portland General Electric, and Pacific Power were presented the action plan at individual meetings held between November 11, 2013 and November 25, 2013.
- Customer associations were briefed on the draft budget November 14, 2013; Oregon Home Builders Association on November 18, 2013; and a live public webinar was conducted November 15, 2013.
- Public comments were due November 27, 2013.
- The board will hear public comment and discuss the final proposed budget and action plan at its meeting on December 13, 2013.

Recommendation

Staff recommends adoption of the Energy Trust Action Plan for 2014-2015.

RESOLUTION 686 ADOPTING 2014-2015 ACTION PLAN

BE IT RESOLVED: That Energy Trust of Oregon, Inc. Board of Directors approves the two-year 2014-2015 Action Plan as presented in the board packet.

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

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

Board Decision

Warm Springs Dam Hydroelectric Project

December 13, 2013

Summary

Warm Springs Hydro LLC, owned by an experienced developer team, proposes to add 2.7 MW of hydroelectric capacity to the existing Warm Springs Dam on the middle fork of the Malheur River. This project, if funded, would be the first time that Energy Trust has provided incentive funding for hydro at a dam. Such projects require extensive and complex permitting, limiting the number that are developed.

The Warm Springs Dam was built without hydroelectric capacity. The proposed project would involve installation of a trash rack and a penstock to one of the dam's existing outlet jets. In addition, a 2.7 megawatt (MW) turbine and generator would be installed, generating 6,288 megawatt hours (MWhs) annually, on average. The project would interconnect through Harney Electric Cooperative (HEC). Power would be wheeled through HEC and Bonneville Power Administration for delivery to Pacific Power as an off-system Qualifying Facility.

Staff and an independent third party consultant have evaluated the project, identified above-market costs, and recommend support of the project as consistent with Energy Trust goals.

This resolution would authorize:

- Up to \$740,000 in incentive funding, paid incrementally in three payments offsetting 61% of the project's above-market cost on a present value basis,
- Collection of 82,000 renewable energy certificates (RECs) created by the project, representing 65% of the project's expected generation,
- The executive director to enter into a consistent project funding agreement.

Energy Trust Goals

- The Warm Springs Dam Hydroelectric project supports Goal 2 of the 2010-2014 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from community-scale renewable energy projects.
- This project will add to the ten operational hydropower projects Energy Trust has supported, currently representing 5.9 megawatts (MW) of capacity and 2.7 average megawatts (aMW) of generation. Incentives are dedicated for four additional projects under construction, representing 2.2 MW of capacity and 0.8 aMW of generation.

Background

- In August, Energy Trust announced a competitive process to allocate up to \$1.75 million in incentives for certain types of renewable energy facilities in Pacific Power territory. Two hydropower projects applied, including this one, as did a biopower project which did not meet Energy Trust's funding criteria. Staff recommends this project for funding. The other hydropower project is also under consideration in a separate board resolution.

- Warm Springs Hydro LLC (WSH) proposes to add 2.7 MW of hydroelectric capacity to the existing Warm Springs Dam on the Middle Fork of the Malheur River located approximately 40 miles east of Burns on the border of Harney and Malheur Counties. WSH is owned by the same experienced team that successfully developed and constructed the 1.1 MW C-Drop hydro project on the Klamath Irrigation District in 2012, where Energy Trust provided a \$490,000 incentive.
- The Warm Springs Dam was constructed in 1919 and is owned by the Warm Springs Irrigation District (WSID). The dam is 106 feet high with a crest length of 469 feet. It creates a reservoir capable of storing over 190,000 acre feet of water, supporting nearly 20,000 acres of agricultural lands served by WSID and additional lands served by the Bureau of Reclamation's (BOR) Vale Project. Like the majority of dams in the US, it was built without hydroelectric capacity.
- Outside of the irrigation season, approximately October through March, the dam stores all or nearly all river flows. During the irrigation season, water is released according to irrigation needs through a pair of outlet jets located at the bottom of the dam.
- The proposed project would add a trash rack and a 170 foot long penstock to one of the dam outlets, conveying up to 425 cubic feet per second (CFS) of water to a powerhouse which would house a 2.7 MW turbine and generator.
- The dam would be operated so that irrigation water up to the hydro plant's design flow would be sent through the turbine. Flows in excess of the turbine's design would be sent through the other outlet. The hydro plant would have a bypass valve that would open if the system were to shut down for some reason, ensuring irrigation water availability.
- Energy from the turbine/generator would be stepped up to 25 kilovolts (kV) through a transformer and put onto new 25 kV lines that would be run 2.2 miles to the interconnection point.
- The project would interconnect with Harney Electric Cooperative (HEC). Power would be wheeled through HEC and Bonneville Power Administration (BPA) to make deliveries to Pacific Power as an off-system Qualifying Facility (QF).
- The project is expected to generate 6,288 megawatt hours (MWh) annually, on average. Generation from one year to another is expected to vary widely based on the water available for irrigation and the weather during any particular irrigation season. The irrigation district would receive a benefit via lease payments based on the gross revenues of the project.
- Project construction would occur after the end of the 2014 irrigation season, approximately October, and the project would begin commercial operation with the start of the next irrigation season, approximately April 2015.

Staff Evaluation

- For projects eligible for incentives, Energy Trust staff thoroughly evaluate the following prior to performing an above-market cost analysis:
 - Site control
 - Development and operational team expertise
 - Resource assessment
 - Energy conversion technology and estimated generation
 - Permitting
 - Interconnection

- Power purchase agreement
- Project revenues
- Project capital costs and operational and maintenance expenses
- Financing, grants, and incentives
- Staff's evaluation found the following:
 - WSH has site control through an agreement with WSID. The members of the WSH team are seasoned hydro developers and have proven themselves capable of executing on project development and construction. They have experience owning and operating other small hydro projects.
 - Flows from the dam are well documented and can vary widely during the irrigation season from as little as 50-100 cubic feet per second (cfs) during early or late months to well over 1,000 cfs during peak demand times. Flows are also dependent on larger climatic conditions and the overall amount of water stored behind the dam before the start of the irrigation season. In other words, during drought years the dam does not get completely filled and there is less water available for irrigation. The proposed project would utilize a design flow of 425 cfs to maximize the amount of time the unit will run at peak output and efficiency during the irrigation season.
 - WSH is working with China Huadian Engineering Corporation (CHEC), a Chinese turbine manufacturer they have used successfully on other projects. A Kaplan turbine would be used for the installation. This is an appropriate choice given the head and flows available. Based on the analysis of historical flows, generation may range from 1,000 to 15,000 MWh any given year, with an average over time of 6,288 MWh annually.
 - The project requires three main permits: a Federal Energy Regulatory Commission (FERC) License for the installation of the project, a New Major Hydroelectric Water Right from the Oregon Department of Water Resources, and an easement from the US Bureau of Land Management (BLM) to grant right-of-way for the installation of the power line. WSH is in the later stages of each of these permitting processes and expects to be complete in Q1 2014.
 - As part of the FERC License negotiation process with state and federal agencies, WSH is working with the Oregon Department of Fish and Wildlife on agreements to pay for the stocking of the reservoir with fish. In addition, WSH will build an improved diversion structure for a nearby irrigation diversion that has a negative impact on stream conditions.
 - To deliver energy to Pacific Power, WSH must interconnect and transmit through HEC and BPA. In the long term, HEC is interested in the output of this project because the energy generation matches peak summer time loads on its system. WSH is negotiating with HEC to eliminate wheeling charges in exchange for HEC to have an option on the project in the future. BPA wheeling costs are based on published rates and are calculated at \$33,048 per year. By eliminating HEC's wheeling charge, WSH has reduced the overall cost of wheeling to \$5.25 per MWh, the lowest Energy Trust has seen. WSH will sell the energy as an off-system QF under standard rates and terms.
 - With 6,288 MWh in generation annually, the project is expected to bring in \$238,315 in revenue in year one, escalating to \$537,505 in year 20. As

discussed above, however, the averages tend to hide the wide swings in generation and revenue that will likely be experienced by the project over time.

- The project's capital cost of \$3.5 million is within the expected range for a hydro project of this scale and scope. The use of a Chinese turbine, generator, and control equipment keeps costs down.
 - Operations and maintenance expenses, including wheeling fees and lease fees, are estimated at \$141,000 per year. This is within the expected range for a project of this size.
 - WSH intends to finance approximately 30% of the project's debt with a loan from Farm Credit Services (FCS) at a 6.5% interest rate for a 15 year term. The WSH partners, as they have on past projects, will provide personal guarantees to FCS based on the other assets they own. This is a necessary guarantee given that the expected wide generation range will result in revenue fluctuations.
 - As a taxable entity, WSH is eligible to take the Federal Investment Tax Credit and can take advantage of depreciation benefits. WSH will also be eligible to apply for a Renewable Energy Development (RED) Grant from the Oregon Department of Energy (ODOE) if ODOE chooses to solicit applications in 2014. The project does not have an ODOE Business Energy Tax Credit.
- Staff's evaluation found that the project appears strong. The largest source of risk is in the variability of generation from year to year. WSH is able to mitigate against that risk with their personal guarantee to FCS.
 - Staff also contracted with Steve Anderson of Evergreen Energy to provide an independent evaluation of the project. Anderson has broad experience in renewables and has provided many similar reviews for Energy Trust in the past. Anderson's review concurred with staff's assessment and he recommends support of the project.

Above-Market Cost Analysis

- Under SB1149 Energy Trust may provide incentives up to 100% of a project's above-market cost. The above-market cost is calculated as the difference between the cost to produce the power, over a specific term, and the market value of the power. Above-market costs are calculated on a 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 was chosen to match what we have utilized for other similar irrigation hydro projects and it also matches the term of the power purchase agreement the proposed project would take on.
- The project was evaluated at a 12% discount rate, consistent with the 10-12% range of discount rates Energy Trust has applied when evaluating other projects owned by independent developers. This discount rate was selected at the higher end of the range to reflect the risk associated with the variable generation and the necessity of the developers to back a significant loan with their own assets.

Project Financial Summary - Present Value Basis - Evaluated over 20 years	
Revenues	
Power Sales	\$ 2,831,830
Tax benefits (ITC and depreciation)	\$ 810,730
PV Total Revenues	\$ 3,642,560
Costs	
Equity	\$ 2,145,111
Principal and Interest Payments	\$ 1,003,361
O&M	\$ 1,059,128
Taxes	\$ 33,083
PV Total Project Cost	\$ 4,240,683
Above Market Cost (Revenues minus Costs)	\$ (598,123)
Above Market Cost Increased for Taxability of ETO Incentive	\$ (970,286)

- The project's costs are \$970,286 above-market over a 20 year period on a present value basis.
- Staff proposes to pay \$740,000, split into three equal payments over a two year period. The first payment of \$246,666 would be upon the project reaching commercial operation. The second payment would be made at the end of the first irrigation season, pending the project meeting generation performance milestones. The third payment would be made at the end of the second irrigation season, also pending meeting performance milestones. On a present value basis, Energy Trust's incentive would be worth \$592,452, or 61% of the project's above-market cost, enabling WSH to reach a simple payback in 10 years.
- At \$1.03 million/aMW the incentive is at the low end of the range for hydropower projects.
- Energy Trust would ask for 82,000 Renewable Energy Certificates (RECs) from WSH, equivalent to 65% of the expected additional generation produced by the project over 20 years. This equates to a cost of \$9 per REC, less than our current PUC benchmark of \$40 per REC as calculated on a three year rolling average across all custom renewable energy projects. FID would deliver all the RECs from the project until reaching the total.
- The REC allocation is in accordance with board policy requiring Energy Trust to take ownership of RECs in proportion to its contribution to above-market costs. Because we would be paying more for these RECs (\$9) than the market forecast (\$6), we do not need to consider reducing our REC allocation (board policy reduces the allocation if we are paying less than the market price for RECs).
- Staff proposes to negotiate a contract with WSH with milestones to allow Energy Trust to withdraw funding if the project is unable to move forward.
- Funds for the project are within the 2013 Other Renewables program budget.

Recommendation

Authorize the executive director to negotiate and sign a contract committing \$740,000 in funding for the Warm Springs Dam Hydroelectric Project, by adopting resolution 682, below.

RESOLUTION 682 APPROVING FUNDS FOR THE WARM SPRINGS DAM HYDROELECTRIC GENERATION PROJECT

WHEREAS:

1. Warm Springs Hydro LLC proposes to add hydroelectric power production to the existing Warm Springs Dam by installing an intake, penstock, powerhouse, 2.7 MW turbine, generator and associated interconnection equipment, resulting in 6,288 MWh of generation annually, on average.
2. Staff and an independent contractor reviewed the project design and costs and found them to be standard and reasonable for what is proposed.
3. The project’s costs are \$970,286 above market over a 20 year period on a present value basis.
4. Staff proposes an incentive of \$740,000 to be paid in three equal payments. The first payment would be made upon the project commencing commercial operation. The second payment would be made upon the end of the first irrigation season if the project meets generation performance milestones. The second payment would be made upon the end of the second irrigation season if the project meets generation performance milestones.
5. At \$1.03 million per average megawatt (aMW) the incentive is well below the target range of the 2013 Other Renewables budget of \$7.5 to \$14.1 million/aMW.

It is therefore **RESOLVED**, that the board of directors of Energy Trust of Oregon, Inc. authorizes:

1. Payment of up to \$740,000 to be made in three payments to Warm Springs Hydro LLC to offset the above-market costs of adding hydroelectric power production to Warm Springs Dam.
2. Energy Trust to take ownership of 82,000 RECs produced by the project; and
3. The executive director to enter into a contract(s) consistent with this resolution.

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

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

Board Decision

Clean Water Services–Durham: Cogeneration and Brown Grease Receiving and Processing Facilities Project

December 13, 2013

Summary

Clean Water Services-Durham Advance Wastewater Treatment Plant in Tigard, Oregon (CWS) is a waste water treatment plant currently operating a 500 kW cogeneration system. The current CWS cogeneration system is at the end of its useful life, and CWS is planning to install a new cogeneration facility with increased capacity to use excess biogas, which is currently flared, and to use collected fats, oils and greases (FOG or brown grease) from nearby restaurants and businesses to increase biogas production. The new cogeneration facility would include two cogeneration engines with combined biopower capacity of 1,696 kW as well as FOG receiving, collection and processing equipment. The new facility would be expected to generate 12,366 megawatt hours (MWhs) annually on average.

Staff and an independent third party consultant have evaluated the project, identified above-market costs, and recommend support of the project as consistent with Energy Trust goals.

This resolution would authorize:

- \$3,000,000 in incentive funding, paid incrementally in three payments to offset 62% of the new facility's above-market cost, on a present value basis,
- Collection of 200,948 renewable energy certificates (RECs) generated by the new facility, representing 65% of the new facility's expected generation,
- The executive director to enter into a consistent project funding agreement.

Energy Trust Goals

- The CWS cogeneration and brown grease receiving and processing facility biopower project supports Goal 2 of the 2010-2014 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from community-scale renewable energy projects.
- This project will add to the four operational biopower projects Energy Trust has supported at waste water treatment plants, currently representing approximately 3.0 megawatts (MW) of capacity and about 2.6 average megawatts (aMW) of generation.

Background

- In Oregon, 28 wastewater treatment facilities use anaerobic digestion to treat biosolids. Of these, 10 facilities use biogas from digestion to cogenerate, producing electricity to offset treatment plant loads and using the heat to meet thermal loads.
- CWS has been generating electricity and heat through anaerobic digestion since 1993, utilizing a 500 kW cogeneration system. The existing system is now at the end of its

useful life and will be decommissioned. The existing system reduces the plant's power purchases from Portland General Electric (PGE) by about 15% while heat from the engine and exhaust is used to warm the digester and facility buildings. CWS currently flares excess biogas from its anaerobic digestion process.

- In 2008, CWS commissioned a *Facilities Plan* that recommended a new cogeneration facility with increased capacity to use the excess biogas, a supply which is anticipated to grow. CWS also quantified the benefits of co-digesting fats, oils and greases (FOG or brown grease) collected from restaurants and businesses in the CWS district service territory to increase biogas production.
- The proposed project results from, among other things, the recommendations in the *Facilities Plan* and will include the reconfiguration of the CWS digesters, installation of two 848 kW cogeneration engines, construction of a brown grease receiving and processing facility, gas storage in a retrofitted digester, and modification to hot water piping and electrical systems.
- The project is expected to generate 12,366 megawatt hours (MWh) annually, on average. Generation from one year to another is expected to vary modestly based on system operation and maintenance.
- CWS' goals for the project are two-fold: to achieve their self-generation energy goals and to improve brown grease management in the district's service territory, lowering operations and maintenance costs.
- The project is expected to begin commercial operation in January 2015.

Staff Evaluation

- For projects eligible for incentives, Energy Trust staff thoroughly evaluate the following prior to performing an above-market cost analysis:
 - Project qualification
 - Biogas feedstock
 - Estimated energy generation
 - Revenue from co-digestible materials
 - Interconnection
 - Off-take rate
 - Project capital costs
 - Operation and maintenance costs
 - Financing and grants, and
 - Operating expertise
- Staff's evaluation found the following:
 - The project meets key qualifications for funding from Energy Trust: it is less than 20MW in capacity, it off-sets electricity demand from PGE and it meets the requirements of a qualifying biopower project.
 - About 400,000 ft³ per day of biogas is currently produced from the anaerobic digestion of wastewater solids alone. This is about 64% of the biogas needed to operate two 848 kW cogeneration engines at full output. Having two-thirds of the feedstock secured is considered very favorable, and CWS expects this number

to increase each year as population grows. By 2025, Durham expects that wastewater solids will be able to provide 100% of the biogas needed to operate the engines.

- The engine generators require approximately 628,000 ft³ per day of digester gas to run at full output. CWS determined that about 15,000 gallons per day of brown grease is necessary to increase biogas production to the required level. A 2010 study, supported by Energy Trust, concluded that about 22,700 gallons per day of brown grease is available in Washington County. Based on this study and other feedstock analysis conducted in the Metro area, it is reasonable to assume that CWS will be able to negotiate feedstock supply contracts that would secure sufficient volumes of brown grease and other co-digestible organic liquids, but such contracts would not be negotiated until 2014.
 - At full output the engines are expected to generate 12,366 MWh annually. The project is to bring in about \$999,866 in revenue in year one, escalating to \$1,661,162 in year 25. These revenue estimates are based on projections of revenues from brown grease tipping fees and from off-setting retail power from PGE.
 - CWS is finalizing an interconnection agreement with PGE, which will only allow for onsite use of the energy generated from the project. The project will not net-meter or “export” electricity and will be designed to prevent power flow out into PGE’s system.
 - Electricity at CWS is provided by PGE at a retail rate of \$0.05791 per kWh and the facility will remain on its existing rate schedule after the project is completed. Minimum demand charges will remain.
 - The project’s capital cost of \$17.6 million is within the expected range for a biopower project of this scale and scope and is comparable with capital costs seen for biopower projects at other wastewater treatment plants.
 - Operations and maintenance expenses, including gas cleaning and cogeneration system maintenance and overhauls are estimated at about \$450,000 per year. This is within the expected range for a project of this size.
 - CWS will own the project. It will be financed using a combination of 50% debt and 50% cash reserves, which is CWS’ usual method of capital project financing. The debt portion of the capital funding will be the proceeds from a previous sale of 3.26% interest revenue bonds.
 - CWS received a preliminary tax credit certification for \$3,000,944 from the Oregon Department of Energy’s (ODOE) Energy Incentive Program (2013 Combined Heat and Power). According to ODOE, the pass-through value of this tax credit is \$2,851,503.
 - CWS has a solid track record of operating cogeneration facilities at wastewater plants. The CWS Durham plant has operated a cogeneration system from biogas since 1993. They are also well-positioned to learn how to operate and maintain similar biogas cleaning equipment from the City of Portland and the City of Gresham.
- Staff’s evaluation found that the project appears strong. The primary risk we see is related to not securing sufficient brown grease co-digestible liquids, which are necessary

to produce sufficient biogas to fuel both engines and create tipping fee revenue. However, given CWS' brown grease feedstock analysis, its location near a transportation corridor, other sources of high strength organic wastes available in the region, and increasing flows of wastewater solids into the treatment plant, it is reasonable to project that adequate supplies of digestible materials are available for this project as proposed. CWS is able to further mitigate against this risk because biogas production from wastewater solids alone will produce enough fuel for both engines by about 2025.

- Staff also contracted with Jeff Cole and Keith Anderson of Konstrukt to provide an independent evaluation of the project. Cole and Anderson have broad experience in biopower projects and municipal construction projects. They have provided similar reviews for Energy Trust in the past. Their review concurred with staff's assessment and they recommend support of the project.

Above-Market Cost Analysis

- Under SB1149 Energy Trust may provide incentives up to 100% of a project's above-market cost. The above-market cost is calculated as the difference between the cost to produce the power, over a specific term, and the market value of the power. Above-market costs are calculated on a 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 25-year term. The length of the term was chosen to align with the project's financing term.
- The project was evaluated at an 8% discount rate, consistent with the discount rate Energy Trust has applied to other biopower projects at municipalities. This figure reflects the low project risk (mature technology, repowering of an existing cogeneration system, anticipated FOG revenue stream, and operational expertise), public ownership, and ease of financing.

Project Financial Summary - Present Value (PV) Basis - Evaluated over 25 years	
Revenues	
Power Sales	\$ 9,454,935
CHP Tax Credit Sale	\$ 2,640,281
Brown Grease (FOG) Tipping Fees	\$ 3,506,664
PV Total Revenues	\$ 15,601,880
Costs	
Equity	\$ 8,830,432
Principal and Interest Payments	\$ 5,721,030
O&M	\$ 5,574,454
PV Total Project Cost	\$ 20,125,916
Above Market Cost (Revenues minus Costs)	\$ (4,524,036)

- The project's costs are \$4,524,036 above-market over a 25-year period on a present value basis.
- Staff proposes to pay \$3,000,000, split into three equal payments over a two-year period. The first payment of \$1,000,000 would be upon the project reaching commercial operation. The second payment would be not sooner than 12 months after the first payment, conditioned upon the project meeting generation performance milestones. The third payment would be not sooner than 12 months after the second, also conditioned upon meeting performance milestones. On a present value basis, Energy Trust's incentive would be worth \$2,783,265, or 62% of the project's above-market cost.
- At \$2.13 million per aMW, the incentive is within the range for previous biopower projects. It is less than the City of Pendleton (\$2.68 million per aMW), but more than JC-Biomethane (\$1.39 million per aMW).
- Energy Trust would ask for 200,948 renewable energy certificates (RECs) from CWS, equivalent to 65% of the expected generation produced by the project over 25 years. This equates to a cost of \$14.93 per REC, less than our current PUC benchmark of \$40 per REC as calculated on a three year rolling average across all custom renewable energy projects.
- Staff proposes to negotiate a contract with CWS with milestones to allow Energy Trust to withdraw funding if the project is unable to move forward.
- Funds for the project are within the 2013 budget.

Recommendation

Authorize the executive director to negotiate and sign a contract committing \$3,000,000 in funding for the Clean Water Services-Durham cogeneration and brown grease receiving facilities project, by adopting resolution 683, below.

RESOLUTION 683

**APPROVING FUNDS FOR THE CLEAN WATER SERVICES–
DURHAM COGENERATION AND BROWN GREASE RECEIVING FACILITIES PROJECT**

WHEREAS:

- 1. Clean Water Services proposes to install cogeneration power production at the existing Durham Advanced Wastewater Treatment Plant by installing two 848 kW cogeneration engines, a biogas cleaning facility, a brown grease storage and processing facility, modifications to associated hot water piping and electrical systems, and gas storage in an existing digester, resulting in 12,366 MWh of generation annually, on average.**
- 2. Staff and an independent contractor reviewed the project design and costs, and found them to be standard and reasonable for what is proposed.**
- 3. The project's costs are \$4,524,036 above market over a 25-year period on a present value basis.**
- 4. Staff proposes an incentive of \$3,000,000 to be paid in three equal payments. The first payment would be made upon commercial operation. The second payment would be after 12 months, pending the project meeting generation performance milestones. The third payment would be not sooner than 12 months after the second, also pending meeting performance milestones.**

It is therefore RESOLVED, that the board of directors of Energy Trust of Oregon, Inc. authorizes:

- 1. Payment of up to \$3,000,000 to be made in three payments to Clean Water Services to offset the above-market costs of installing a cogeneration system and brown grease receiving and processing facilities at the Durham Advanced Wastewater Treatment Plant.**
- 2. Energy Trust to take ownership of 200,948 RECs produced by the project; and**
- 3. The executive director to enter into a contract(s) consistent with this resolution.**

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

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

Board Decision

FID Plant Two Hydroelectric Turbine Upgrade Project

December 13, 2013

Summary

Farmers Irrigation District (FID) in Hood River, Oregon has proposed an upgrade to one of its two hydroelectric power plants (Plant Two) to address ongoing performance and efficiency issues. To upgrade Plant Two, FID proposes replacing two existing Francis hydroelectric turbines, 1 MW and 2 MW respectively, with a single 3 MW Turgo turbine. The replacement turbine is more efficient at a wider range of water flows, will not suffer from cavitation, and is better able to handle the sediment in FID's water. The upgrade project is expected to yield a 12% increase in generation at the plant and reduce operation and maintenance costs substantially. The new turbine would be expected to generate an additional 1,953 megawatt hours (MWh) annually, on average, beyond the existing baseline generation at the facility.

Staff and an independent third party consultant have evaluated the project, identified above-market costs, and recommend support of the project as consistent with Energy Trust goals.

This resolution would authorize:

- Up to \$825,000 in incentive funding, paid incrementally in two payments, offsetting 52% of the facility upgrade's above-market cost on a present value basis,
- Collection of 29,295 renewable energy certificates (RECs) created by the upgrade, representing 75% of the new expected generation over 20 years,
- The executive director to enter into a consistent project funding agreement.

Energy Trust Goals

- The FID Plant Two project supports Goal 2 of the 2010-2014 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load from community-scale renewable energy projects.
- This project will add to the ten operational hydropower projects Energy Trust has supported, currently representing 5.9 megawatts (MW) of capacity and 2.7 average megawatts (aMW) of generation. Incentives are dedicated for four additional projects under construction, representing 2.2 MW of capacity and 0.8 aMW of generation.

Background

- In August, Energy Trust announced a competitive process to allocate up to \$1.75 million in incentives for certain types of renewable energy facilities in Pacific Power territory. Two hydropower projects applied, including this one, as did a biopower project which did not meet Energy Trust's funding criteria. Staff recommends this project for funding. The other hydropower project is also under consideration in a separate board resolution.

- The Hood River Valley produces a large quantity of high-value pears, apples and cherries. FID diverts water from Dead Point Creek and the Hood River and provides it to 5,800 acres of land and 1,722 residential and agricultural users.
- FID has nearly 30 years of operational experience at its two hydroelectric power plants, known as Plant Two and Plant Three, which deliver energy to Pacific Power. Energy Trust has provided \$450,000 in incentives for three past piping projects that FID has successfully executed, conservatively resulting in over 1,000 MWh annually of additional generation at the existing plants.
- FID's piping work also resulted in the pressurization of its distribution system, enabling the removal of energy consumptive, high-maintenance pumps at each of its patron's properties. These water delivery improvements make FID one of the nation's most advanced and conservation-minded irrigation districts.
- FID is interested in upgrading and repowering Plant Two now due to ongoing performance and efficiency issues with the current Francis turbines which have been in operation since 1985. The turbines are not at the end of their operational lives (hydro turbines can often last 50 years or more), but the Francis units have performed poorly and are vulnerable to sediment erosion and cavitation¹ damage, requiring annual maintenance costing as much as \$125,000 per year.
- The sediment erosion is caused by sand in the water supply. FID's water sources move large amounts of glacial sediment, some of which is taken into FID's delivery infrastructure. FID has made substantial improvements in sediment management, including the installation of screens and filters to remove sediment, but fine particulates are still an issue for the current hydropower equipment and user's sprinklers.
- The electrical control system for the existing units is also complex and prone to failure. FID estimates 33,000 MWh of unrealized generation since 1985 due to the troublesome units and total excessive operations and maintenance costs are estimated at over \$1.5 million dollars.
- FID proposes to replace Plant Two's two existing Francis hydroelectric turbines, 1 MW and 2 MW respectively, with a single 3 MW Turgo turbine built by Gilkes, a respected, UK based turbine manufacturer that holds the patent on Turgo turbines.
- The proposed replacement turbine, generator, and control package is expected to yield a 12% increase in generation at the plant, 1,953 MWh, due to higher operational efficiencies at wider flow variations. The Gilkes turbine has better controls, better ability to handle sediment in the water, and does not cavitate, simplifying operations and reducing maintenance costs by nearly \$62,000 annually.
- Energy Trust has previously supported engine replacements for biomass and biogas projects, but we have not previously funded the replacement of a hydro turbine. Each of the past renewable energy equipment replacements has been evaluated in a manner consistent with the way the efficiency programs evaluate similar equipment replacements. Total project costs are evaluated but only the additional generation above baseline generation is counted. Other benefits, such as reduced operations and maintenance expenses are also accounted for. Staff evaluated the current proposal in accordance with these past practices.

¹ Cavitation is the formation of bubbles due to rapid changes of pressure. Bubbles form where the pressure is relatively low; when pressure rises they implode generating an intense shockwave. This can be a significant cause of wear in certain kinds of turbines, like a Francis. Other turbines are immune to cavitation due to their design.

- The turbine manufacturing process can take up to a year. Project construction is expected to take approximately one month and the new turbine would come online in mid-2015.

Staff Evaluation

- For projects eligible for incentives, Energy Trust staff thoroughly evaluate the following prior to performing an above-market cost analysis:
 - Site control
 - Development and operational team expertise
 - Resource assessment
 - Energy conversion technology and estimated generation
 - Permitting
 - Interconnection
 - Power purchase agreement
 - Project capital costs and operational and maintenance expenses
 - Financing
 - Project revenues
- Staff's evaluation found the following:
 - FID has site control, a proven team capable of executing on project development, and the experience to operate the project when complete.
 - The project will utilize a proven resource and the Gilkes turbine appears capable of delivering the additional generation. Gilkes will guarantee the efficiency of the turbine across varying flows.
 - The project requires no permitting at either the state or federal level and will utilize existing interconnection and power purchase agreements with Pacific Power that do not require modification.
 - The project's capital cost of \$4.3 million is within the expected range for a hydro project of this scale. In comparison with a Chinese turbine, this unit is 2-4 times more expensive. FID is paying more to go with Gilkes because of their market reputation and efficiency guarantee.
 - FID intends to finance approximately 40% of the project's costs, at current bond rates around 5%, through a program offered by the Special Districts Association of Oregon. The project's revenues support this level of debt. The project does not have a Business Energy Tax Credit nor any grants or other incentives. Energy Trust would encourage FID to apply for any grants which become available.
 - Operations and maintenance costs are reduced from the current baseline and treated as revenues to FID, starting at \$62,000 and escalating at 3% annually. The improvements to operations and maintenance are a large part of the project's value to FID.
 - Revenue from the additional energy starts at \$136,000 in the first year and escalates according to FID's power purchase agreement (PPA). The current PPA runs through 2025. Staff utilized published power prices in current standard Qualifying Facility contracts to model energy revenues after 2025.
- Staff's evaluation found that the project appears viable and did not find any foreseeable or significant risks to the project's success.

- Staff also contracted with Steve Anderson of Evergreen Energy to provide an independent evaluation of the project. Anderson has broad experience in renewables and has provided many similar reviews for Energy Trust in the past. Anderson’s review concurred with staff’s assessment and he recommends support of the project.

Above-Market Cost Analysis

- Under SB1149 Energy Trust may provide incentives up to 100% of a project’s above-market cost. The above-market cost is calculated as the difference between the cost to produce the power, over a specific term, and the market value of the power. Above-market costs are calculated on a 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 was chosen to match what we have utilized for other similar irrigation hydro projects and it also matches the term of the debt the proposed project would take on.
- The project was evaluated at an 8% discount rate, consistent with the 8-10% range of discount rates Energy Trust has applied when evaluating other municipally or government-owned projects. This discount rate was selected at the lower end of the range because the project has lower than average risks associated with it.

Project Financial Summary - Present Value Basis - Evaluated over 20 years		
Revenues		
Power Sales	\$	1,492,077
Reduced O&M expenses	\$	844,011
	PV Total Revenues	\$ 2,336,088
Costs		
Equity	\$	2,496,000
Principal and Interest Payments	\$	1,434,645
	PV Total Project Cost	\$ 3,930,645
Above Market Cost (Revenues minus Costs)		\$ (1,594,557)

- The project’s above-market costs total \$1,594,557 on a present value basis.
- Staff proposes to provide an incentive of \$825,000, split into two payments. The first payment of \$412,500 would be made upon the project resuming operation. The second payment would be made at the end of the first year of operation, pending the project meeting generation performance milestones.
- On a present value basis Energy Trust’s incentive is worth \$735,597, or 52% of the project’s above-market cost.
- At \$3.7 million/aMW the incentive is in the mid-range of incentive levels for hydropower projects.

- Energy Trust would ask for 29,295 RECs from FID, equivalent to 75% of the expected additional generation produced by the project over 20 years. This equates to \$28 per REC, less than our current PUC benchmark of \$40 per REC as calculated on a three year rolling average across all custom renewable energy projects. FID would deliver all the RECs within five years, reducing Energy Trust's risk and providing additional value to Pacific Power ratepayers.
- The REC allocation goes beyond board policy requiring Energy Trust to take ownership of RECs in proportion to its contribution to above-market costs (52%). Because we would be paying more for these RECs (\$28) than the market forecast (\$6), we do not need to consider reducing our REC allocation (board policy reduces the allocation if we are paying less than the market price for RECs).
- Staff proposes to negotiate a contract with FID with milestones to allow Energy Trust to withdraw funding if the project is unable to move forward.
- Funds for the project are within the 2013 Other Renewables program budget.

Recommendation

Authorize the executive director to negotiate and sign a contract committing \$825,000 in funding for the FID Plant Two project, by adopting resolution 684, below.

**RESOLUTION 684
APPROVING FUNDS FOR THE FARMERS IRRIGATION DISTRICT
PLANT TWO HYDROELECTRIC GENERATION PROJECT**

WHEREAS:

1. The Farmers Irrigation District proposes to install an upgraded turbine, generator, and associated control equipment in its Plant Two powerhouse to increase generation by 1,953 MWh annually, a 12% increase.
2. Staff and an independent contractor reviewed the project design and costs, and found them to be standard and reasonable for what is proposed.
3. The project’s costs are \$1.594 million above-market over a 20 year period on a present value basis.
4. Staff proposes an incentive of \$825,000 to be paid in two equal payments. The first payment would be made upon the project re-commencing operations. The second payment would be made upon the first anniversary of the project re-commencing operations if the project meets generation performance milestones.
5. At \$3.7 million per average megawatt (aMW) the incentive is well below the target range of the 2013 Other Renewables budget goal of \$7.5 to \$14.1 million/aMW.

It is therefore **RESOLVED**, that the board of directors of Energy Trust of Oregon, Inc. authorizes:

1. Payment of up to \$825,000 to be made in two payments to Farmers Irrigation District to offset the above-market costs of the turbine upgrade at the Plant Two hydroelectric facility;
2. Energy Trust to take ownership of 29,295 RECs produced by Farmers Irrigation District; and
3. The executive director to enter into a contract(s) consistent with this resolution.

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

Opposed:

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

**Energy Trust New Buildings Program
Process Evaluation Report 2
Final**

Prepared by

PWP, Inc.

And

Wirtshafter Associates, Inc.

September 2013

Executive Summary

This report presents the findings of the process evaluation of the Energy Trust of Oregon New Buildings (NB) program for 2012. The NB program provides financial incentives and technical assistance to owners who install energy efficiency measures in new commercial construction and major renovation projects. During the 2012 program year, incentives were paid for 312 sites, as shown in Exhibit ES-1.

Exhibit ES-1 – 2012 Electric and Gas Savings -- Total

Sector	Projects	Savings	
		kWh	Therms
New Buildings	266	55,320,564	478,771
New Multifamily	46	2,229,870	49,660
Total	312	57,550,434	528,431

The goal of this process evaluation was to obtain feedback on program design and implementation that can be used to more effectively and efficiently deliver energy efficiency in new buildings and improve customer satisfaction. Evaluation activities included a combination of secondary data and program document review and primary data collection, including attending early design meetings, accompanying NB program staff on post-installation inspections, and interviews with 50 participants. In addition, the 2012 results of Energy Trust's Fast Feedback data collection effort were incorporated into the current evaluation findings.

Key findings reported in this report as drawn from these data collection and analysis activities are summarized below.

Conclusions

- The NB program continues to meet its goals and the needs of new building owners and trade allies. Savings come from a diverse mix of participants in terms of track, building type, fuel, utility, and geographic region.
- The NB program has evolved into a highly effective new construction program, achieving savings above and beyond one of the most stringent building codes in the country, and engaging most of the key designers, engineers and owners in the Oregon market. The program has been successful in finding above-code savings opportunities, with significant savings attributable to the NB team's ability to assist design teams that otherwise might have had trouble meeting code.

- However, finding savings above and beyond code will become more difficult as a) the remaining 2007 Code projects work through the pipeline and b) the next, even more stringent code is introduced.
- In addition to increasing participation, the NB program appears to be engaging with many of its participants relatively early in the design and construction process. This has helped encourage more design teams to conduct early design meetings and charrettes, resulting not only in adoption of more comprehensive energy efficiency measures on individual projects, but also in market transformation as more owners, architect and engineers are receptive to such meetings and the wider range of energy efficient options they cause to be brought to the table.
- In the face of a challenging commercial new construction market, the NB program has been successful at adapting to opportunities and capitalizing on them, as with data centers, which accounted for half of 2012 kWh savings. At the same time, the program has been effective in working with hard-to-reach projects, with design-build and other small projects well represented in the mix of overall participants.
- Although the NB program continues to record the various tracks that projects enroll in, participants – whether owners or other members of the design team -- are generally unaware of the participation options available to them. Most of these participants rely on NB program staff to help them identify the appropriate path to participation.
- Participants also rely heavily on program staff to help them through the details of application process, particularly use of the Lighting and HVAC calculators.
- Customers are generally very pleased with the NB program, NB staff and the level of communication and support they receive. Concerns focus on:
 - Uncertainty regarding incentives, which sometimes means projects cannot capitalize the incentive into the decision process. In very tight budgets, this may actually prevent the project from including some energy efficiency.
 - The amount of incentives relative to the paperwork involved (particularly for large projects with relatively small incentives).
 - The amount of paperwork, including the multiple numbered forms whose function in the participation process is not always clear.
 - Extensive back and forth between the program and participants, with the perception that there are multiple information requirements as part of the participation process.

- Length of time to receive the incentive, with more than one-third of Fast Feedback survey respondents rating this 3 or lower on a 1 to 5 scale.
- Turnover among NB staff and managers, which was mentioned by several participants as a factor that added to the time and effort required for participation.

Recommendations

Most of the recommendations made in the 2011 process evaluation report and summarized in Section 2 of this report have been or are being implemented by the NB program. The program is continuing outreach and networking activities through its trade ally network, successfully engaging many projects early in the design phase and providing early design assistance (EDA), and helping prepare the market for future code evolution. Outreach manager changes appear to be happening smoothly, and we did not encounter significant concern or confusion regarding tax credits or other offerings relative to the NB program. Finally, as noted in the evaluation, participants who used the calculators and sought assistance were very satisfied with the help they received, and other interview respondents also pointed out that the application process would have been much more difficult without the application assistance provided by the program.

One recommendation that has not been implemented has been the offering of an innovation incentive that would reward architects, engineers, owners, developers and others who pursue aspirational, highly efficient design. The concern is that this would benefit primarily firms who already pursue such designs routinely as part of their standard practice, and who would be free riders when claiming such an incentive. We believe this concern can be partly addressed by offering this incentive for the first project on which a firm achieves a specific percentage gain in efficiency over its previous best practice. This might encourage firms who currently strive for small incremental gains to push for a larger efficiency increase to qualify for the incentive.

Based on the conclusions summarized above and other findings throughout the report, the following recommendations are designed to help ensure that NB program efforts remain on track and addresses any aspects of program delivery that may inhibit participation.

- The program should continue its outreach to smaller projects through the use of market-specific packages and working with design-build projects. To support the latter, the program tracking data should include information on whether a project is design-build so that the outcomes of these projects can be tracked separately.
- As the NB program strives to engage projects earlier in the design process, it should maintain the emphasis on supporting early design meetings and charrettes. To achieve optimal results from these meetings, a single member of the design team should be formally designated as having responsibility for ensuring follow-up. In addition to the

\$2,500 incentive for holding the EDA meeting/charrette, consider adding a small (\$500) bonus incentive for the architect, engineer, or green building consultant to prepare a follow-up report that details what measures were ultimately incorporated into the design and why. In addition to the Early Design Assistance Report Template, the program should provide a sample report with a more detailed description of the type of discussion, estimated savings and level of specificity desired.

- Since participants are often unaware that they received code compliance assistance consider providing more concrete documentation of the services provided, such as an invoice for the value of the services provided with a “paid by Energy Trust” and \$0.00 due shown on the receipt.
- Participants recognize the need for Energy Trust to document all aspects of NB program participation, but would appreciate any streamlining of the paperwork process, which would have the added benefit of reducing participant reliance on NB staff to complete forms. To the extent possible, it would be helpful to refer to forms by name rather than by number as a means of making the application process more user-friendly.
- As another means to make the participation process (including the selection of a program track or options) more transparent, Outreach Managers or other program staff could provide a brief summary of participation options tailored to what they know about a project (e.g., size, building type) to help guide their discussion with the design team regarding how to proceed. After a decision has been made, both a leave-behind and follow-up emails could be used to clarify the participation options and measures selected. Such a summary should include a description of Code Assistance if provided, along with estimated savings.
- Consider providing participants with an “X plus or minus 10%” guaranteed incentive level to facilitate equipment selection and budgeting, as well as potentially greater influence on the decision-making process.
- To encourage “deep savings,” highlight the fact the program offers tiered incentives for custom projects that increase according to the extent by which the project exceeds code. To encourage innovation, offer a bonus incentive for the first 5 or 10 projects using an emerging energy efficient technology.
- Be proactive when staff turns over. Make every attempt to have new staff thoroughly up to speed not only on the program, but on individual projects. Make sure that a project history is available to new OMs or others for every individual they are likely to make contact with. Also, have the NB Program Manager at PECI place a follow-up phone call to every member of the design team for each project affected by a staff member’s departure or change in responsibilities.

MEMO

Date: November 20, 2013
To: Board of Directors
From: Jessica Rose, Business Sector Manager, New Buildings Program
Sarah Castor, Evaluation Sr. Project Manager
Subject: Staff Response to the New Buildings Program Process Evaluation Report 2
(Program Year 2012)

This is the second of two process evaluation reports on the New Buildings program. The first report, completed in 2012, covered findings from staff interviews and included a review of documents and program activity. This report, focusing on 2012 activity, includes results of a second review of program data and Fast Feedback results, as well as findings from interviews with participants and program allies involved with 2012 and 2013 projects. The results of the 2012 New Buildings Process Evaluation confirm program design decisions that took effect in 2010 are supporting the market, and continue to indicate market transformation impacts.

As noted in the 2011 evaluation report, the program plans to continue outreach activities, support early design, provide tiered incentives to encourage deeper savings and institute simplified calculators for both HVAC and lighting. Also, CRM will be further leveraged to mitigate the impact of any staff changes using methods indicated in the 2011 report.

Many of the recommendations made in the 2012 evaluation report are to refine program delivery in areas that are working well, including:

- Support early design processes to influence decision making with the project team and owner through code compliance assistance, Early Design Assistance and a lighting design consultation. The program plans to enhance early design practices by introducing new tools to assess savings strategies early, and also to continue offering plan reviews at no cost to the project that typically result in design changes that meet or exceed code. Based on the recommendations provided in this report, we are unsure if providing a zero-dollar price tag for services would help the customer see the value; often the value becomes apparent when they enroll the next project and seek savings rather than just meeting code requirements.
- Consideration will be made for refining the reporting process for projects receiving Early Design Assistance and modifying the look and feel of forms, as our web platforms and IT systems allow. New Buildings will continue to enhance internal processes to streamline delivery and improve what data can be tracked in our IT systems. While it is not practical to track design-build projects and firms specifically, the program is continuing to expand outreach to small and regional firms that do design-build work.
- The program will continue to recommend the most optimal track for a project based on the nature and goals of a project (information for each program track is available on our website). By presenting a customer with multiple options that come with detailed requirements in early project stages, we risk losing the customer because program

participation feels complicated and costly to participate. Our objective is to keep participation simple and focus on the overall savings goal.

- New Buildings will expand Market Solutions – packaged incentives tailored by building type – targeting small commercial building owners and will roll out two more packages in 2014 for a total of eight packages.
- Outreach materials describing the tiered incentive framework are provided to custom projects and help continually pull custom projects further up the ladder.

Notes on October 2013 Financial Statements

November 25, 2013

Revenue

Consistent with what we've seen throughout 2013, total revenues remain very close (within 1%) to budgeted amounts in aggregate. The Cascade Natural Gas variance is lessening over time, although actuals will likely still lag behind budget at year end.

	<u>Oct-13</u>	<u>YTD Actual</u>	<u>YTD Budget</u>	<u>YTD Var</u>	<u>YTD %</u>
PGE		70,459,366	70,094,100	365,266	1%
PAC		43,401,528	41,969,139	1,432,389	3%
NWN		22,692,965	21,878,798	814,167	4%
CNG		1,686,608	2,608,965	(922,357)	-35%
Investment Income		76,181	100,000	(23,819)	-24%
Total		138,316,648	136,651,002	1,665,646	1%

Reserves

Total Reserves at the end of October for the four major utilities are indicated below. We will begin to see the "hockey stick" impact next month. November and December will show substantial increases in spending and decreases in Reserves. It's likely that ending balances will be higher than the budgeted amounts below for the start of 2014.

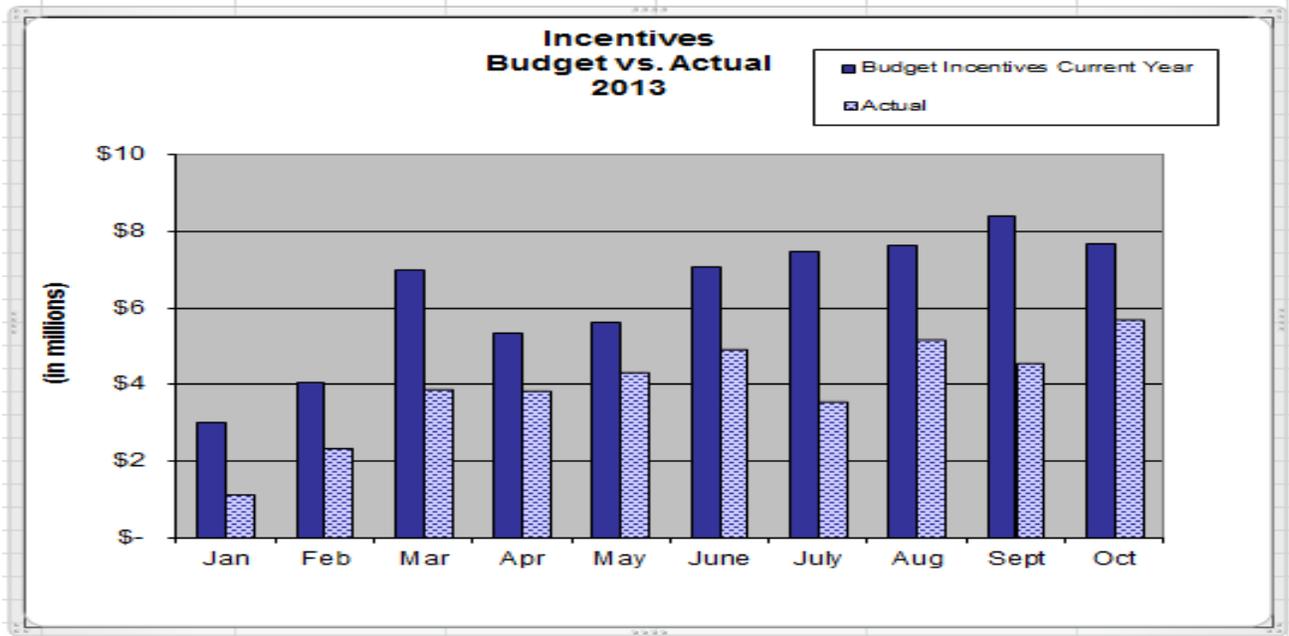
Reserves

	<u>Amount</u>	<u>Anticipated Amount at Year End *</u>
PGE	34,339,471	17,043,968
PacifiCorp	15,561,407	8,084,843
NW Natural	9,599,628	6,457,378
Cascade	685,379	920,517
NWN Industrial	1,153,330	0
NWN Washington	796,168	337,435
Clark PUD	29,693	0
PGE Renewables	11,885,914	11,146,829
PAC Renewables	11,639,275	10,790,511
Contingency Reserve	5,000,000	5,000,000
Contingency Available	2,556,283	2,828,277
Total	93,246,548	62,609,758

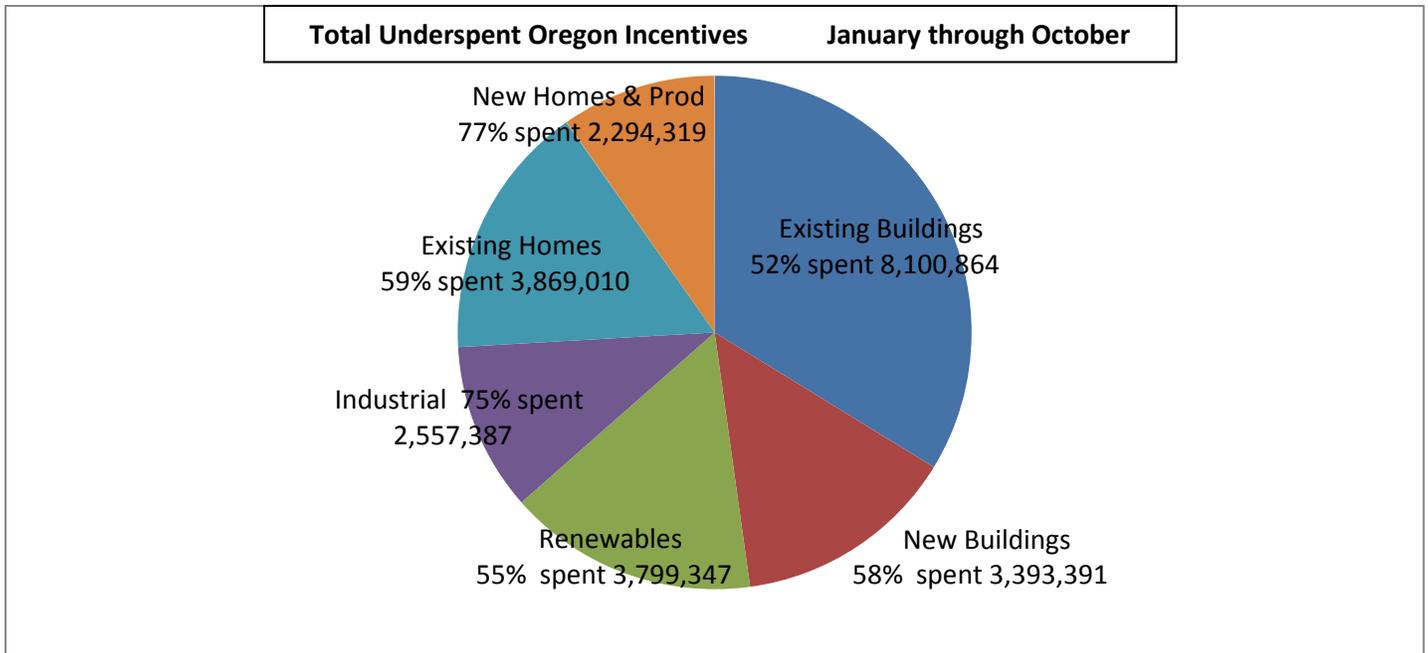
* From 2013 Forecast

Expenses

Total company expenses YTD are \$90.7 million, which is \$32 million less than budgeted spending and \$14 million less than prior year at this time. Incentive spending makes up \$24 million (75%) of the total amount underspent. Last year incentive spending was underspent by \$12 million. \$20 million of the \$24 million underspent in 2013 is from Efficiency programs. As of October 31, incentive payments are 24% (\$12.3 million) below the same time last year.



The following chart shows, by program, the incentive variance (versus budget) for the first ten months. The % next to the program indicates how much of the current year's budgeted incentives have been spent. Existing Buildings, for example, has spent 52% of their January to October incentive budget, the remaining unspent 48% totals \$8,100,864 of the total incentive spending variance.



Incentives thru Oct 2013	Total Incentives			
	<u>Actual</u>	<u>Budget</u>	<u>Variance</u>	<u>Var %</u>
Existing Buildings	8,868,645	16,969,509	8,100,864	48%
New Buildings	4,604,856	7,998,247	3,393,391	42%
Production Efficiency	7,859,040	10,416,427	2,557,387	25%
Existing Homes	5,558,344	9,427,354	3,869,010	41%
New Homes & Products	7,471,462	9,765,781	2,294,319	23%
Washington Programs - All	273,481	445,145	171,664	39%
Solar	3,096,561	4,862,466	1,765,905	36%
Open Solicitation	370,195	2,153,938	1,783,743	83%
Biopower	1,136,382	1,386,081	249,699	18%
Total Incentives	39,238,966	63,424,946	24,185,979	38%
Energy Efficiency Only	34,635,828	55,022,463	20,386,635	37%

Oct 2013 Year to Year	Total Incentives			
	<u>Current Year</u>	<u>Prior Year</u>	<u>Variance</u>	<u>Var %</u>
Existing Buildings	8,868,645	11,392,086	2,523,441	22%
New Buildings	4,604,856	5,322,939	718,083	13%
Production Efficiency	7,859,040	6,967,246	(891,794)	-13%
Existing Homes	5,558,344	8,060,683	2,502,339	31%
New Homes & Products	7,471,462	7,556,745	85,283	1%
Washington Programs - All	273,481	260,814	(12,667)	-5%
Solar	3,096,561	10,621,915	7,525,354	71%
Open Solicitation	370,195	648,953	278,758	43%
Biopower	1,136,382	752,740	(383,642)	-51%
Total Incentives	39,238,966	51,584,117	12,345,151	24%
Energy Efficiency Only	34,635,828	39,560,513	4,924,685	12%

Energy Trust of Oregon, Inc
BALANCE SHEET
October 31, 2013
(Unaudited)

	OCT 2013	SEP 2013	DEC 2012	OCT 2012	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	92,847,355	89,463,097	64,005,605	77,475,477	3,384,258	28,841,749	15,371,878
Restricted Cash (Escrow Funds)	252,728	252,720	462,692	462,625	8	(209,964)	(209,898)
Investments	5,977,681	5,976,151	0	0	1,530	5,977,681	5,977,681
Receivables	4,314	4,728	123,795	25,236	(415)	(119,481)	(20,922)
Prepaid Expenses	553,744	623,994	265,829	386,577	(70,250)	287,914	167,167
Advances to Vendors	2,027,916	2,439,851	2,109,014	2,040,574	(411,935)	(81,098)	(12,658)
Total Current Assets	101,663,737	98,760,540	66,966,935	80,390,488	2,903,196	34,696,802	21,273,248
Fixed Assets							
Computer Hardware and Software	1,401,967	1,377,967	1,347,388	1,335,329	24,000	54,579	66,639
Leasehold Improvements	313,333	313,333	287,385	287,385	0	25,948	25,948
Office Equipment and Furniture	600,662	600,662	600,662	600,662	0	0	0
Total Fixed Assets	2,315,962	2,291,962	2,235,435	2,223,376	24,000	80,527	92,587
Less Depreciation	(1,445,613)	(1,417,980)	(1,183,098)	(1,128,894)	(27,633)	(262,515)	(316,720)
Net Fixed Assets	870,349	873,983	1,052,337	1,094,482	(3,633)	(181,987)	(224,133)
Other Assets							
Rental Deposit	61,461	61,461	64,461	64,461	0	(3,000)	(3,000)
Deferred Compensation Asset	472,262	468,265	409,369	362,428	3,997	62,893	109,833
Total Other Assets	533,723	529,726	473,830	426,889	3,997	59,893	106,833
Total Assets	103,067,809	100,164,249	68,493,102	81,911,860	2,903,560	34,574,707	21,155,949
Current Liabilities							
Accounts Payable and Accruals	8,350,108	7,312,091	21,430,138	6,654,198	1,038,017	(13,080,030)	1,695,910
Deposits Held for Others	(0)	(0)	49,433	51,613	0	(49,433)	(51,613)
Salaries, Taxes, & Benefits Payable	630,720	611,023	585,703	584,047	19,696	45,017	46,673
Total Current Liabilities	8,980,828	7,923,115	22,065,273	7,289,858	1,057,713	(13,084,446)	1,690,970
Long Term Liabilities							
Deferred Rent	361,489	357,664	323,237	309,736	3,825	38,252	51,753
Deferred Compensation Payable	472,262	468,265	409,369	362,428	3,997	62,893	109,833
Other Long-Term Liabilities	6,690	6,620	13,674	12,724	70	(6,984)	(6,034)
Total Long-Term Liabilities	840,440	832,548	746,279	684,887	7,892	94,161	155,553
Total Liabilities	9,821,268	8,755,663	22,811,553	7,974,745	1,065,605	(12,990,285)	1,846,523
Net Assets							
Temporarily Restricted Net Assets	252,728	252,720	462,692	462,625	8	(209,964)	(209,898)
Unrestricted Net Assets	92,993,814	91,155,867	45,218,858	73,474,490	1,837,947	47,774,956	19,519,324
Total Net Assets	93,246,541	91,408,587	45,681,549	73,937,115	1,837,954	47,564,992	19,309,426
Total Liabilities and Net Assets	103,067,809	100,164,249	68,493,102	81,911,860	2,903,560	34,574,707	21,155,949

BS-Acct-YTD-PY

Energy Trust of Oregon
Cash Flow Statement-Indirect Method
Monthly 2013

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>Year to Date</u>
Operating Activities:											
<i>Revenue less Expenses</i>	\$ 10,219,705	10,927,972	7,324,090	5,958,617	2,986,589	1,606,211	3,378,918	1,299,737	2,025,203	1,837,954	\$ 47,564,995
<i>Non-cash items:</i>											
Depreciation	27,270	27,452	28,129	27,410	27,977	27,977	27,977	27,977	27,224	27,633	\$ 277,025
Loss on disposal of assets											\$ -
Receivables	53,256	66,082	35	(5,470)	(0)	0	(0)	5,470	-	-	\$ 119,373
Interest Receivable	546	129	(496)	1,647	(518)	465	(590)	(787)	(701)	414	\$ 108
Advances to Vendors	705,543	733,344	(1,456,911)	410,950	709,011	(1,307,397)	560,532	771,490	(1,457,405)	411,934	\$ 81,091
Prepaid expenses and other costs	(559,565)	51,323	(82,665)	(46,877)	(9,774)	79,710	21,907	115,575	72,201	70,250	\$ (287,915)
Accounts payable	(14,214,238)	1,481,611	(2,237,661)	700,669	(1,049,325)	1,129,368	(575,269)	(2,068,026)	2,665,392	1,038,017	\$ (13,129,462)
Payroll and related accruals	16,657	39,359	5,770	21,984	25,790	9,262	(20,993)	(13,137)	(476)	23,694	\$ 107,910
Deferred rent and other	(271)	(1,101)	(1,829)	(1,217)	(1,318)	(2,289)	(5,128)	(1,689)	(13,681)	(102)	\$ (28,625)
Cash rec'd from / (used in) Operating Activities	(3,751,097)	13,326,171	3,578,462	7,067,713	2,688,432	1,543,307	3,387,353	136,609	3,317,756	3,409,795	\$ 34,704,500
Investing Activities:											
Purchase of Investments Held to Maturity (Acquisition)/Disposal of Capital Assets	-	(6,570)	(25,948)	-	(4,980,004)	(53)	(306)	(995,650)	(138)	(1,530)	\$ (5,977,681)
					(29,420)		-	-	(9,100)	(24,000)	\$ (95,038)
Cash rec'd from / (used in) Investing Activities	-	(6,570)	(25,948)	-	(5,009,424)	(53)	(306)	(995,650)	(9,238)	(25,530)	\$ (6,072,719)
Cash at beginning of Period	64,468,299	60,717,202	74,036,802	77,589,318	84,657,031	82,336,039	83,879,294	87,266,342	86,407,301	89,715,821	\$ 64,468,299
Increase/(Decrease) in Cash	(3,751,097)	13,319,602	3,552,516	7,067,713	(2,320,992)	1,543,255	3,387,048	(859,040)	3,308,520	3,384,261	\$ 28,631,784
Cash at end of period	60,717,202	74,036,802	77,589,318	84,657,031	82,336,039	83,879,294	87,266,342	86,407,301	89,715,821	93,100,082	\$ 93,100,083

Energy Trust of Oregon
Cash Flow Projection
January 2013 - December 2014

	Actual										2013 Forecast	
	January	February	March	April	May	June	July	August	September	October	November	December
Cash In:												
Public purpose and Incr funding	15,975,013	18,276,561	16,633,304	14,890,395	12,680,595	11,539,660	11,696,383	11,708,822	11,844,446	12,995,288	12,000,000	15,800,000
From other sources	53,256	66,082	35	(4,540)	(0)	0	(0)	5,470	-	12,500		
Investment Income	7,847	6,746	7,212	9,359	6,368	6,941	7,176	6,980	7,469	10,189	4,000	4,000
Total cash in	16,036,116	18,349,389	16,640,551	14,895,214	12,686,963	11,546,601	11,703,559	11,721,272	11,851,915	13,017,977	12,004,000	15,804,000
Cash Out:	19,787,213	5,029,788	13,088,038	7,827,499	15,007,955	10,003,347	8,316,510	12,580,315	8,543,395	9,633,713	12,700,000	26,500,000
Net cash flow for the month	(3,751,097)	13,319,601	3,552,516	7,067,718	(2,320,989)	1,543,254	3,387,048	(859,044)	3,308,520	3,384,264	(696,000)	(10,696,000)
Beginning Balance: Cash & MM	64,468,299	60,717,202	74,036,802	77,589,318	84,657,031	82,336,039	83,879,294	87,266,342	86,407,299	89,715,819	93,100,082	92,404,082
Ending cash & MM	60,717,202	74,036,802	77,589,318	84,657,031	82,336,039	83,879,294	87,266,342	86,407,299	89,715,819	93,100,082	92,404,082	81,708,082
Dedicated funds Adjustment	(10,600,000)	(10,600,000)	(7,900,000)	(8,100,000)	(8,400,000)	(13,300,000)	(13,300,000)	(13,300,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)
Committed Funds Adjustment	(37,200,000)	(40,000,000)	(33,900,000)	(46,300,000)	(45,800,000)	(41,200,000)	(39,900,000)	(39,600,000)	(45,200,000)	(45,200,000)	(43,900,000)	(36,400,000)
Cash Reserve	(6,200,000)	(6,200,000)	(6,200,000)	(6,200,000)	(6,200,000)	(6,200,000)	(6,200,000)	(6,200,000)	(5,000,000)	(5,000,000)	(5,000,000)	(5,000,000)
Ending Cash & MM, adj by Above	6,717,202	17,236,802	29,589,318	24,057,031	21,936,047	23,179,294	27,866,342	27,307,299	27,615,819	31,000,082	31,604,082	28,408,082
Escrow Cash Balance												
Beginning Balance	462,692	381,052	381,090	381,118	252,683	252,690	252,697	252,704	252,712	252,720	252,728	77,993
Net Escrow (Payments)/Funding	(81,682)		-	(128,457)							(174,743)	
Interest Paid on Escrow Balances	42	38	28	22	7	7	7	8	8	8	8	8
Ending Escrow Balance¹	381,052	381,090	381,118	252,683	252,690	252,697	252,704	252,712	252,720	252,728	77,993	78,001

¹Included in "Ending cash & MM" above

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

Energy Trust of Oregon
Cash Flow Projection
January 2013 - December 2014

2014 Round 1 Budget												
	January	February	March	April	May	June	July	August	September	October	November	December
Cash In:												
Public purpose and Incr funding	16,000,000	16,500,000	15,800,000	14,800,000	12,300,000	11,400,000	12,600,000	11,600,000	11,200,000	13,300,000	12,300,000	15,000,000
From other sources												
Investment Income	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Total cash in	16,007,000	16,507,000	15,807,000	14,807,000	12,307,000	11,407,000	12,607,000	11,607,000	11,207,000	13,307,000	12,307,000	15,007,000
Cash Out:	28,100,000	8,900,000	12,000,000	11,700,000	10,800,000	13,600,000	12,500,000	10,700,000	14,900,000	14,000,000	14,000,000	27,700,000
Net cash flow for the month	(12,093,000)	7,607,000	3,807,000	3,107,000	1,507,000	(2,193,000)	107,000	907,000	(3,693,000)	(693,000)	(1,693,000)	(12,693,000)
Beginning Balance: Cash & MM	81,708,082	69,615,082	77,222,082	81,029,082	84,136,082	85,643,082	83,450,082	83,557,082	84,464,082	80,771,082	80,078,082	78,385,082
Ending cash & MM	69,615,082	77,222,082	81,029,082	84,136,082	85,643,082	83,450,082	83,557,082	84,464,082	80,771,082	80,078,082	78,385,082	65,692,082
Dedicated funds Adjustment	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)	(11,900,000)
Committed Funds Adjustment	(38,800,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)	(41,300,000)
Cash Reserve	(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)
Ending Cash & MM, adj by Above	13,915,082	19,022,082	22,829,082	25,936,082	27,443,082	25,250,082	25,357,082	26,264,082	22,571,082	21,878,082	20,185,082	7,492,082
Escrow Cash Balance												
Beginning Balance	78,001	78,009	78,017	-	-	-	-	-	-	-	-	-
Net Escrow (Payments)/Funding			(78,017)									
Interest Paid on Escrow Balances	8	8	-	-	-	-	-	-	-	-	-	0
Ending Escrow Balance¹	78,009	78,017	-	0								

¹Included in "Ending cash & MM" above

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

Energy Trust of Oregon, Inc
INCOME STATEMENT - ACTUAL AND PRIOR YR COMPARISON
For the Ten Months Ending October 31, 2013
(Unaudited)

	October				YTD			
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %
REVENUES								
Public Purpose Funds-PGE	2,824,703	2,835,521	(10,818)	(0%)	28,976,966	30,559,877	(1,582,911)	(5%)
Public Purpose Funds-PacifiCorp	2,054,278	1,999,400	54,878	3%	21,732,357	21,299,356	433,001	2%
Public Purpose Funds-NW Natural	745,473	557,550	187,923	34%	19,674,025	14,964,932	4,709,093	31%
Public Purpose Funds-Cascade	100,688	40,132	60,556	151%	1,686,608	1,090,620	595,989	55%
Public Purpose Funds-Avista	0	0	0		0	(25,458)	25,458	100%
Total Public Purpose Funds	5,725,142	5,432,603	292,540	5%	72,069,956	67,889,326	4,180,631	6%
Incremental Funds - PGE	4,027,509	3,265,840	761,669	23%	41,482,401	33,319,930	8,162,471	24%
Incremental Funds - PacifiCorp	2,021,140	1,893,935	127,206	7%	21,669,171	19,975,614	1,693,556	8%
NW Natural - Industrial DSM	575,946	538,172	37,774	7%	1,727,838	1,076,344	651,494	61%
NW Natural - Washington	645,551	630,957	14,594	2%	1,291,102	1,261,914	29,188	2%
Consumer Owned Electric	0	11,951	(11,951)	(100%)	0	15,466	(15,466)	(100%)
Contributions	12,500	1,050	11,450	1090%	13,430	30,490	(17,060)	(56%)
Revenue from Investments	9,776	9,064	712	8%	76,181	118,578	(42,397)	(36%)
TOTAL REVENUE	13,017,564	11,783,571	1,233,993	10%	138,330,079	123,690,917	14,639,162	12%
EXPENSES								
Program Subcontracts	3,973,444	4,433,446	460,002	10%	37,267,913	37,304,592	36,680	0%
Incentives	5,660,900	5,060,261	(600,638)	(12%)	39,238,963	51,584,120	12,345,157	24%
Salaries and Related Expenses	819,145	804,456	(14,689)	(2%)	8,042,886	7,394,692	(648,194)	(9%)
Professional Services	528,335	581,244	52,908	9%	4,017,701	5,536,135	1,518,434	27%
Supplies	2,303	6,574	4,271	65%	25,068	57,919	32,851	57%
Telephone	4,741	4,088	(653)	(16%)	44,436	38,723	(5,713)	(15%)
Postage and Shipping Expenses	468	548	79	14%	8,185	9,975	1,790	18%
Occupancy Expenses	55,119	51,958	(3,161)	(6%)	554,095	521,474	(32,620)	(6%)
Noncapitalized Equip. & Depr.	45,946	64,828	18,882	29%	528,821	1,248,727	719,906	58%
Call Center	35,341	15,357	(19,984)	(130%)	510,238	177,985	(332,253)	(187%)
Printing and Publications	6,391	4,554	(1,836)	(40%)	94,692	106,116	11,424	11%
Travel	12,170	13,063	893	7%	117,247	97,846	(19,401)	(20%)
Conference, Training & Mtng Exp	12,020	8,071	(3,950)	(49%)	107,527	111,082	3,556	3%
Interest Expense and Bank Fees	0	0	0		5,443	5,000	(443)	(9%)
Insurance	8,622	7,800	(822)	(11%)	82,932	77,026	(5,905)	(8%)
Miscellaneous Expenses	0	24,207	24,207	100%	1,090	31,610	30,520	97%
Dues, Licenses and Fees	14,666	14,944	278	2%	117,850	115,995	(1,854)	(2%)
TOTAL EXPENSES	11,179,610	11,095,397	(84,213)	(1%)	90,765,087	104,419,019	13,653,933	13%
TOTAL REVENUE LESS EXPENSES	1,837,954	688,175	1,149,780	167%	47,564,992	19,271,898	28,293,094	147%

Energy Trust of Oregon, Inc
INCOME STATEMENT - ACTUAL AND YTD BUDGET COMPARISON
For the Ten Months Ending October 31, 2013
(Unaudited)

	October				YTD			
	Actual	Budget	Budget Variance	Variance %	Actual	Budget	Budget Variance	Variance %
REVENUES								
Public Purpose Funds-PGE	2,824,703	2,668,867	155,836	6%	28,976,966	28,763,097	213,869	1%
Public Purpose Funds-PacifiCorp	2,054,278	1,960,923	93,356	5%	21,732,357	20,860,487	871,870	4%
Public Purpose Funds-NW Natural	745,473	707,648	37,825	5%	19,674,025	18,993,641	680,384	4%
Public Purpose Funds-Cascade	100,688	96,003	4,685	5%	1,686,608	2,608,965	(922,356)	(35%)
Total Public Purpose Funds	5,725,142	5,433,441	291,701	5%	72,069,956	71,226,189	843,767	1%
Incremental Funds - PGE	4,027,509	4,051,042	(23,533)	(1%)	41,482,401	41,331,003	151,397	0%
Incremental Funds - PacifiCorp	2,021,140	1,947,389	73,752	4%	21,669,171	21,108,652	560,518	3%
NW Natural - Industrial DSM	575,946	797,028	(221,082)	(28%)	1,727,838	1,594,055	133,783	8%
NW Natural - Washington	645,551	645,551	0	0%	1,291,102	1,291,102	0	0%
Contributions	12,500	0	12,500		13,430	0	13,430	
Revenue from Investments	9,776	10,000	(224)	(2%)	76,181	100,000	(23,819)	(24%)
TOTAL REVENUE	13,017,564	12,884,451	133,114	1%	138,330,079	136,651,001	1,679,077	1%
EXPENSES								
Program Subcontracts	3,973,444	4,182,345	208,901	5%	37,267,913	39,261,474	1,993,561	5%
Incentives	5,660,900	7,684,979	2,024,079	26%	39,238,963	63,424,946	24,185,984	38%
Salaries and Related Expenses	819,145	848,194	29,050	3%	8,042,886	8,928,908	886,022	10%
Professional Services	528,335	753,362	225,027	30%	4,017,701	8,666,228	4,648,528	54%
Supplies	2,303	10,354	8,051	78%	25,068	103,537	78,468	76%
Telephone	4,741	4,453	(288)	(6%)	44,436	45,640	1,204	3%
Postage and Shipping Expenses	468	833	365	44%	8,185	8,333	148	2%
Occupancy Expenses	55,119	58,434	3,315	6%	554,095	584,335	30,241	5%
Noncapitalized Equip. & Depr.	45,946	74,443	28,497	38%	528,821	765,371	236,549	31%
Call Center	35,341	44,917	9,576	21%	510,238	449,167	(61,072)	(14%)
Printing and Publications	6,391	17,112	10,722	63%	94,692	171,125	76,433	45%
Travel	12,170	16,682	4,512	27%	117,247	179,470	62,223	35%
Conference, Training & Mtng Exp	12,020	39,507	27,487	70%	107,527	342,800	235,273	69%
Interest Expense and Bank Fees	0	625	625	100%	5,443	6,250	807	13%
Insurance	8,622	9,167	545	6%	82,932	91,667	8,735	10%
Miscellaneous Expenses	0	225	225	100%	1,090	2,250	1,160	52%
Dues, Licenses and Fees	14,666	30,951	16,285	53%	117,850	142,446	24,596	17%
TOTAL EXPENSES	11,179,610	13,776,583	2,596,974	19%	90,765,087	123,173,946	32,408,859	26%
TOTAL REVENUE LESS EXPENSES	1,837,954	(892,133)	2,730,087	306%	47,564,992	13,477,055	34,087,937	253%

Energy Trust of Oregon, Inc
Statement of Functional Expenses
For the Ten Months Ending October 31, 2013

	Energy Efficiency	Renewable Energy	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	YTD Total	Budget Total	Variance	% Var
Program Expenses										
Incentives/ Program Management & Deliver	71,772,944	4,733,931	76,506,875				76,506,875	102,686,420	26,179,545	25.5%
Payroll and Related Expenses	2,333,969	692,141	3,026,110	1,594,346	730,189	2,324,535	5,350,645	5,601,123	250,478	4.5%
Outsourced Services	2,714,345	330,316	3,044,661	122,009	425,136	547,145	3,591,806	7,216,062	3,624,256	50.2%
Planning and Evaluation	1,578,052	71,250	1,649,302				1,649,302	2,242,400	593,098	26.4%
Customer Service Management	854,527	18,593	873,120				873,120	865,424	(7,696)	-0.9%
Trade Allies Network	289,666	13,110	302,776				302,776	367,346	64,570	17.6%
Total Program Expenses	79,543,504	5,859,341	85,402,845	1,716,355	1,155,325	2,871,680	88,274,525	118,978,775	30,704,250	25.8%
Program Support Costs										
Supplies	6,374	1,827	8,201	7,716	2,597	10,313	18,514	65,368	46,854	71.7%
Postage and Shipping Expenses	3,053	711	3,764	1,353	678	2,031	5,795	6,544	749	11.4%
Telephone	2,640	1,239	3,879	1,463	688	2,151	6,030	5,580	(450)	-8.1%
Printing and Publications	81,188	3,727	84,915	630	5,214	5,844	90,759	164,648	73,889	44.9%
Occupancy Expenses	170,213	53,186	223,399	100,096	50,707	150,803	374,202	373,999	(203)	-0.1%
Insurance	25,582	7,994	33,576	15,044	7,621	22,665	56,241	58,872	2,631	4.5%
Equipment	17,081	27,019	44,100	4,632	2,346	6,978	51,078	19,941	(31,137)	-156.1%
Travel	39,132	15,145	54,277	17,422	3,398	20,820	75,097	133,553	58,456	43.8%
Meetings, Trainings & Conferences	24,105	10,429	34,534	21,151	4,490	25,641	60,175	242,550	182,375	75.2%
Interest Expense and Bank Fees		100	100	5,343		5,343	5,443	6,250	807	12.9%
Depreciation & Amortization	41,951	15,040	56,991	24,670	12,497	37,167	94,158	86,070	(8,088)	-9.4%
Dues, Licenses and Fees	61,041	16,239	77,280	3,173	2,682	5,855	83,135	73,308	(9,827)	-13.4%
Miscellaneous Expenses	1,072		1,072	18		18	1,090	1,504	414	27.5%
IT Services	1,108,291	130,463	1,238,754	221,036	109,054	330,090	1,568,844	2,956,982	1,388,138	46.9%
Total Program Support Costs	1,581,723	283,119	1,864,842	423,746	201,973	625,719	2,490,561	4,195,170	1,704,609	40.6%
TOTAL EXPENSES	81,125,227	6,142,460	87,267,687	2,140,101	1,357,299	3,497,400	90,765,087	123,173,946	32,408,859	26.3%

OPUC measure vs. 9%

3.88%

Exp-Acct-YTD-002

Energy Trust of Oregon, Inc
Year to Date by Program/Service Territory
For the Ten Months Ending October 31, 2013
(Unaudited)

	ENERGY EFFICIENCY										
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Oregon Total	Clark PUD WA	NWN WA	WA Total	ETO Total
REVENUES											
Public Purpose Funding	\$22,392,631	\$16,895,872	\$39,288,503		\$19,674,025	\$1,686,608	\$60,649,136				\$60,649,136
Incremental Funding	41,482,401	21,669,171	63,151,572	1,727,838			64,879,410		1,291,102	1,291,102	66,170,512
Contributions											
Revenue from Investments											
TOTAL PROGRAM REVENUE	63,875,032	38,565,043	102,440,075	1,727,838	19,674,025	1,686,608	125,528,546		1,291,102	1,291,102	126,819,648
EXPENSES											
Program Management (Note 3)	2,008,529	1,287,854	3,296,383	102,897	798,422	63,578	4,261,280	1,698	151,466	153,164	4,414,444
Program Delivery	16,041,459	10,826,244	26,867,703	419,110	4,206,165	343,460	31,836,438	3,734	262,782	266,516	32,102,954
Incentives	17,644,278	9,927,687	27,571,965	1,000,891	5,371,123	418,368	34,362,347	12,380	261,101	273,481	34,635,828
Program Eval & Planning Svcs.	1,295,783	827,103	2,122,887	37,868	478,653	33,839	2,673,247	731	27,302	28,033	2,701,280
Program Marketing/Outreach	1,781,639	1,194,090	2,975,729	18,749	927,284	59,078	3,980,840	0	39,421	39,421	4,020,261
Program Quality Assurance	25,212	27,123	52,335	0	32,648	1,294	86,277	0	0	0	86,277
Outsourced Services	191,077	139,103	330,180	2,842	99,981	5,269	438,272	0	0	0	438,272
Trade Allies & Cust. Svc. Mgmt.	293,813	229,054	522,867	3,286	218,099	11,945	756,197	497	20,287	20,784	776,981
IT Services	488,029	326,200	814,229	12,795	235,938	14,955	1,077,917	685	29,689	30,374	1,108,291
Other Program Expenses	327,257	252,334	579,591	11,354	214,941	10,867	816,754	505	23,383	23,888	840,642
TOTAL PROGRAM EXPENSES	40,097,076	25,036,793	65,133,869	1,609,792	12,583,255	962,653	80,289,569	20,230	815,431	835,661	81,125,227
ADMINISTRATIVE COSTS											
Management & General (Notes 1 & 2)	983,317	613,988	1,597,305	39,478	308,584	23,607	1,968,974	496	19,997	20,493	1,989,467
Communications & Customer Svc (Notes 1 & 2)	623,641	389,405	1,013,046	25,038	195,711	14,972	1,248,767	315	12,683	12,998	1,261,765
Total Administrative Costs	1,606,959	1,003,392	2,610,351	64,515	504,295	38,580	3,217,741	811	32,680	33,491	3,251,232
TOTAL PROG & ADMIN EXPENSES	41,704,036	26,040,185	67,744,221	1,674,306	13,087,549	1,001,229	83,507,305	21,041	848,108	869,149	84,376,454
TOTAL REVENUE LESS EXPENSES	22,170,996	12,524,858	34,695,854	53,532	6,586,476	685,379	42,021,241	(21,041)	442,994	421,953	42,443,194
NET ASSETS - RESERVES											
Cumulative Carryover at 12/31/12	12,168,475	3,036,549	15,205,024	1,099,798	3,013,149	(392,281)	18,925,690	50,734	353,174	403,908	19,329,598
Change in net assets this year	22,170,996	12,524,858	34,695,854	53,532	6,586,476	685,379	42,021,241	(21,041)	442,994	421,953	42,443,194
Interest Attributed						392,281	392,281				392,281
Ending Net Assets - Reserves	34,339,471	15,561,407	49,900,878	1,153,330	9,599,625	685,379	61,339,212	29,693	796,168	825,861	62,165,073
Ending Reserve by Category											
Program Reserves (Efficiency and Renewables)	34,339,471	15,561,407	49,900,878	1,153,330	9,599,625	293,098	60,946,931	29,693	796,168	825,861	61,772,792
Interest Attributed						392,281	392,281				392,281
Organization Contingency Pool											
Emergency Contingency Pool											
TOTAL NET ASSETS CUMULATIVE	34,339,471	15,561,407	49,900,878	1,153,330	9,599,625	685,379	61,339,212	29,693	796,168	825,861	62,165,073

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

Note 2) Administrative costs are allocated for management reporting only. GAAP for Not for Profit organizations does not allow allocation of administrative costs to program expenses.

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

Energy Trust of Oregon, Inc
Year to Date by Program/Service Territory
For the Ten Months Ending October 31, 2013
(Unaudited)

	RENEWABLE ENERGY			Other	TOTAL	Approved budget	Change	% Change
	PGE	PacifiCorp	Total		All Programs			
REVENUES								
Public Purpose Funding	\$6,584,335	\$4,836,485	\$11,420,820		\$72,069,956	\$71,226,189	\$843,767	1.2%
Incremental Funding					66,170,512	65,324,812	845,700	1.3%
Contributions				13,430	13,430		13,430	
Revenue from Investments				76,181	76,181	100,000	(23,819)	-23.8%
TOTAL PROGRAM REVENUE	6,584,335	4,836,485	11,420,820	89,611	138,330,079	136,651,001	1,679,079	1.2%
EXPENSES								
Program Management (Note 3)	280,789	411,353	692,142		5,106,586	5,083,525	(23,061)	-0.5%
Program Delivery	64,414	66,380	130,794		32,233,748	34,522,507	2,288,759	6.6%
Incentives	2,658,505	1,944,633	4,603,138		39,238,966	63,424,948	24,185,982	38.1%
Program Eval & Planning Svcs.	31,217	40,033	71,250		2,772,530	4,523,299	1,750,769	38.7%
Program Marketing/Outreach	60,755	35,519	96,274		4,116,535	4,304,415	187,880	4.4%
Program Quality Assurance	1,621	0	1,621		87,898	217,500	129,602	59.6%
Outsourced Services	112,536	119,886	232,422		670,694	2,064,178	1,393,484	67.5%
Trade Allies & Cust. Svc. Mgmt.	19,664	11,998	31,662		808,643	900,269	91,626	10.2%
IT Services	58,126	72,337	130,463		1,238,754	2,335,191	1,096,437	47.0%
Other Program Expenses	77,107	75,592	152,699		993,341	1,034,631	41,290	4.0%
TOTAL PROGRAM EXPENSES	3,364,735	2,777,730	6,142,460		87,267,687	118,410,463	31,142,768	26.3%
ADMINISTRATIVE COSTS								
Management & General (Notes 1 & 2)	79,592	71,042	150,634		2,140,101	2,926,467	786,366	26.9%
Communications & Customer Svc (Notes 1 & 2)	50,479	45,057	95,536		1,357,299	1,837,019	479,718	26.1%
Total Administrative Costs	130,072	116,098	246,170		3,497,400	4,763,486	1,266,084	26.6%
TOTAL PROG & ADMIN EXPENSES	3,494,805	2,893,825	6,388,630		90,765,087	123,173,946	32,408,859	26.3%
TOTAL REVENUE LESS EXPENSES	3,089,530	1,942,660	5,032,190	89,611	47,564,992	13,477,055	34,087,937	252.9%
NET ASSETS - RESERVES								
Cumulative Carryover at 12/31/12	8,796,384	9,696,615	18,492,999	7,858,953	45,681,550	37,070,557	8,610,993	23.2%
Change in net assets this year	3,089,530	1,942,660	5,032,190	89,611	47,564,992	13,477,055	34,087,937	252.9%
Interest Attributed				(392,281)				
Ending Net Assets - Reserves	11,885,914	11,639,275	23,525,189	7,556,283	93,246,541	50,547,612	42,698,929	84.5%
Ending Reserve by Category								
Program Reserves (Efficiency and Renewables)	11,885,914	11,639,275	23,525,189		85,297,981	50,547,612	34,750,369	
Interest Attributed					392,281		392,281	
Organization Contingency Pool				2,556,283	2,556,283		2,556,283	
Emergency Contingency Pool				5,000,000	5,000,000		5,000,000	
TOTAL NET ASSETS CUMULATIVE	11,885,914	11,639,275	23,525,189	7,556,283	93,246,541	50,547,612	42,698,929	84.5%

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

Note 2) Administrative costs are allocated for management reporting only. GAAP for Not for Profit organizations does not allow allocation of administrative costs to program expenses.

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

Energy Trust of Oregon, Inc
Program Expense by Service Territory
For the Ten Months Ending October 31, 2013
(Unaudited)

	PGE	Pacific Power	Subtotal Elec.	NWN Industrial	NW Natural Gas	Cascade	Subtotal Gas	Oregon Total	Clark PUD WA	NWN WA	Total WA	ETO Total	YTD Budget	Variance	% Var
Energy Efficiency															
Commercial															
Existing Buildings	10,960,000	6,153,986	17,113,986	263,053	2,852,032	265,849	3,380,934	20,494,920	21,041	344,317	365,358	20,860,278	30,735,059	9,874,781	32.1%
New Buildings	5,892,084	2,739,967	8,632,051	59,402	714,071	92,779	866,252	9,498,303				9,498,303	14,073,285	4,574,982	32.5%
NEEA	1,337,671	1,009,120	2,346,791					2,346,791				2,346,791	2,493,180	146,389	5.9%
Total Commercial	18,189,755	9,903,073	28,092,828	322,455	3,566,103	358,628	4,247,186	32,340,014	21,041	344,317	365,358	32,705,372	47,301,524	14,596,152	30.9%
Industrial															
Production Efficiency	9,376,910	5,303,224	14,680,134	1,351,851	445,512	83,103	1,880,466	16,560,600				16,560,600	19,956,186	3,395,586	17.0%
NEEA	622,201	469,379	1,091,580					1,091,580				1,091,580	1,252,812	161,232	12.9%
Total Industrial	9,999,111	5,772,603	15,771,714	1,351,851	445,512	83,103	1,880,466	17,652,180				17,652,180	21,208,998	3,556,818	16.8%
Residential															
Existing Homes	4,633,829	4,985,138	9,618,967		6,000,034	237,768	6,237,802	15,856,769		300,707	300,707	16,157,476	21,576,633	5,419,157	25.1%
New Homes/Products	6,902,394	3,886,482	10,788,876		3,075,900	321,730	3,397,630	14,186,506		203,084	203,084	14,389,590	17,862,984	3,473,394	19.4%
NEEA	1,978,947	1,492,889	3,471,836					3,471,836				3,471,836	3,850,033	378,197	9.8%
Total Residential	13,515,170	10,364,509	23,879,679		9,075,934	559,498	9,635,432	33,515,111		503,791	503,791	34,018,902	43,289,650	9,270,748	21.4%
Energy Efficiency Program Cost	41,704,036	26,040,185	67,744,221	1,674,306	13,087,549	1,001,229	15,763,084	83,507,305	21,041	848,108	869,149	84,376,454	111,800,172	27,423,715	24.5%
Renewables															
Biopower	627,570	776,920	1,404,490					1,404,490				1,404,490	1,821,110	416,620	22.9%
Solar Electric (Photovoltaic)	2,590,041	1,472,434	4,062,475					4,062,475				4,062,475	6,467,512	2,405,037	37.2%
Other Renewable	277,194	644,471	921,665					921,665				921,665	3,085,152	2,163,487	70.1%
Renewables Program Costs	3,494,805	2,893,825	6,388,630					6,388,630				6,388,630	11,373,774	4,985,144	43.8%
Cost Grand Total	45,198,841	28,934,010	74,132,851	1,674,306	13,087,549	1,001,229	15,763,084	89,895,935	21,041	848,108	869,149	90,765,087	123,173,946	32,408,859	26.3%

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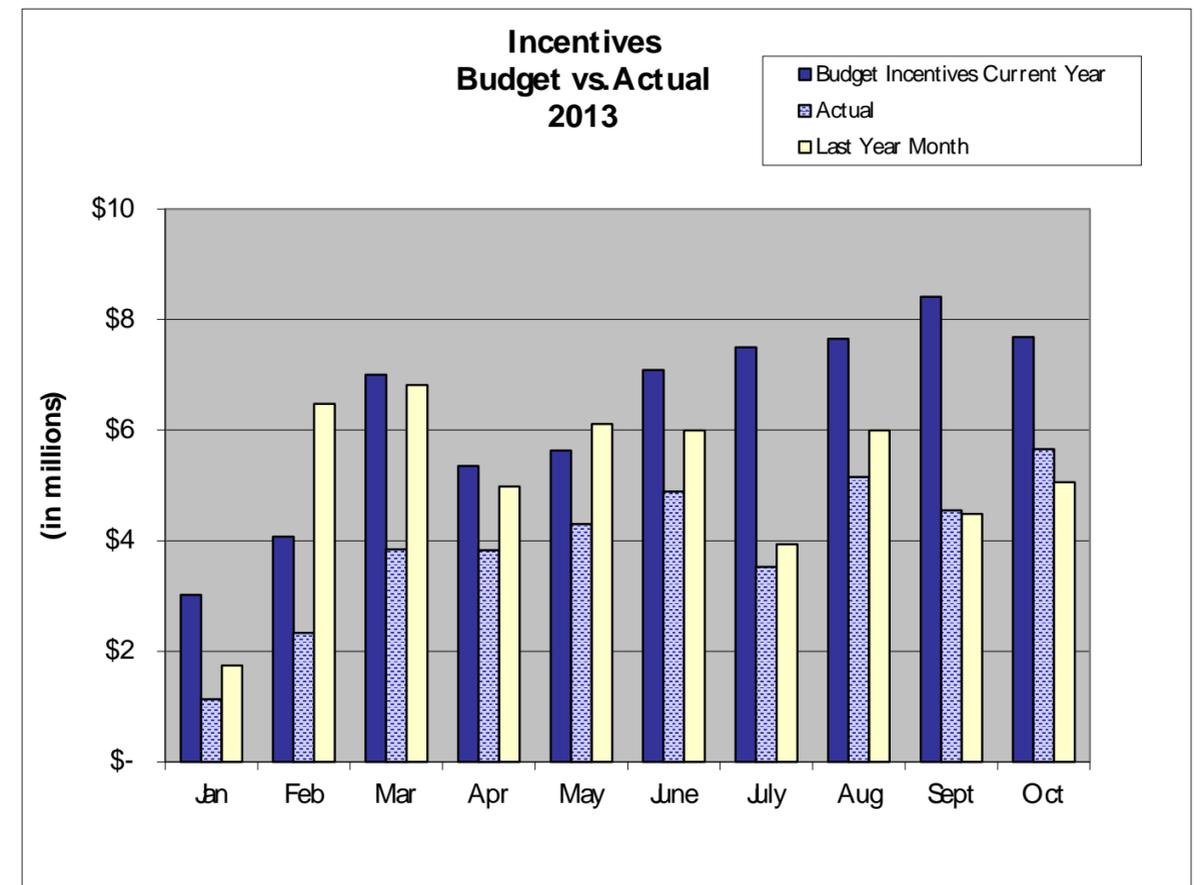
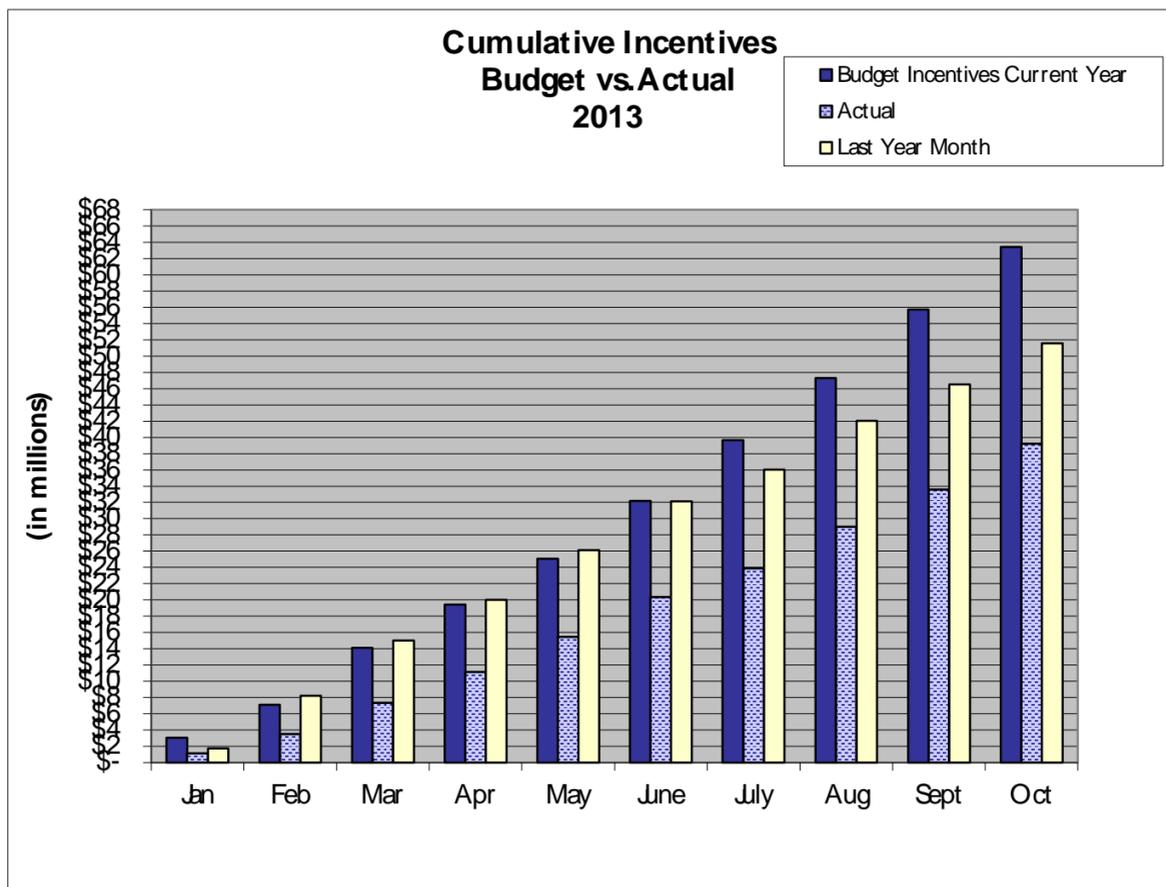
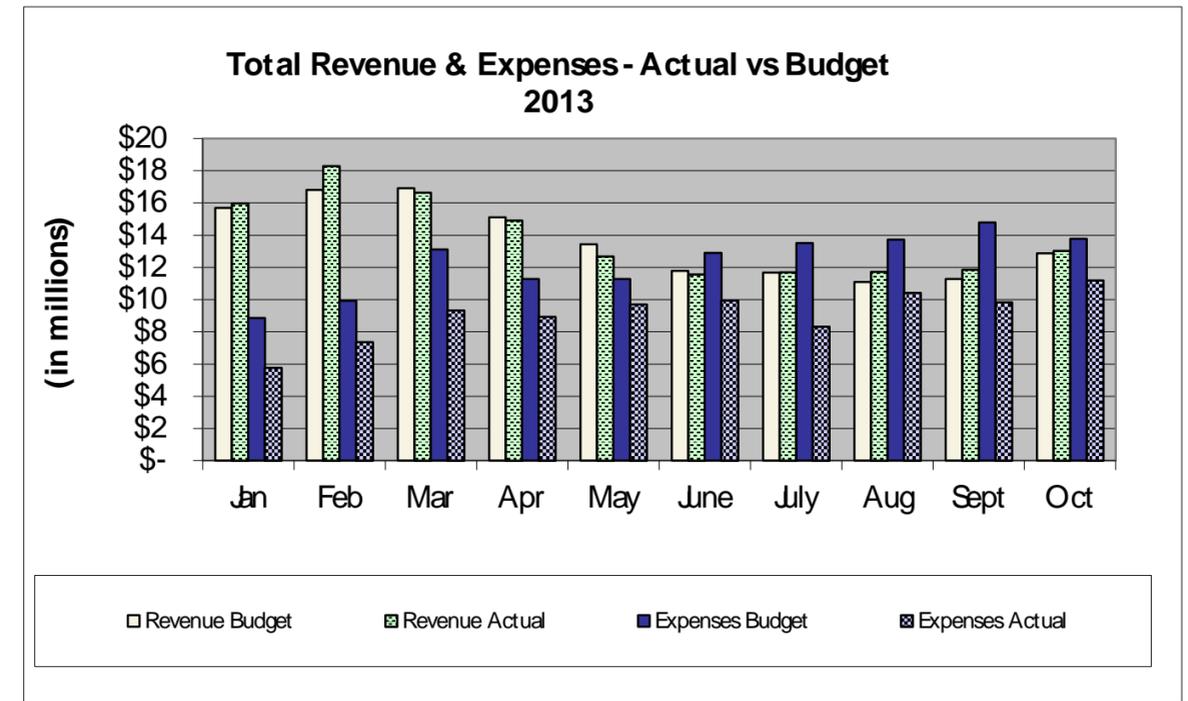
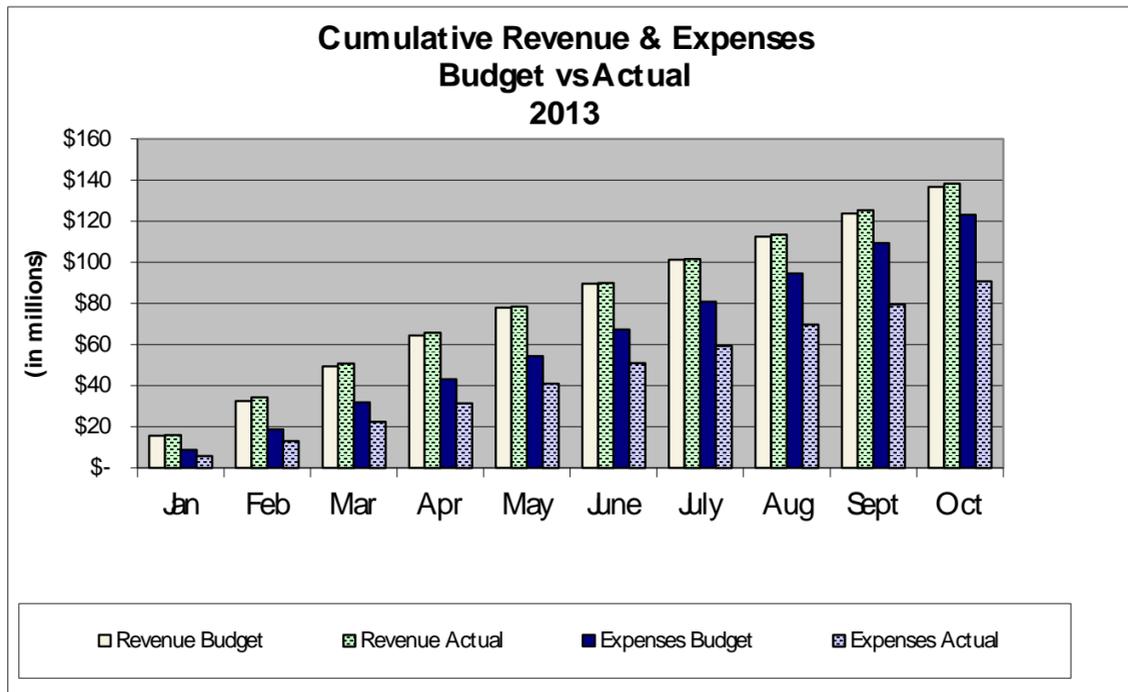
Energy Trust of Oregon, Inc.
ADMINISTRATIVE EXPENSES
For the Month and Year to Date Ended October 31, 2013
(Unaudited)

EXPENSES	MANAGEMENT & GENERAL							COMMUNICATIONS & CUSTOMER SERVICE						
	MONTHLY ACTUAL	QUARTERLY BUDGET	QUARTER REMAINING	ACTUAL	BUDGET	YTD VARIANCE	% VAR	MONTHLY ACTUAL	QUARTERLY BUDGET	QUARTER REMAINING	ACTUAL	BUDGET	YTD VARIANCE	% VAR
Outsourced Services	\$11,173	\$79,546	\$68,373	\$116,945	\$389,320	\$272,375	70.0%	\$29,232	\$232,500	\$203,268	\$425,136	\$775,000	\$349,864	45.1%
Legal Services	2,063	22,500	20,437	5,065	75,000	69,936	93.2%							
Salaries and Related Expenses	151,422	485,249	333,827	1,594,346	1,672,334	77,989	4.7%	77,956	208,331	130,375	730,189	693,983	(36,206)	-5.2%
Supplies	345	1,575	1,230	4,351	5,250	899	17.1%		250	250	892	833	(58)	-7.0%
Telephone		350	350	352	1,527	1,174	76.9%	26		(26)	126		(126)	
Postage and Shipping Expenses				14		(14)			1,000	1,000		3,333	3,333	100.0%
Noncapitalized Equipment									250	250		833	833	100.0%
Printing and Publications	20	150	130	120	500	380	76.0%	347	13,750	13,403	4,956	45,833	40,877	89.2%
Travel	2,169	11,833	9,665	17,422	39,445	22,023	55.8%	1,506	1,750	244	3,398	5,833	2,435	41.7%
Conference, Training & Mtngs	577	56,147	55,570	21,124	150,383	129,259	86.0%	333	7,125	6,793	4,477	23,750	19,273	81.1%
Interest Expense and Bank Fees		1,875	1,875	5,343	6,250	907	14.5%							
Miscellaneous Expenses		50	50	18	167	149	89.2%							
Dues, Licenses and Fees	149	3,200	3,051	3,173	6,800	3,627	53.3%	268	500	232	2,682	1,667	(1,016)	-60.9%
Shared Allocation (Note 1)	15,560	48,897	33,338	150,792	163,161	12,369	7.6%	8,132	24,123	15,991	76,388	80,494	4,106	5.1%
IT Service Allocation (Note 2)	27,757	92,864	65,107	221,036	416,332	195,296	46.9%	13,694	45,828	32,133	109,054	205,459	96,405	46.9%
TOTAL EXPENSES	211,235	804,237	593,003	2,140,101	2,926,468	786,367	26.9%	131,495	535,407	403,912	1,357,299	1,837,019	479,721	26.1%

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

Administrative Expenses 1st Month of Quarter

Exp-Prog-YTD-001



For contracts with costs
through: 10/31/2013

Contractor	Description	*City	Est Cost	Actual TTD	Remaining	Start	End
Administration							
Administration Total:			6,881,903	2,086,133	4,795,770		
Communications & Outreach							
Communications & Outreach Total:			2,772,593	2,149,856	622,737		
Energy Efficiency Programs							
Northwest Energy Efficiency Alliance	Regional Energy Eff Initiative	Portland	39,138,680	27,532,831	11,605,849	1/1/10	7/1/15
ICF Resources, LLC	PMC BE 2013	Fairfax	7,745,851	5,949,379	1,796,472	1/1/13	12/31/13
Fluid Market Strategies LLC	2013 HES PMC	Portland	7,416,843	5,929,685	1,487,158	1/1/13	12/31/13
Portland Energy Conservation, Inc.	PMC NHP 2013	Portland	6,315,684	4,778,158	1,537,526	1/1/13	12/31/13
Portland Energy Conservation, Inc.	2013 NBE PMC	Portland	4,736,060	3,364,883	1,371,177	1/1/13	12/31/13
Intel Corporation	Intel D1X Megaproject	Hillsboro	4,000,000	2,540,546	1,459,454	11/15/12	12/31/14
Lockheed Martin Services, Inc.	2013 MF PMC	Cherry Hill	2,816,996	2,236,124	580,872	1/1/13	12/31/13
OPOWER, Inc.	OPOWER Agreement	Arlington	2,092,200	2,084,920	7,280	3/2/10	2/28/14
Oregon State University	CHP Project - OSU	Corvallis	2,024,263	1,920,000	104,263	12/20/10	1/31/16
Portland General Electric	PDC - PE 2013		1,936,000	1,570,655	365,345	1/1/13	12/31/13
Cascade Energy, Inc.	PDC - PE 2013	Walla Walla	1,775,055	1,463,367	311,688	1/1/13	12/31/13
RHT Energy Solutions	PDC - PE 2013	Medford	1,293,651	1,049,477	244,174	1/1/13	12/31/13
Cascade Energy, Inc.	PDC - PE 2013 Small Industrial	Walla Walla	1,147,500	998,329	149,171	1/1/13	12/31/13
Evergreen Consulting Group, LLC	PE Lighting PDC 2013	Tigard	1,071,000	858,497	212,503	1/1/13	12/31/13
Northwest Power & Conservation Council	Annual Work Plan		874,652	550,195	324,457	3/20/12	12/31/14
NEXANT, INC.	PDC - PE 2013	San Francisco	825,818	550,765	275,053	1/1/13	12/31/13
Ecova Inc	Plug Load Solutions Funding	Spokane	499,950	358,847	141,103	1/1/13	12/31/13
Evoworx Inc.	EnergySavvy Online Audit Tool	Seattle	472,500	301,146	171,354	1/1/12	12/31/13
Clean Energy Works Oregon Inc	Clean Energy Works	Portland	448,500	300,000	148,500	1/1/10	7/31/13
OPOWER, Inc.	OPower Personal Energy Reports	Arlington	425,850	199,456	226,394	8/1/13	7/31/15
Navigant Consulting Inc	Analytical Model & Study	Boulder	412,052	52,410	359,642	8/12/13	4/30/14
The Cadmus Group Inc.	NB Impact Eval 2010-2011	Watertown	295,000	294,999	1	1/13/12	12/31/13
Fluid Market Strategies LLC	2013 HES WA PMC	Portland	265,000	223,387	41,613	1/1/13	12/31/13
Energy 350 Inc	PDC Transition Agreement	Portland	200,000	90,664	109,336	9/1/13	12/31/13
ICF Resources, LLC	NWN WA BE 2013	Fairfax	191,538	151,066	40,472	1/1/13	12/31/13
Home Performance Contractors Guild of Oregon	Existing Homes Program Support	Portland	155,000	121,311	33,689	1/1/12	3/31/14
D&R International LTD	Market Lift Program	Silver Spring	150,000	0	150,000	1/1/13	9/30/13
ICF Resources, LLC	NWN DSM Initiative 2013	Fairfax	110,000	98,673	11,327	1/1/13	12/31/13
J. Hruska Global	Quality Assurance Services	Columbia City	100,000	86,277	13,723	1/1/13	12/31/14
Vitesse LLC	Vitesse Data Center	Menlo Park	100,000	0	100,000	10/18/12	10/30/13
Research Into Action, Inc.	Existing Homes Process Eval	Portland	94,000	15,241	78,760	9/9/13	2/28/14
Ecotope, Inc.	Gas Hearth Study	Seattle	90,000	0	90,000	10/10/13	9/1/15
Pollinate Inc	Web Application Development	Portland	75,500	66,444	9,056	1/1/12	12/31/13
Evergreen Economics	New Homes Process Eval - 2013	Portland	70,000	42,888	27,112	6/24/13	3/31/14
Pivotal Energy Solutions LLC	New Homes Database	Gilbert	60,000	24,000	36,000	10/1/13	3/1/14

*The city indicated is the contractor's mailing address, not necessarily the location where work was performed.

For contracts with costs
through: 10/31/2013

Contractor	Description	*City	Est Cost	Actual TTD	Remaining	Start	End
Portland Energy Conservation, Inc.	EE Consultant Services	Portland	54,170	50,758	3,412	6/1/11	12/31/13
Research Into Action, Inc.	Products Process Evaluation	Portland	52,800	35,795	17,006	7/1/13	4/1/14
Research Into Action, Inc.	BE Process Eval - 2013	Portland	51,000	8,080	42,920	10/1/13	2/28/14
ICF Resources, LLC	OSU CHP Performance Monitoring	Fairfax	50,000	2,385	47,615	7/1/13	6/30/14
The Cadmus Group Inc.	Commercial Op Pilot Eval	Watertown	50,000	41,640	8,361	7/1/11	12/31/13
PWP, Inc.	Comm SEM Initiative Evaluation	Gaithersburg	45,000	35,208	9,792	7/1/12	6/30/14
Portland General Electric	Utility Data Payment - OPOWER	Portland	40,000	19,928	20,072	8/1/10	2/28/14
PWP, Inc.	SEM Intro Pilot Evaluation	Gaithersburg	40,000	0	40,000	10/28/13	10/2/15
NW Natural	Info Transfer & Reimbursement	Portland	35,000	21,263	13,737	7/12/10	2/28/14
The Cadmus Group Inc.	Lighting Pilot Evaluation	Watertown	35,000	21,163	13,837	4/1/12	12/31/13
WegoWise Inc	Wegowise Benchmarking License	Boston	35,000	35,000	0	5/14/12	5/14/14
Navigant Consulting Inc	CORE Improvement Pilot Eval	Boulder	34,000	21,238	12,762	9/1/12	8/30/14
Energy Center of Wisconsin	Billing Analysis Review	Madison	30,000	0	30,000	11/1/13	12/31/14
MetaResource Group	Data Center Evaluation	Portland	30,000	2,246	27,754	5/1/13	12/31/14
Seattle City Light	Lighting Design Lab	Seattle	30,000	30,000	0	1/1/13	12/31/13
The Cadmus Group Inc.	Pay For Performance Pilot Eval	Watertown	30,000	0	30,000	9/25/13	12/31/14
Pivotal Energy Solutions LLC	License Agreement	Gilbert	29,500	0	29,500	3/1/14	12/31/14
Stellar Processes, Inc.	BE Measure Evaluation	Portland	25,250	19,125	6,125	10/24/12	10/24/14
Northwest Food Processors Association	NW Industrial EE Summit 2014	Portland	25,000	0	25,000	7/16/13	1/15/14
Triple Point Energy Inc.	SEM Workshops	Portland	24,240	9,114	15,126	4/29/13	1/15/14
Forrest Marketing	Commerical Financing Study	Portland	24,000	12,600	11,400	8/30/13	3/1/14
Issues & Answers Network Inc	Residential Awareness 2014	Virginia Beach	20,730	0	20,730	11/1/13	3/31/14
Michael Blasnick & Associated	Billing Analysis Process	Boston	20,000	3,938	16,063	1/1/10	12/31/13
Oregon Assoc. of Clean Water Agencies	SEM Training - Round III		19,920	8,000	11,920	5/23/13	6/15/14
Northwest Food Processors Association	NW Industrial EE Summit 2013	Portland	17,500	17,500	0	12/10/12	12/31/13
Lane Community College, NEEI Science Division	2013 Scholarship Grant	Eugene	16,600	7,600	9,000	1/1/13	12/31/13
Consortium for Energy Efficiency	Membership Dues - 2013		15,551	15,551	0	1/1/13	12/31/13
Oregon Department of Energy	Oregon Leaders Project	Salem	15,000	15,000	0	9/19/11	1/31/14
G. Curtis Consulting	Residential Windows Market	Salem	14,750	4,900	9,850	9/15/13	1/31/14
MetaResource Group	Energy Performance Score Eval	Portland	13,000	1,875	11,125	9/1/13	1/31/14
Consumer Opinion Services Inc	Residential Phone Surveys	Seattle	12,000	1,846	10,154	9/1/13	10/31/14
Portland State University Foundation	Green Modular Classroom Proj	Portland	10,500	10,500	0	6/13/12	7/31/14
City of Portland Bureau of Planning & Sustainability	City of Portland Workshops	Portland	8,000	0	8,000	1/1/14	12/31/14
Future Energy Conference	Future Energy Conference 2012	Portland	6,500	6,500	0	12/10/12	12/31/13
Portland General Electric	Energy Monitoring Tool		1,190	1,190	0	10/3/13	11/30/13
Energy Efficiency Programs Total:			90,386,344	66,264,561	24,121,783		
Joint Programs							

*The city indicated is the contractor's mailing address, not necessarily the location where work was performed.

For contracts with costs
through: 10/31/2013

Contractor	Description	*City	Est Cost	Actual TTD	Remaining	Start	End
D&R International LTD	Better Data Better Design	Silver Spring	133,500	25,000	108,500	4/30/13	4/30/14
Abt SRBI Inc.	Fast Feedback Survey	New York	65,000	50,315	14,685	3/1/13	2/28/14
Portland State University	Technology Forecasting		57,674	49,311	8,363	11/7/11	12/31/13
CoStar Realty Information Inc	Property Data	Baltimore	19,220	14,352	4,868	6/1/11	5/31/14
KRH Consulting	Work Load Mangement	Portland	16,500	9,852	6,648	4/23/13	10/1/14
Glumac Inc	Planning Technical Analysis	Portland	15,000	15,000	0	10/17/12	10/17/14
The Cadmus Group Inc.	Evaluation Consultant	Watertown	14,940	14,940	0	6/20/13	2/28/15
Strategic Research Associates LLC	Trade Ally Survey	Spokane	14,000	11,596	2,405	5/1/13	12/31/13
American Council for and Energy Efficient Economy	ACEEE Sponsorship - 2013		10,000	10,000	0	1/1/13	12/31/13
Joint Programs Total:			345,834	200,366	145,468		
Renewable Energy Program							
Outback Solar LLC	Outback Solar	Portland	5,000,000	4,950,000	50,000	5/9/12	5/9/37
Sunway 3, LLC	Prologis PV installation		3,405,000	3,396,044	8,956	9/30/08	9/30/28
JC-Biomethane LLC	Biogas Plant Project Funding	Eugene	2,000,000	500,000	1,500,000	10/18/12	10/18/32
Rough & Ready Lumber Company	Biopower Funding Agreement	Cave Junction	1,685,088	1,685,088	0	7/21/06	7/21/26
Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	1,550,000	750	1,549,250	9/11/12	9/11/32
Central Oregon Irrigation District	COID Juniper Phase 2	Redmond	1,281,820	0	1,281,820	7/19/13	7/19/33
Alder Solar LLC	Habilitation Center PV	Portland	1,236,750	1,224,244	12,506	1/18/08	12/31/28
Central Oregon Irrigation District	Juniper Ridge Hydroelectric	Redmond	1,000,000	1,000,000	0	10/31/08	6/30/31
Farm Power Misty Meadows LLC	Misty Meadows Biogas Facility	Mount Vernon	1,000,000	250,000	750,000	10/25/12	10/25/27
Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	0	1,000,000	4/25/12	4/25/32
RES - Ag FGO LLC	Biogas Manure Digester Project	Washington	883,320	331,245	552,075	10/27/10	10/27/25
Stahlbush Island Farms, Inc.	Funding Assistance Agreement	Corvallis	827,000	827,000	0	6/24/09	6/24/29
RBS Asset Finance Inc	Black Cap Solar PV Funding	Chicago	600,000	600,000	0	10/1/12	10/1/37
Tioga Solar VI, LLC	Photovoltaic Project Agreement	San Mateo	570,760	497,399	73,361	2/1/09	2/1/30
C Drop Hydro LLC	C Drop Project - Klamath Irrig	Idaho Falls	490,000	490,000	0	11/1/11	11/1/31
Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	487,000	487,000	0	3/2/10	3/2/30
City of Medford	750kW Combined Heat & Power	Medford	450,000	225,000	225,000	10/20/11	10/20/31
City of Pendleton	Pendleton Microturbines	Pendleton	450,000	150,000	300,000	4/20/12	4/20/32
K2A Properties, LLC	Doerfler Wind Farm Project	Aumsville	230,000	184,275	45,725	5/20/10	5/20/30
Confederated Tribes of the Umatilla Indian Reservation	Small Wind Project Funding	Pendleton	170,992	0	170,992	7/25/13	12/31/28
Farmers Irrigation District	Low Line Canal Pressurization	Hood River	150,000	150,000	0	9/26/12	11/30/32
Farmers Irrigation District	Indian Creek Corridor Project	Hood River	100,000	100,000	0	1/5/10	1/4/29
Wallowa Resources Community Solutions, Inc.	Upfront Hydroelectric Project		100,000	12,590	87,410	10/1/11	10/1/15
Stoller Vineyards, Inc.	Stoller Vineyards PV	Dayton	79,815	77,390	2,425	12/1/05	12/1/26
Bloomberg LP	Insight Services	San Francisco	79,200	68,183	11,017	4/1/11	1/1/14
Wallowa Resources Community Solutions Inc	Integrated Biomass Energy Camp	Enterprise	70,000	70,000	0	2/1/12	1/31/27

*The city indicated is the contractor's mailing address, not necessarily the location where work was performed.

For contracts with costs
through: 10/31/2013

Contractor	Description	*City	Est Cost	Actual TTD	Remaining	Start	End
Deschutes Valley Water District	Early Development Assistance	Madras	68,373	0	68,373	7/23/13	12/31/14
City of Portland Water Bureau	Vernon Hydro	Portland	65,000	65,000	0	11/15/10	11/15/30
University of Oregon	UO SMRL Contribution - 2013	Eugene	45,000	45,000	0	3/9/13	3/9/14
MC Energy LLC	Small Wind Incentive	Spokane	43,250	43,250	0	9/21/10	9/21/25
Clean Energy States Alliance	CESA Year 11 (2014)		39,500	39,500	0	7/1/13	6/30/14
Wind Products Inc	Wind Consultant	Brooklyn	37,500	27,500	10,000	2/6/12	12/31/13
Harold Hartman dba Lynhart Farms	17.5 kW PV project	Malin	32,500	31,386	1,114	5/25/07	5/25/27
Northwest SEED	Grant Agreement	Seattle	30,000	30,000	0	10/3/11	12/31/13
Mariah Wind LLC	Development Assistance Funding	Victor	28,300	0	28,300	10/25/13	12/31/14
SPS of Oregon Inc	Spaur Microhydro	Wallowa	25,000	25,000	0	7/23/10	7/23/30
Robert Migliori	42kW wind energy system	Newberg	24,125	11,641	12,484	4/11/07	1/31/24
Solar Oregon	Outreach Services	Portland	24,000	20,000	4,000	1/1/13	12/31/13
Wind Products Inc	Web Portal Tool	Brooklyn	24,000	25,000	-1,000	6/25/12	9/20/13
Solar Oregon	Energy Education Sponsor 2013	Portland	16,000	16,000	0	1/1/13	12/31/13
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/05	10/1/20
Corbett Water District	Corbett Water District Hydro	Corbett	12,000	4,559	7,441	4/16/12	6/30/32
Clean Energy States Alliance	CESA ITAC		10,000	10,000	0	1/1/13	12/31/13
Garrad Hassan America Inc	RE Consulting Services	San Diego	6,841	6,841	0	6/11/13	2/28/15
American Wind Group LLC	Anemometer Incentive Funding	Oasis	4,031	4,031	0	7/22/11	2/15/14
eFormative Options LLC	RE Evaluation Consultant	Vashon	3,000	3,000	0	3/1/13	2/28/15
Renewable Energy Program Total:			25,448,315	17,693,171	7,755,145		
Grand Totals:			125,834,989	88,394,086	37,440,903		

*The city indicated is the contractor's mailing address, not necessarily the location where work was performed.

Meeting Notes

Finance Committee

December 2, 2013

The Finance Committee met at 10:00 a.m. on Monday, December 2, 2013 at Energy Trust's offices and via teleconference. Present during the meeting were Dan Enloe, Finance Committee chair; John Reynolds, board chair; Anne Root, board member; Dave Slavensky, board member; Margie Harris, Executive Director; Courtney Wilton, CFO; Pati Presnail, Controller; and Amber Cole, Director of Communications & Customer Service.

1. Approved October meeting notes

2. Discussion of current year budget process

Margie recapped activities to date. Generally, there seems to be a high level of satisfaction with this year's process. Meetings with utilities and other stakeholders have gone well. Energy Trust program reserves have allowed for rate stability next year, which is appreciated. Changes in budget presentation also seem to be well received—positive comments were noted regarding format at the OPUC public hearing. The OPUC has approved new staffing requests of 5.5 FTE. They would like to use the upcoming management review to analyze Energy Trust staffing levels and perhaps come up with a benchmark to guide future staffing requests. An example of such a benchmark would be our total staffing costs as a percentage of total expenditures. Consistent with prior years, some technical budget adjustments will flow through in final version, though amounts are not material. Total budgeted expenditures will be up next year around 3.5%, while revenue will likely drop between 1 and 2 percent. Program reserves will likely decline a small amount as a result.

3. Review of October financial statements

There were no big changes to the report. Staff included some prior year comparisons, both balance sheet and profit and loss, at Alan's request. These are helpful in that they show our current year results vs. last year actuals during the same time period. What stands out in the current profit and loss is the large drop in incentive payments (24%) vs. last year. Staff anticipates some of this variance will reverse out by expected high activity in December and January (accrued into December). But, there is also a sense that savings are becoming increasing difficult to secure. Discussion ensued. How well are we using current utility data to identify potential customers and target programs? Response: we are still working on it. The data received needs some clean up before it can be fully utilized. There's no doubt this data could be very helpful and lead to additional savings. Is there potential to partner with utilities other than large privates in other parts of state? Could this represent a growth area? Response: Yes, though while not statutorily mandated, we have received inquiries from public utility trade associations recently. We are encouraged by interest both in terms of potential growth and serving other parts of

state, but any program would have to be tailored to specific needs. Question: how do current year incentives compare to amounts budgeted and forecasted. Response: the following was emailed later in day:

Total Incentives budgeted in 2013:

efficiency	85,792,815
renewable	12,361,687
total	98,154,502

Total Incentives forecasted to be spent by 12/31/13

(forecast was done in August 2013):

efficiency	74,132,892
renewable	7,463,094
total	81,595,986 (83.1% of budget)

Total Incentives expended through October 31, 2013:

39,238,963 (40% of annual budget / 48.1% of forecasted year end expenditures)

4. Schedule 2014 meetings

It was agreed that we likely need to schedule four meetings next year, tentatively set for February, May, August and October. Monday and Friday mornings work best for Dan. Ana will send out a Doodle poll to determine dates and times that work for all and then we will confirm 2014 meeting dates.

Meeting adjourned at 10:50 a.m.

Financial Glossary

(for internal use) - updated August 9, 2012

Administrative Costs

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

i.e. management and general and general communication and outreach expenses

I. Management and General

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

II. General Communications and Outreach

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

Allocation

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

Allocation Cost Pools

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

Auditor's Opinion

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

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

Board-approved Annual Budget

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

Carryover Funds

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

Commitments

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

Contract obligations

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

Cost-Effectiveness Calculation

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

Dedicated Funds

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

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

Direct Program Costs

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

Direct Program Evaluation & Planning Services

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

Escrowed Program (Incentive) Funds

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

Expenditures/Expenses

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

FastTrack Projects Forecasting

Module developed in FastTrack to provide information about the timing of future incentive payments, with the following definitions:

- Estimated-Project data may be inaccurate or incomplete. Rough estimate of energy savings, incentives and completion date by project and by service territory.
- Proposed-Project that has received a written incentive offer but no agreement or application has been signed. Energy savings, incentives and completion date to be documented by programs using this phase. For Renewable projects-project that has received Board approval.
- Accepted-Used for renewable energy projects in 2nd round of application; projects that have reached a stage where approval process can begin.
- Committed-Project that has a signed agreement or application reserving incentive dollars until project completion. Energy savings/generations, incentives and completion date by project and by service territory must be documented in project records and in FastTrack. If project not demonstrably proceeding within agreed upon time frame, committed funds return to incentive pool. Reapplication would then be required.
- Dedicated-Renewable project that has been committed, has a signed agreement, and if required, has been approved by the board of directors.

Incentives**I. Residential Incentives**

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

II. Business Incentives

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

III. Service Incentives

- Incentives paid to an installation contractor which serves as a reduction in the final cost to the participant for the installation of an energy efficiency or renewable energy measure.
- Payment for services delivered to participants by contractors such as home reviews and technical analysis studies.
- End-user training, enhancing participant technical knowledge or energy efficiency practices proficiency such as “how to” sessions on insulation, weatherization, or high efficiency lighting.
- CFL online home review fulfillment and PMC direct installations.
- Technical trade ally training to enhance program knowledge.
- Incentives for equipment purchases by trade allies to garner improvements of services and diagnostics delivered to end-users, such as duct sealing, HVAC diagnosis, air filtration, etc.

Indirect Costs

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

IT Support Services

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

Outsourced Services

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

Program Costs

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

Program Delivery Expense

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

Program Legal Services

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

Program Management Expense

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

Program Marketing/Outreach

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

Program Quality Assurance

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

Program Reserves

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

Program Support Costs

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

subscriptions and fees; miscellaneous expense; payroll & related expense; outsourced services; and an allocation of information technology department cost.

Project Specific Costs (for Renewable Energy)

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

Savings Types

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

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

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

Total Program Expenses (line item on income statement)

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

Trade Ally Programs & Customer Service Management

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

True Up

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

Policy Committee Meeting

November 19, 2013, 4:00–5:30 pm

Attending by phone and video conference

Roger Hamilton, Rick Applegate, Ken Canon, Alan Meyer, and John Reynolds

Attending at Energy Trust offices

Margie Harris, Steve Lacey, Peter West, Fred Gordon, Amber Cole, Thad Roth, Jed Jorgensen, Dave Moldal, Debbie Menashe

I. Preview of Board Meeting Items-Renewables Project Activity

Staff briefed the committee regarding three renewables projects to be presented to the full board for approval at the December board meeting. Each of these projects was selected following Energy Trust's competitive project selection process for project funding in PacifiCorp service territory.

- A. Farmers Irrigation District Plant 2 Repowering Project:** Farmers Irrigation District proposes to replace two existing Francis hydroelectric turbines, 1 MW and 2 MW respectively, with a single 3 MW Turgo turbine. The replacement would enable a 12% increase in energy generation and create substantial savings for the district in reduced operations and maintenance expenses. Energy Trust staff are recommending an \$825,000 incentive, covering 52% of the project's above-market cost. Renewable energy certificates (RECs), equivalent to 75% of anticipated additional generation would be transferred to Energy Trust.

Energy Trust has previously supported engine replacements for biomass and biogas projects. We have also funded several hydro projects where open canals have been replaced with buried pipelines. We have not previously funded the replacement of a hydro turbine.

Each of the past renewable energy equipment replacements has been evaluated in a manner consistent with the way the efficiency programs evaluate similar equipment replacements. Total project costs are evaluated but only the additional generation above baseline generation is counted. Other benefits, such as reduced operations and maintenance expenses are also accounted for. Staff evaluated the current proposal in accordance with the past practice for hydro projects.

Committee members asked a few questions: Has the project received any Business Energy Tax Credit (BETC) support? Jed answered that it has not. Was salvage value of the replaced turbines evaluated and considered, and Jed explained that the salvage value was estimated at \$100,000 and included in the above-market cost calculation. Is the above-market cost calculation and REC transfer calculated on the additional generation resulting from the project? Jed answered that yes, all incentive and REC calculation is based on the additional, new generation resulting from the replacement turbine underlying this project.

- B. Warm Springs Dam Hydroelectric Project:** Warm Springs Hydro LLC proposes to add hydroelectric power production to the existing Warm Springs Dam on the Middle Fork of the Malheur River on the border of Harney and Malheur Counties. The LLC is owned by

an experienced team that successfully developed and constructed the C-Drop hydro project on the Klamath Irrigation District in 2012, where Energy Trust provided a \$490,000 incentive.

The LLC proposes to utilize the flows from one of the dam's outlets and install a 2.7MW hydro turbine to capture the energy of the water released from the dam during the irrigation season. The irrigation district would receive a benefit via lease payments based on the gross revenues of the project. The project would interconnect to Harney Electric Coop and wheel power through the Bonneville Power Administration to make deliveries to PacifiCorp as an off system Qualifying Facility. The project has been able to negotiate a reasonable wheeling fee arrangement with Harney Electric Coop resulting in a very attractive project cost recognized by PacifiCorp.

This would be Energy Trust's first time participating in a hydro project at a dam but there is nothing that precludes our working with a project like this. Projects on existing dams can be complicated because of complicated Federal Energy Regulatory Commission (FERC) permitting processes, but in this case, permitting has been completed. It demonstrates an opportunity for other dams in the state. Energy Trust staff are recommending a \$740,000 incentive, covering 61% of the project's above-market cost. RECs equivalent to 65% of the anticipated additional generation from this project would be transferred to Energy Trust.

Committee members asked whether this dam project presents any fish issues, and Jed explained that an irrigation diversion will be rebuilt in connection with this project, and that should provide some mitigation. Committee members also asked whether there are any lingering issues coming out of the FERC permitting process, and Jed responded that none are known of at this time.

C. Clean Water Services Durham Advanced Wastewater Treatment Plant Biogas

Project: Clean Water Services is proposing to expand its cogeneration operations at its Durham facility in PGE's service territory. The project would consist of a new 1,696 kW cogeneration facility that will add fats, oils and greases (FOG) to the system's anaerobic digesters, producing both heat and power to meet a substantial portion of the facility's energy needs. It will replace an existing 500 kW engine that is at the end of its operating life.

This proposal is one of three projects we have supported using both biogas produced from sewage treatment and co-digested fats, oils and grease to generate electricity for use within the treatment plant. We have funded the City of Pendleton project that is utilizing this approach and we are currently finalizing an offer for the City of Gresham that is using the same approach. Energy Trust staff are recommending a \$3 million incentive, covering 57% of the project's above-market cost. Energy Trust would take ownership to 65% of the RECs generated by the project.

Committee members asked whether Energy Trust support of these types of projects is stimulating the market for these types of projects. Staff explained that the market for FOG continues to grow, providing potential for additional fuel streams for these types of wastewater treatment projects. Energy Trust is seeing continued interest from this customer group and will continue to support it.

II. Update on CEWO/HP Evaluation and Report Implications

Margie explained to the Committee that, at the December 13, 2013 meeting of Energy Trust's Board of Directors Program Evaluation Committee, staff will provide a full briefing regarding results of an evaluation and analysis of Existing Homes program, including Home Performance track projects savings and costs. Projects in the Home Performance track are predominantly projects that are originated through the Clean Energy Works Oregon (CEWO) offering. CEWO is the subject of some interest, both from legislators and the Governor's office. As a result, the evaluation may generate some additional public discussion, and Margie alerted Committee members and offered any assistance or information.

III. Discussion of Level of Detail in Board Packages and Minutes (Debbie Menashe)

Debbie proposed a couple of changes to presentation of (i) briefing papers on renewables projects and (ii) board meeting minutes. The first proposal was to provide a bit *more* detail in briefing papers regarding renewable projects. Our renewables team has observed that board members have raised consistent questions regarding these projects. As a result, staff has proposed to provide a bit more background information in writing in the board packet.

Committee members suggested providing additional bullet points in the "Summary" paragraph in order to give additional information to board members who want to review more summarized information.

The second proposal was to provide less detail in the board minutes overall, reflecting an accurate detail of discussions, but moving away from recording discussions in transcript form.

The Committee supports these proposals, with additional information in the board briefing paper summary paragraphs, and staff will modify board briefing papers and minutes accordingly.

IV. Update on Board Strategic Planning Committee

Staff updated the Committee on the Board's Strategic Planning Committee's meeting of November 15, 2013, describing the information gathering activities currently underway.

Next Policy Committee Meeting

Staff will work with Roger to plan for the 2014 meeting schedule.

Renewable Energy Advisory Council Meeting Notes

October 23, 2013

Attending from the council:

Bruce Barney, Portland General Electric
Robert Grott, NEBC
Juliet Johnson, Oregon Public Utility
Suzanne Leta-Liou, Atkins
Jimmy Lindsey, Renewable NW Project
Commission
Vijay Satyal, Oregon Department of Energy
Tashiana Wangler, PacifiCorp
John Reynolds, University of Oregon
Frank Vignola, University of Oregon
Dick Wanderscheid, Bonneville
Environmental Foundation

Attending from Energy Trust:

Shelly Carlton
Amber Cole
Chris Dearth
Fred Gordon
Margie Harris

Jed Jorgensen
Betsy Kauffman
Dave McClelland
Debbie Menashe
Dave Moldal
Elaine Prause
Thad Roth
Gayle Roughton
Peter West

Others attending:

Laura Uhler, OSEIA/Solar Ki
Kim Foster, Lockheed but representing
himself
Thomas Farringer, REC Solar, OSEIA
board vice-president
Bruce Griswold, PacifiCorp
Bill Eddy, One Energy
Shaun Foster, Portland General Electric

1. Welcome and introductions

Betsy Kauffman called the meeting to order at 9:30 a.m. and reviewed the agenda. The minutes from the September meeting were approved. The agenda, notes and presented materials are available on Energy Trust's website at www.energytrust.org/About/public:meetings/REACouncil.aspx.

2. Q2 dashboard presentation

Betsy made some comments about the overall Energy Trust budget to provide context and opportunity for comment. About 85 percent of the budget goes to energy efficiency. The Energy Trust budget focuses on five themes—easy access, targeting, innovation, improved systems and processes, and looking ahead.

Another important note is that Energy Trust's savings and generation goals are no longer specified as "conservative" and "stretch" goals. Beginning in 2014 we will have a single goal for each program. Betsy reviewed the schedule for budget feedback. Important dates:

- Live webinar on November 15
- RAC/CAC updates on November 20
- Oregon Public Utility Commission, OPUC, public meeting, November 26
- Public comment due November 27

Juliet Johnson: OPUC staff will provide a memo on the budget, and comments will be considered if sent to juliet.johnson@state.or.us by November 13.

Betsy reviewed the strategic planning schedule and noted an opportunity to be involved by going to Energy Trust website.

3. Budget

Before discussing the Renewable Energy budget, Thad talked briefly about the JC Biomethane project that just came online in Junction City. It is now receiving commercial food waste from restaurants in the Portland area and is providing power to PGE. He also thanked Tashiana for hosting a tour for renewable energy staff of the PacifiCorp control center, which provided a better understanding of how Pacific Power and other PacifiCorp utilities provide services throughout their western service territories.

Thad Roth outlined the agenda for the budget presentation:

- Themes
- Revenue
- Budget trends
- 2013 Q3 dashboard
- 2014 budget allocation
- Program work plans

Thad mentioned that Jed's previous dashboard presentations have provided information on the P&L (current year spending) budget—this is the different from the “activity” budget. The activity budget looks at new funds that will be available and how they will be allocated.

The budget will look a little simpler in 2014. We will have completed the transition to two programs—Solar and Other—and, as mentioned earlier, we will have transitioned to one generation goal.

Thad outlined the budget themes. The budget will continue our portfolio management approach. We will continue to support the five technologies (solar, hydro, geothermal, wind, and biopower). We will focus on pipeline-building—finding projects that can move forward without the benefit of tax credits. We will continue to support a robust standard solar program and focus on soft cost reduction strategies.

Thad then presented the current 2013 dashboard, showing utilization of our budget through Q3. At this point, we have spent half the budget. There are two main reasons why we were unable to spend all that had been budgeted. First, we offered a request for proposals for \$1 million for large solar projects, expecting those to be completed and paid in 2013. Instead, those funds will be spent in 2014. Also, we have two biogas projects that shifted to 2014, there was some money set aside for a project we didn't end up funding, and the Oregon Institute of Technology geothermal project is delayed to 2014. About \$2.5 million will shift into future years.

Dick Wanderscheid: Is this an anomaly or does it happen every year?

Thad: These kinds of shifts in spending from one year to the next are not unusual. Projects sometimes take longer than expected. It is our challenge to manage that and we need to determine whether a project is no longer viable or if it is just taking longer.

Dave McClelland: It's been a tough year for solar reservations, and changes made last year really impacted this year. We had the smallest pipeline since 2007 early this year.

Thad: Here's the generation dashboard, with 2013-2015 numbers. We expect to fall short as projects have shifted into the coming years.

Jed Jorgensen: The budgeted goals that are set are related to our guesses. That goal was set a year ago based on our expectations for projects reaching completion.

Betsy: Often construction has begun and an unexpected snag comes up.

Thad: A review of activity budgets from 2010 to 2014 shows an overall decline. We expect the bottom to be \$14.5 million dollars.

Suzanne Leta-Liou: Is this related to economic trends?

Thad: Yes, partially.

Betsy: The vast majority is due to using up budget carryovers from previous years.

Peter West: We are also paying more for projects now that there is no BETC.

Thad: The 2014 draft budget is just over \$18 million. In the past, we have tried to not have more than 50 percent of the budget committed to any one technology, but this is a special year. More than half of the budget is going to solar. In addition, we expect to see more and more projects with no state support, and we don't expect to accomplish as much as we have in the past. A few years ago the goal was 3 aMW, and now it's closer to 2 aMW. Overall, 55-60 percent of the renewable energy budget is from PGE and the remainder is from Pacific Power. PGE is more heavily weighted to solar because more customers and contractors are located in their territory. The Pacific Power budget is the opposite—the market is not as robust for solar, and most non-solar projects are in Pacific Power territory.

Peter: Based on the numbers Thad just mentioned, 39 percent of the budget comes from Pacific Power.

Dick: You can shift dollars from one technology to another, right?

Thad: Yes, we have this flexibility.

Vijay Satyal: You've experienced significant delays in non-solar projects. I suspect you plan for these delays to some degree.

Thad: We don't pay before commercial operation. It's possible that a project could fail, part of the reason we pay over time.

Vijay: That was the biggest lesson for the business energy tax credit, BETC.

Betsy and Dave then outlined activity plans for 2014.

Betsy: We will focus on pipeline-building using feasibility studies and other forms of project development assistance. Bio and hydro are our priorities because those technologies are most likely to be able to leverage other resources and offset retail rates. We'll have competitive incentives in both territories. We plan to have targeted outreach to wastewater treatment plants, and we want to help projects leverage other funding opportunities.

Robert Grott: Has this competitive process changed the dynamic of project applications?

Betsy: We're seeing projects that are further in the development cycle before they get to us.

We're also hearing from more people who are new to us. So far, we have not had to turn away a good project. Another effect is that we've asked people to tell us how much money they would like. People may not be saying what they need, but what they think will win the money.

Jed: Having projects apply when they are further along in the development process was intentional—we asked for proposals that were closer to construction.

Thad: Another effect is creating a group of projects that may benefit from project development assistance.

Betsy: We provide feedback about why their project is not ready, and they find that useful. We try to incorporate them into our pipeline whenever possible.

Dave then presented the solar activity plans.

Dave: 2013 was a tough year. Incentive reductions made last year were critical to make the budget, but we began the year with very few projects in the pipeline. Commercial incentives

were not enough to move the market, and we increased incentives in April. We had a good meeting with PGE trade allies and came out realizing that we needed to increase the incentive again for PGE commercial projects.

Frank Vignola: Plans to do a similar thing for Pacific Power?

Dave: No. You saw the split for solar/other between Pacific Power and PGE. We have \$6 million of incentives for PGE, and \$2 million for Pacific Power. The combination of Blue Sky grants, USDA grants, and ODOE Renewable Energy Development grants is adequate to drive commercial projects in Pacific Power territory. It's going to be a stretch to spend \$6 million in PGE territory. There's steady activity in PGE residential, driven mainly by third-party providers, but PGE commercial is where we needed to move.

Suzanne: Is part of the plan to have the feedback loop occur more regularly?

Dave: We're already moving faster than usual—and this is about as fast as we can move. It takes time to make a change and see the impact. We are thinking of a different structure for larger projects. Vijay, can you speak to RETC changes?

Vijay: This is not an easy task. The state incentive program does not have a clear budget and goals. We have to go back every year and look. We kept rates steady, but with costs coming down significantly, we are putting in a proposal to reduce our incentive from \$2.10 to \$1.90/watt. We have a formal rule-making meeting coming up.

Dave: We're looking for stability for next year. If we need to change, we can make 5-10 cent changes. PGE's number will be a stretch to reach. We are on track to spend about \$4-5 million. We're working on an idea for a streamlined incentive process for projects larger than 250 kW. The RFP for large projects included a 10-page application with lots of financial detail requested. We think we can be more successful with simplified and quick bid process, followed by a more complete application. We can then push contractors through the standard application process after a rate has been set. We'll have at least \$1 million if not more for the competitive process.

Dave: Another goal is reducing the soft costs for solar. We need to work on contractor development: business development, training, marketing support, and sales and quality management.

4. Solar projects for funding

Thad presented two solar projects that are proposed for incentive funding, both brought to us by developers as part of Pacific Power's request for proposals. Thad explained that Oregon's Solar Capacity Standard requires Pacific Power to add 8.7MW of solar by 2020. Energy Trust has participated in three utility solar projects to date—one for Pacific Power, two for PGE.

As a result of its RFP, Pacific Power selected two projects to negotiate power purchase agreements and requested \$1.97 million from Energy Trust to support them. Our budget did not anticipate these projects; however, we have \$700,000 that remains unallocated from our summer competitive process in the Other program.

We reviewed the Pacific Power solar projects for eligibility, and the above-market cost was well above budget of \$700,000. The incentive we are proposing would not cover the full above-market cost, but would result in a lower rate over the life of the power purchase agreement.

Bruce Barney: There will be a new power purchase agreement?

Bruce Griswold: Yes.

Thad: In this case the dollars we are offering are based on budget constraint. If we have dollars available, we can move them from one program to another to put the dollars to work.

Jimmy Lindsey: Would this project happen in the absence of Energy Trust?

Thad: Yes, this would happen. This will benefit ratepayers directly.

Juliet: Your question is a good one. These projects are ranked fourth of the four priorities for the renewable energy programs, but this is a good thing. We recognize that this is still valuable.

Thad: The new performance measures from the PUC create a priority of project funding: project development assistance, standard solar, non-solar, and then, if there are still unallocated dollars, projects like these.

Suzanne: It seems important to note that this money is not coming out of the standard solar program. Would you invest more in the standard program had these projects not come up?

Thad: These dollars would be considered unallocated funds and then re-allocated for the next year. These projects came to us as a package, and instead of trying to make the two compete, we decided to allocate the \$700,000 between the two based on alternating current, AC, capacity. They support Goal Two of 2010-2014 strategic plan.

Thad provided details of the Bevans Point project, which is proposed for an incentive of \$180,000. He said there are strong financing partners and listed project details, outlined in the attached PowerPoint.

Thad: We evaluate projects based on Pacific Power's qualifying facility rates and the double renewable energy certificates that these receive. This is a standard type of evaluation for this type of project. All numbers are net present value because we look at the full life cycle.

Dick: Does this forecast of funding exclude incentives?

Thad: No.

Robert: What if you used the power purchase agreement numbers instead of the qualifying facility values?

Thad: Costs would be higher.

Bruce Barney: Operating and maintenance costs look high.

Thad: These costs include the cost of the land lease. The renewable energy credits are all going to Pacific Power.

Thad outlined the second project—Stone House Solar, proposed for an incentive of \$520,000.

The project has a strong team and a passive tax equity investor, and needs to be operational by April 2014 to get its BETC. Project details are in the attached PowerPoint.

Bruce Barney: Are we paying for the property here?

Thad: Property is being purchased and is included in the capital cost.

Frank: Are these systems being cleaned?

Thad: There was a list of maintenance activities provided. The panel's overnight position is vertical, which means less dust gathering.

Bruce Griswold: There will not be frequent hosing.

There were questions about the capacity being expressed in AC, rather than direct current, DC.

Bruce Griswold: This has been built to 5 MW. They're proposing to overbuild DC capacity. One of the solar capacity rules is a fixed DC to AC conversion factor of 85 percent. We have put in a waiver request to the Oregon commission for this one project. Their inverter is sized, their transmission is set, both at 5 MW.

Dick: Will Energy Trust follow up to ensure that ratepayer bills will be reduced because of this?

Juliet: That's our role. We've been brought along during the entirety of the project. We'll bring this in during the rate case.

Thad: We did this in Black Cap too.

5. City of Astoria hydro project

Moved to next meeting.

6. Public comment

No public comment.

7. Meeting adjournment

Betsy thanked the council members for their participation and adjourned the meeting at 11:59 a.m. The next full council meeting is November 20, 2013.

Conservation Advisory Council Meeting Notes

October 23, 2013

Attending from the Council:

Jim Abrahamson, NW Natural
Warren Cook, Oregon Department of Energy
Wendy Gerlitz, Northwest Energy Coalition
Charlie Grist, NW Power and Conservation Council
Garrett Harris, Portland General Electric
Scott Inman, Oregon Remodelers Association
Andria Jacob, City of Portland
Juliet Johnson, Oregon Public Utility Commission
Don MacOdrum, Home Performance Guild of Oregon
Holly Meyer, NW Natural

Attending from Energy Trust:

Adam Bartini
Tom Beverly
Matt Braman
Amber Cole
Kim Crossman
Diane Ferington
Sue Fletcher
Fred Gordon
Marshall Johnson

Oliver Kesting
Spencer Moersfelder
Elaine Prause
Jessica Rose
Paul Sklar
Scott Van Swearingen
Julianne Thacher
Ed Wales
Peter West

Others attending:

Monica Blakeslee-Kish, PEI
Sara Brockmeier, Fluid Market Strategies
Christina Cabrales, Conservation Services Group
Scott Davidson, Clean Energy Works Oregon
Tim Davis, Conservation Services Group
Carolyn Farrar, NW Natural
Ken Foster
Mark Kendall, Energy Trust Board of Directors
Marilyn Morfitt, NW Natural
Brien Sipe, Fluid Market Strategies
Mark Weiman
Kendall Youngblood, PEI

1. Welcome and introductions

Kim Crossman convened the meeting at 1:30 p.m. and reviewed the agenda. The agenda, notes and presentation materials are available on Energy Trust's website at <http://energytrust.org/About/public-meetings/CACMeetings.aspx>.

2. Q3 dashboards

Peter: The sequence of discussion today will be similar to last year's meeting on the draft budget. We start by reviewing our status three-quarters of the way through the current year. We will address 2014 after the break.

For 2013 we are forecasting to reach 95 percent of the combined gas and electric stretch goal by year end. NW Natural, Pacific Power and PGE will all be at about 96 percent of stretch goal. Our latest information indicates we may only reach 77 percent of the stretch goal for Cascade Natural Gas.

To reach these forecasts we will need to continue the typical outreach with customers to keep things moving. Things may settle or improve, and these forecasts can change, but third quarter numbers are typically the most accurate of our forecasts.

Cascade Natural gas is lower than forecasted a few months ago. There are several reasons for the drop. Completion of the large Sunriver project that we've worked on since 2012 will probably shift from this year to 2014. Second, hearths haven't taken off in Cascade territory as they did with NW Natural. We had trouble with dealer interest in Cascade territory. Looking at the run rates we're getting, the extra bonus isn't having an effect in Cascade territory. And the largest reason for the drop is due to a large industrial Strategic Energy Management, SEM, project that is on track to produce 30,000 fewer therms than originally estimated. The revised results from this industrial project represent eight percent of the entire Cascade goal for the year.

We will try some tactics to drive savings closer to 85 percent of the conservative goal. This includes more outreach and offering bonuses to induce a few commercial projects to finish this year instead of next.

Before turning to the sector detail, I should note that NEEA's revised forecast is now higher than stretch, with an additional 4 million kWh for PGE and Pacific Power territories. Specialty lighting, high-efficiency televisions and efforts around the new residential building code account for the uptick in savings.

Mark Kendall: Is the residential code uptick due to a higher number of housing starts than had been expected?

Peter: It's partially the increase in housing starts, but we're also seeing 10 percent more savings per home than expected. The market is adopting efficiency enhancements faster than we assumed it would.

Turning to the sector breakouts, on the industrial side, savings are near stretch for PGE and NW Natural. The sector finished its one-thousandth small industrial project. That's exciting in a sector that used to be dominated by large projects, and indicates that the initiative started in 2009 to expand into small projects has been successful.

Industrial is lagging in Pacific Power and Cascade Natural Gas territories. In the second quarter, we did significant rural outreach and identified a lot of projects that will land in 2014. It was a good effort and worth repeating, but unfortunately it won't impact this year's results.

In Production Efficiency, as with Existing Buildings, past successes in southern and eastern Oregon may have tapped deeper into the potential than we realized. .

A second shift we may be noticing has to do with the economic recovery. There seem to be fewer industrial sites east of the Cascades. Overall, Oregon's industrial economy has grown, but it has shifted toward the valley instead of eastern Oregon. We may be overestimating potential. As we will note later, an area of focus in 2014 will be to better understand the savings potential in rural Oregon

Charts broken out by program are posted on the website;
see http://energytrust.org/library/meetings/cac/131023_CAC_Package0.pdf.

Mark: Are we going to report separately on data centers?

Kim: They're part of commercial.

Peter: Data centers are quite prevalent in New Buildings, the program we use to serve new construction. Pacific Power is over stretch for New Buildings because of data centers.

Multifamily and New Buildings are both running strong in every utility. Multifamily is exceeding stretch goals in Cascade, Pacific and NW Natural and meeting the PGE stretch goal. Scott Van Swearingen, our program manager, and Program Management Contractor, PMC, Lockheed Martin implemented direct installs for Multifamily. This approach is bringing in very cost-effective savings and has been an effective outreach tool for greater engagement with owners and residents. It's working across utilities and in all markets. We'll continue to run this effort in 2014.

In New Buildings, program manager Jessica Rose and our PMC, PECl, pitched a new approach in 2012 with market choice packages. While support continues for custom projects, small- to mid-size projects are offered a limited set of straightforward, pre-packaged solutions. The ease of entry and off-the-shelf aspect has yielded greater investment beyond what is required to meet code. These packages serve small- to medium-sized data centers. Custom offerings continue to serve the large data centers that have been locating in Pacific Power territory.

Existing Buildings is lagging. The core program is doing well, but we made some robust assumptions in the launch of commercial SEM that are not going to be met. It has not been an easy shift to take ideas from industrial SEM for application in the commercial sector. Commercial customers find it challenging to devote sufficient time to the SEM process.

Oliver Kesting: We get the savings per project we expected, but aren't getting as many projects.
Peter: We need to look at revisions for 2014 to keep SEM participation rates up.

Further impacting Existing Buildings was the realization halfway through the year that the rooftop unit tune-up, RTU, initiative had run its course. With fewer savings coming in, we realized we had saturated the market and needed to pull back.

One the bright side, working with the Oregon Department of Energy, ODOE, and other organizations, Existing Buildings has improved 101 schools, with 67 additional schools expected to complete by year-end.

We are considering moderate bonuses for custom gas and electric projects in Existing Buildings in order to drive more year-end savings and ensure we surpass conservative goals.

Mark: Is that schools number more than double the historical average?

Oliver: We completed approximately 87 school projects last year. School projects are not always comprehensive. Schools implemented key measures like personal computer power management this year.

Holly Meyer: Are any of those buildings on oil?

Warren Cooke: Many of them are still on oil.

Oliver: Our schools folks in Existing Buildings have a pretty good idea of how many. We would be able to find out about the ones in the pipeline.

Peter: Let's move on to residential, which for us includes Existing Homes and New Homes & Products.

New construction has rebounded to a level 50 percent higher than forecasted and we're still maintaining good penetration rates. We're also getting 10 percent more savings per home than we had expected. The new homes market has shifted from 70 percent gas heat to 85 percent gas heat over the last year. We completed our 4,000th EPS for New Homes. Our incentive is based on the actual EPS score vs. the code score for that type of home. We have taken what has worked for New Homes and extended it to existing homes as a pilot, and now through recent legislation ODOE gets to decide how to roll it out statewide.

Refrigerator recycling has done well. If you have a fridge to retire, we give you \$40, which can be directed as a donation to Oregon Food Bank. So far this year 526 people have elected to donate their incentive, raising over \$21,000.

Appliances have been lagging. We jumped up a tier before sellers were ready. Compact fluorescents and LED lighting have made up for that on the electric side.

Weatherization is trending well in Existing Homes, but we expected it to be higher. The loss of measures and fewer deemed savings per measure have made it tough to keep trade allies interested in promoting it. We noted earlier that we had fewer than expected Clean Energy Works Oregon projects, down from the forecast in last year's budget. With fewer weatherization measures available in Clean Energy Works Oregon, fewer projects qualified for our incentives.

Hearths in NW Natural have been a nice success story, and windows have been another bit of good news. Making windows independent of a second measure has given us greater results than expected.

On the electric side, heat pumps make up the majority of savings.

Jim Abrahamson: To make up for some of the shortfall, what water savings devices will be used?

Peter: We will distribute more kits with showerheads and aerators.

Marshall Johnson: Yes. The kits are expected to save 10,000 therms, or about 45 percent of total savings for Existing Homes.

Charlie Grist: Do the heat pump numbers include both ductless and regular heat pumps?

Marshall: They include both types and also include heating system replacement and heat pump upgrades.

3. Discontinuing Existing Buildings rooftop tuneup incentives in 2014

Spencer Moersfelder: The background information will be familiar to some of you from when we adjusted the incentive offering earlier in the year. We know that many of the units aren't functioning properly and there are big savings to be had if we can intervene to get the units to work as intended. The idea behind the initiative was to incent trade allies to tune-up the units to get them working properly. Some of the trade allies had existing service contracts to maintain the units, and a service agreement was a requirement to participate in the program. Through the tune-up we added incentives for demand control ventilation controls, CO2 sensors, outside air sensors, economizer fixes, etc. The offering was released during the economic downturn when companies were not willing to invest capital. Incentives were designed to cover most or all of the project expenses. Trade allies had to be qualified to work on the units and trained by the program.

We successfully worked with contractors who were otherwise non-participating trade allies. Most of these contractors provided service contracts to keep HVAC systems running. Participating trade allies needed to show evidence they had an existing service contract, and we hoped to ensure measure persistence that way.

We showed little savings in 2010, the pilot year. Savings ramped up dramatically in 2011 and 2012, but dropped off rapidly in 2013. In 2013 we reduced the incentive and stopped offering incentives for units less than five tons. Our goal was to serve 1,500 units by June 30, 2013. We have treated 93 units to date. Trade allies who were offering the service seemed to have completed the tune-ups under their existing contracts.

Charlie: We're getting some feedback from Dan and his crew of trade allies. It sounds like most of this was through existing contracts and trade allies. Yes, those were tapped out, but how big was their coverage? Was it 10 percent or 90 percent of all the possible rooftops?

Tim Clark: We don't have a solid number right now.

Holly: How often does one of these need to be tuned up?

Spencer: Ideally, it's done annually. They can come out of alignment quickly. We hoped the contractors would keep them up under their service contracts.

We have decided to discontinue the offering because the evaluation team did a billing analysis, and the 2010 and 2011 analysis showed lower savings than we had hoped to see. Based on the billing analysis, gas savings in 2010 were below expectations and electric savings above expectations, but 2011 gas and electric savings both were below forecasts. It's tricky to correlate this result to specific factors; for example, unit size didn't correlate. There was a wide variation in the units' conditions before tune-up. In instances where units were not working at all, tuning them up to make them run may have resulted in more consumption than when the units weren't working.

There were significant differences in savings between contractors. The evaluation examined trade allies serving the largest proportion of units and found large variations in realization rates between contractors. This demonstrates a need to revise the quality control protocol if this initiative is reinstated in the future. We had a high level of quality control in 2010 for the pilot but could not sustain these levels in subsequent years due to cost.

We are winding down the offering this year. Applications will be accepted through September 20, 2013, and we won't offer it next year. We'll do some onsite metering during the 2012 and 2013 impact evaluation, which will take place in 2014. We recognize that billing analysis has limitations, and we may see different results from the impact evaluation. In addition, we want to continue working with the trade allies that we recruited for this effort and are developing additional offerings that they can leverage for their business.

Holly: I have a process concern with this item. I don't remember this one being on the agenda as a discussion.

Kim: Discussion doesn't mean we need a decision from the group. There are many times when we've had to make decisions based on very clear evaluation results. This discussion is to learn if there is anything we aren't considering, or if there are other ways to work with HVAC service contractors.

Holly: It's peculiar because we had incentives out there and people grabbed them. When we reduced the incentive, no one took it, so we concluded that we needed to end the program. It sounds like we had a small sample size, and it was hard to read the data. The sample may not have been big enough. It sounds like we decided to end it before getting all of the data. Did we really get what was out there?

Spencer: We dropped three- and four-ton units because the incentive was the same for all of them, but savings potential is smaller for the smaller units. We were covering most of the costs of the tune-up, which turned out not to be cost effective. We did reach out to trade allies before reducing the incentive. Their feedback was that they could still sell it; however, that didn't happen. We continue to believe we tapped the market.

Peter: Holly, the statistical validity was another concern I heard from you. It was pretty robust, as I recall.

Fred Gordon: We concluded that we were sending people who were already on the roof to do something more but we didn't know what else they were doing. It's very complex to get a controlled outcome when they are up on the roof doing something for us along with unrelated work. It's hard to control what you get.

Peter: We were finding that after the tune-up the units functioned better, provided more air to the building and resulted in a healthier building. But often these results required using more energy than the units had used before the tune ups.

Holly: That's a non-energy benefit. Is that factored in?

Fred: if you have a positive savings number you can talk about non-energy benefits. We need to look at other equipment and automation, too. Do we want to target those with functional equipment? Other utilities show savings differently, and we aren't able to do it the same way.

Mark: In that first year we had a higher quality control rate?

Fred: We had a high volume and an unsustainable quality control rate. There were different contractors and too many variables.

Charlie: It doesn't surprise me that the billing analysis is equivocal. The Regional Technical Forum, RTF, has posted a protocol with very little measurement to use. It's very cheap. The big concern is that there's some thermodynamic potential here, and we haven't found a way to make it work for people. When we do it, we're increasing usage more than savings. We knew that would happen, but not how big the variations would be. Something is there, but it looks like we need a better way to tap it. You changed the incentives a lot, and the model was to use existing relationships, but clearly a big part of the sector doesn't benefit from these. Is there some way we get at that chunk of potential savings out there?

Warren Cooke: A lot of rooftop programs have struggled with this, and they have failed all over the country. They have always worked with imaginary baseline savings and 100 percent incentives. They concluded that "the measure is hard to do, so let's stop doing it." The machines need the maintenance work, and starting and stopping the measure is pretty expensive. Now we have some national standards we can use. From a contractor perspective, if you can't use the standards you don't get to play. This way of doing it may be over, but the potential is still out there.

Spencer: That's how we're viewing it, and we can reexamine working with trade allies to get the savings.

Warren: We see these imaginary ventilation baselines a lot. The buildings would have been healthier, but now you use more energy.

Holly: We have these imaginary baselines all the time, and it's inconsistent. If the customer has a standard efficiency gas furnace we assume they would replace it with a like model; but we don't really know if they would have done that or gone with high efficiency.

Kim: We're talking about retrofit vs. incremental baselines. We work with the actual baseline.

Peter: This is a good question about establishing baselines, and if the planning shop is willing, we should bring this discussion back to a future meeting. We should come back to it as a good question, but we can't cover it today.

Mark: There are other good things that come out of these initiatives. In working with NEEA and the RTF we found that Honeywell economizers haven't worked very well. As a result, Honeywell redesigned them. There has been an impact on the region based on this. We know there's a stockpile of opportunity. Charlie brings up a good question. The savings may be lost in the noise of the larger building assumptions.

Fred: The predicted savings are within the range that we thought we could detect with the sample size we had.

Jim: I recall a discussion about Nest thermostats and whether regular programmable thermostats were the baseline. We said we were going to use non-programmable as the baseline; leading to more savings per installation.

Fred: We haven't seen evidence that programmable thermostats save anything.

Charlie: The board and Juliet should be aware of it, and there's more than one way to quantify it.

Kim: This question is core to our business, and our approach to establishing baselines definitely isn't willy-nilly.

Peter: Added on is some sort of review of how we apply it and whether there's a pattern.

Jim: Is that on the website somewhere? It would be great to look into the statement that programmable thermostats show no savings.

4. Residential measure changes

Marshall: We previewed these adjustments with the trade ally stakeholder group a few weeks ago. Two CAC members are part of that group—Don MacOdrum and Scott Inman. These are changes to prescriptive measures, which constitute the bulk of the Existing Homes program. I'll also give a heads up about measures that will be reviewed for potential baseline adjustments next year for 2015.

The changes are summarized in the slides.

Heat pumps will have a new, higher tier in 2014. We currently capture these through the current tier of 9.0 or greater. Early indications suggest the baseline is trending upward. We looked at the Puget Sound area and believe there's a pathway to market transformation. Right now we provide upgrades and full replacement incentives. We expect additional savings of approximately 500 kWh per year. Incentives would be set at \$500 and \$700. The current baseline is HSPF 8.5. If we move to two tiers, we're positioned for the next step in the common market baseline in 2015.

Mark: Are we seeing a falloff in 9.5 and above right now?

Marshall: We're not seeing that. We see a trend above 9.0, but no rush to 9.5.

Holly: Is HSPF 8.0 the baseline, or is it higher?

Marshall: Code is 7.7 and the current baseline is 8.5. We believe the baseline could be moving toward 9.0.

Garrett: What's the percentage of 9.5 units currently coming through the program?

Marshall: It's roughly 10 percent, but we need to revisit the data and come back with that detail.

Jim: Oil and gas are backups and not primary heat?

Marshall: We assume the heat pump is the primary heat source.

Jim: So the furnace could have been primary, and the heat pump makes it backup?

Marshall: Yes.

Warren: Is that to get someone who wants air conditioning to consider a heat pump instead?

Marshall: We believe that we're influencing people who would have already chosen electric heat pump to install something more efficient.

Holly: This is what I meant earlier: it's an assumed baseline that may not be true.

Marshall: There's a market research study on our website that documents this.

Charlie: Are you doing heat pump commissioning along with this measure?

Marshall: Yes, we do CheckMe and PTCS, but we believe trade allies aren't locking out strip heat at the right temperatures, so we are looking for ways to improve that.

Charlie: Unless you do those commissioning things, the savings may not show.

Marshall: We may go after the controls, long term.

Fred: It can be tricky.

Charlie: It's not as tricky as rooftops but can be elusive, with more than one way to do it.

Holly: We had a presentation a while ago that showed the penetration of higher efficiency heat pumps at about 60 percent. It was a question about when we should back down because we've transformed the market. It seems like you need to adjust your baseline. It makes an assumption about what people are putting in without incentives. We're now paying a higher incentive on better equipment, but are we keeping the same baseline with a higher incentive?

Marshall: We're not moving the baseline up. We are seeing more installs because of our activity.

Holly: That's my concern because we did the same thing with gas furnaces.

Fred: We are moving the baseline up, but it's a matter of timing.

Marshall: The other measure is heat pump water heaters. We currently support NEEA's tier two northern climate spec, but there's only one manufacturer who qualifies. The long term goal has been to influence 2020 code to require a certain efficiency over 55 gallons. We got behind this tier because we feel it performs better in our climate. We've supported NEEA's Smart Water Heat project, and they also have strategies for tier one with suppliers and contractors. We could align with their initiative to meet our objectives because properly sized systems could produce savings to promote customer satisfaction. We think there are issues with replacing 50 gallon regular electric with 50 gallon heat pump water heaters. They are unequal in efficiency. We are favoring the larger, 60-gallon units, but would continue offering incentives for the smaller units. The measure is only for those who are current electric water heat customers. We'll educate customers and align with NEEA to encourage units that perform well. We'll also support self-installs to align with NEEA.

Holly: Since we have the incentive today, what is the spec for that one?

Marshall: It's a tier two unit, with certain requirements. They're exhausting air from inside to outside. Conditioned space temperature is unaffected.

Garrett Harris: Are the models out there aligned with your incentives?

Marshall: We followed the common cutoff sizes that were in the market.

Mark Kendall: Is there no variation on location of the unit?

Marshall: Tier one units are to be installed outside the conditioned space. Installation requirements and other specifications will be explained in the November Insider.

Air sealing has come up for several years, and we were waiting for billing analysis. From recent billing, we found the savings levels to be higher than we thought, but costs have tripled. The societal benefit is a challenge, especially on the gas side. We don't believe we should promote air sealing if it's a challenged cost effectiveness outcome. Air sealing accounts for about two percent of gas and one percent of electric savings. We will implement a prescriptive, air sealing and attic insulation combination pilot in 2014 as an effort to continue promoting air sealing.

Our current assumptions are shown in the chart. Incentives were reduced to \$150 in 2013, and savings are most challenged on the gas side. We revised the costs to include the average we found in our database. On the gas side it costs more than it saves. This is the main reason we decided to test ways to do prescriptive air sealing instead of whole-house.

Warren: Did the requirements change between the 400 and 1200 job?

Marshall: Yes, and we primarily promote it through the Home Performance track where we look at ventilation, indoor air quality and sealing air leaks through the home performance assessments. We plan to drop air sealing.

Warren: Are they adding ventilation?

Marshall: It's mostly Home Performance contractors, who are very comprehensive in their approach. They look at what they can address to get large savings and generally seal to the building airflow standards.

Charlie: The revised savings come from where?

Marshall: The 2012 program year.

Holly: Why are the costs inflated? Have we asked? Are they inflating what they charge because of the incentives?

Marshall: There are many reasons, and we have ideas to investigate.

Peter: We can come back with more information at the next CAC meeting.

Holly: Can you add something for next time? There were four reasons you gave.

Marshall: We have exceptions for gas weatherization measures through the OPUC to allow us to gradually improve our portfolio.

Elaine: We did go through the process of defining the exceptions, and determining if there is there a case we can bring. We couldn't find the justification and criteria needed to keep costs down and bring performance up.

Holly: There's a lot of grey area, and I would like to understand it better.

Kim: We went through the correct process.

Don MacOdrum: Electric air sealing seems to pass pretty well. The consistency exception exists. If they are really such small percentages of the portfolio, how much are they really bringing it down?

Marshall: The benefit is 0.17 and the cost is 1.0. They bring the program portfolio down by \$1.5 million in added costs.

Holly: So it's a much bigger piece of cost but not savings?

Wendy: Why would you remove both the gas and electric incentives? I don't have enough information, but it looks like you are dumping something that is cost effective by getting rid of the electric incentive.

Marshall: We've heard from this group, and from trade allies, that it's disruptive to have different gas and electric measures.

Holly: The logic doesn't seem consistent either.

Marshall: We can bring that back for discussion.

Paul Sklar: Around 75 percent of air sealing projects have been gas homes.

Marshall: There seem to be fewer air sealing opportunities in electrically heated homes, based on history.

Jim: I'll be curious, because it looks like savings vs. usage is skewed. I'm interested in that.

Scott Davidson: When you say this is a stand-alone measure, do you mean it bears all the costs of test in and test out?

Marshall: We assume all requirements for that measure are included in the costs.

Scott: If you combine that with attics or other insulation, a standard Home Performance practice, the costs are spread among all the measures. It's a bad call to walk away from that practice. Some homes are very leaky and others aren't. To not seal the very leaky homes would be a bad call. Maybe we need to look at the reduction achieved to keep it cost effective.

Marshall: BPI requires that the attic is sealed when insulation is installed. We can assume that without our intervention, we'll still get the same savings. We need to find out how to bring the costs way down or bring the savings way up. There may be an opportunity there, but we may not always pay for each portion to get the savings.

Tim Davis: Is that one to two percent for the overall residential program or just weatherization?

Marshall: That's for all of Existing Homes, excluding behavioral change efforts.

Holly: I checked UM551 to be sure, and I think you are imposing an additional constraint. It doesn't say you have to be close to cost effective before looking at an exception. I don't think that as shown we should disregard it. To maintain consistency, it could still fit.

Kim: We will clarify that.

Charlie: On Home Performance we would like to have the savings back on the chart. That will help in making comparisons.

Kim: I can tell that we need to send things out earlier. I'm hearing a lot of requests for technical information.

Marshall: The Trade Ally Stakeholder Group works through some of these technical issues. It includes Oregon Air Conditioning Contractors of America, the Home Performance Guild, Portland Metro Home Builders Association and others who are influenced by our programs. We

talk about these things with these groups. We met with them regarding air sealing and we'll go back them with other measures.

Kim: Are there other comments from the group?

Scott Inman: My comments were already covered, but the electrical part baffles me.

Don: Part of the stakeholder group did provide some of the same feedback you heard today. Part of it was about not being on the timeline for rolling out the changes. There was some pushback.

Marshall: Moving on to other measures: Savings Within Reach maximizes utility cost tests to serve customers with higher incentives. We will remove air sealing and blower door testing as a requirement from that track. Based on input from the Trade Ally Stakeholder Group, we wanted to maintain testing as an option to ensure the minimum ventilation level is met. We will add 9.5 HSPF heat pumps with slightly higher incentives.

On insulation outside Savings Within Reach, we made changes in 2013 to stay in line with gas costs, and we didn't change the core assumptions to Savings Within Reach at the same time. We currently offer a flat incentive rate per site. Prices don't meet the utility cost test of 1.0. We used updated billing analysis and added a second issue to address, which includes equity in size of homes. We created more parity in the percentage of project costs. Small homes were getting a higher percentage of costs covered than larger homes. Going to a per-square-foot incentive will help with that. We'll take this back to the Trade Ally Stakeholder Group for discussion.

Holly: What does that compare to? Where do they balance out in terms of size of house?

Mark: It may be about 1,000 square feet.

Marshall: We cover in some cases 15-30 percent of costs in the regular program track, but it's up to about 70 percent for Savings Within Reach.

Diane: 1,600 square foot homes fare better in the standard track under the current incentive regime.

Kim: The math comes out to about 1,300 square feet.

Garret: Can the contractor pick the best incentive for the customer?

Marshall: Yes, they can choose.

Charlie: What's missing for me is that I don't have a clue about the CRC cost and levelized cost. I appreciate that you're working with the trade allies, and am unsure what you want from this group.

Kim: The CAC is an advisory group. How much information do you need in order to advise us, and what are you advising on? The topics often are very complex, and we have to make decisions and come here as early as possible; but we're often waiting on evaluations and more data. The information presented here is at a high level, and I don't know what sort of advice you can give us. Maybe a sanity check?

Fred: I appreciate the struggle. But, to clarify, the incentives reside around the utility test and not the total resource test. What incentive will it take to move the market? The cost effectiveness issue is mostly the TRC, which is about the whole cost. The incentives are more driven by feedback from the market-sales trends.

Kim: Many incentives that are going up don't get this much discussion, so you don't get the backup on the commercial and industrial side. Residential changes tend to get more attention.

Wendy: Are you looking for feedback, or just explaining this to us? Don pointed out that the Trade Ally Stakeholder Group addressed the same things. Is it too late to incorporate the feedback? I sense some resistance and defensiveness here.

Peter: We'll be back the next time to answer these questions. If we haven't yet answered them, it moves into 2014 and we'll struggle with it then. I appreciate that this isn't working. This is the first bite, and not the end. The questions are informative. We get that it's self-think, and the frustration we're hearing is illuminating for us. We'll postpone and have another discussion.

Charlie: It would help when you come back to know the volume coming through and what's estimated. When you tweak the dial, what will it do? More context will help us avoid arguing over little things or missing big things.

Peter: We can show some metrics next time.

Scott Inman: On this floor and sealing incentive, basically a 500-square foot home is getting most of the work paid for. I'm guessing that someone in that small home is less likely to be able to afford the work than someone in a larger home. Is the old program reaching more people than the new one would reach?

Marshall: I don't know if you can make that correlation. The moderate income program helps people who don't qualify as low income but can't afford full market price. Looking at smaller houses might feel like we're helping more, but it may not correlate with income.

We will look at assumptions on the baselines in 2014 to adjust in 2015.

Matt Braman: For New Homes and Products, we were aware that refrigerator recycling has a limited lifetime, and that as the pool of older fridges shrinks the stock gets newer. Federal standards changed in 1993. Right now we pay \$40, and will propose two tiers for older and newer than 1993. In 2015 we'll follow the RTF work, and will have an age cutoff. We may be getting closer to the end of the measure's life. Lighting will shift toward top performing, general purpose LEDs. We'll still support CFLs through the Energy Independence and Security Act transition.

5. 2014 draft budget

Peter: There are some hard copies of this presentation available, and the budget will be posted online after this meeting.

Some good news we want to share is that for every \$1 invested, ratepayers get about \$3 back. Companies we work with report they employ 14,000 people related to our work in the marketplace.

We last did strategic planning in 2009, covering 2010- 2014. The new strategic plan for 2015-2012 will have five areas of emphasis and a new goal structure. We have eliminated the range of goals at the request of the utilities in favor of one stretch goal that aligns with utility IRPs. The utilities will file tariffs based on this goal. Our OPUC performance metric is 85 percent of the new, unitary goal.

In 2014 we plan to make things easier, enhance program design, do targeted marketing and outreach, and leverage partnerships with parallel organizations.

The focus will be on specific customers, niches and segments, instead of a broad-based approach. We'll make it easier and target the right audiences by finding partners who are already there and can help us. They operate in the same markets and relate to the same customers already.

2014 budgeted savings are up an average of 8 percent from where we expect to land this year. About 65 percent of electric savings are expected to be in PGE in 2014, and 60 percent of gas savings are expected to be in the core NW Natural efforts in Oregon.

In terms of costs, going into rural areas is expensive, and targeting isn't necessarily a cheaper approach. It's getting harder to get people in the door. Consequently we expect to see about a 10 percent increase in levelized costs.

Wendy Gerlitz: You switched from the two goals to one goal. How do these compare with the old way?

Peter: The single goal is the stretch goal.

Charlie: Are the levelized costs just system costs?

Peter: They are based on everything we propose to spend to reach the savings goal. They are what the proposed \$162 million dollar investment shown on the slide will buy at that unit rate. They do not represent the societal tests.

Looking back over the last few years, we planned through our current strategic plan to double our savings, and we've reached toward that. Intentionally, some sectors grew more than others, but we have experienced growth in every sector. Industrial has seen a jump from nine percent to a 21 percent share. You will see that in 2014 the budget will support growth of about 8.3 percent in gas savings and 7.8 percent in electric savings. As expected, achievement is leveling out. As we tap resource potential, and shift the baselines rise higher.

Starting in 2015, we may see a drop based on the diminishing resource potential. The idea five years ago was to front load our efforts, which is what we did.

We are projecting an increase in spending for 2014 of 16.7 percent. The majority (62 percent) of the increase is in proposed incentive changes. An increase in delivery costs (including internally managed program efforts) accounts for at least another 19 percent of the change. It won't be cheaper to squeeze the rock more tightly.

Jim: Thank goodness for NW Natural helping reach the target. The next goal is 521,000 therms, which is an increase over this year and will be a challenge. Success will be driven by NW Natural.

Peter: With Cascade Natural Gas, it's a small system problem. We literally have seven projects for 2014 that will make all the difference.

Jim: If they come through it will be a 40 percent increase in accomplishments.

Peter: We should and will discuss this further during our utility meeting with Cascade. That meeting is already being scheduled.

The presentation slides show the breakdown by program.

Wendy: A couple of years ago, you noted that differences in the law between collections and spending for residential vs. commercial and industrial may cause you to bump up against a cap. Have we come close to that?

Kim: This issue applies to customers with use greater than one aMW per site. These include larger hospitals, university campuses and industrial sites. We have not triggered the cap yet. We may find that we've triggered it next year. We do not know yet. We'll look again in April, and if we have an issue we'll have to adjust for it in the following year's goals.

Wendy: If you can send that to us as soon as it's ready, it will help.

Jim: The forecast says that the single goal "approximates" the IRP target. I thought it would be set at the IRP level?

Peter: It does hit IRP on the gas side and is very close on the electric side.

Charlie: On the electric side, funding is going up by 10 percent, and we're barely holding in acquisition. I see a flat-line on savings and an increase in incentives. To get more, there needs to be a big change in spending; or can you even get more? Are we maxing out on what we can get?

Margie: We've gotten the easy things. We're facing that question about what we can squeeze out of the rock with the same level of investment.

Peter: We're forecasting a 10 percent increase in cost per unit next year. Our OPUC levelized cost performance metric is 3.9 cents/kWh, and we're still well under that.

Kim: You'll see this in each sector's presentations.

Fred Gordon: We're not just trending things up: we're looking at markets, and that's what we get.

Peter: Even at these costs, we are exhausting some markets. Resource potential needs to be revisited. It may be less than we believe right now. We front-loaded things as part of our plan so it's a good question to ask how long we can hold onto that level, and at what price?

Oliver Kesting walked through specific slides on the budget for the commercial sector. He noted an increase for Cascade, NW Natural and PGE, and a decrease for Pacific Power from 2013. That's due to a bubble in New Buildings for Pacific Power in 2013. Changes are driven by large shifts in the New Buildings pipeline. Cascade Natural Gas drivers are Multifamily, schools and SEM. The big items on our radar for the commercial sector are in the slides.

Juliet: There will be a public process about bundling for whole-building upgrades. The commission will come out with an order about it.

Don: In this context, 2801 refers to all buildings?

Juliet: Yes, it's everything: commercial and residential.

Oliver: We have three programs in commercial, and we are trying for each of them to make it easier to work with us. We're looking at tablet-based apps, redesigning the custom track to minimize customer effort and simple prescriptive incentives where they are needed. SEM will reach more large customers and engage more service providers. There are only two SEM service providers now. SEM for small commercial will be offered.

Charlie: Is there going to be a place for roof-top tune-ups in strategic energy management? It's a market problem, but it may work.

Kim: We're doing it in SEM on the industrial side.

Oliver: We look at RTU opportunities in commercial SEM.

We'll continue targeted outreach, account management, and providing small commercial customers in New Buildings with simple solutions and tiered incentives. We're targeting training for the trade allies and doing a net-zero campaign. We'll offer more training on understanding and selling the business case for energy efficiency. NEEA is also doing some work in this area and we'll coordinate with them. We may issue a request for proposals for additional tool development to build the business case for energy efficiency. We're also looking direct installs for small customers.

We'll continue our collaborations with ODOE and other partners like NEEA, building codes division, American Institute of Architects and Cascadia Green Building Council for training and code compliance support. We'll work with NEEA for the transition to new lighting standards.

Peter: There are detailed program and sector plans on the website that elaborate on these points. In this sector, the changes are large. Gas incentives in this sector have been lagging what we've accomplished in the industrial sector. We now need to catch up in the commercial sector. Increased spending to support this is included in this budget. The economic value equation of payback for the customer had deteriorated, and we needed to step forward. This is also true for lighting, where we are also increasing incentives.

Oliver: The commercial plan that was handed out today was at a high level, and the supporting program information will be shown in more detail online.

Kim: Overarching numbers are shown for industrial. We build from the previous years' goals. We are coming up low in two utility territories now. We close 80 percent of savings in the last four weeks of each year. That's true in Pacific Power territory, but not in Cascade Natural Gas, because we have nothing in our pipeline. What we do next year is a significant ramp up from this year. It's tricky to build industrial goals because of lumpiness. Overall, there's a seven percent increase in both electric and gas in next year's budget.

Half of the electric savings come from custom projects and other significant savings are from SEM and lighting. There's also the last phase of a megaproject in PGE territory in 2014. That helps with 2014 costs in PGE territory. Streamlined industrial represents a small amount of savings but a large market reach, with many smaller customers.

Projects on the gas side are less diverse, with no lighting or megaproject. Small industrial is emphasized on the gas side, along with SEM. There's only one program for the industrial sector. As in the other programs, we spend our money on delivery, technical services, quality control and incentives. Program Delivery Contractors, PDCs, help trade allies by offering training and program assistance in delivering streamlined, prescriptive incentives.

Aside from aligning with the commercial sector on lighting, we are not recommending incentive changes next year, but we may prepare a bonus incentive. We have done this for seven years, excepting 2013, and it grabs everyone's attention. This would have to launch early in the year to have an effect.

Lighting incentive changes came up in July. These are the only measures we deliver jointly with other programs. We all work with Evergreen and try to align our incentives to keep things simple for customers. There is definitely room to raise custom lighting incentives because we mostly work with high bay. We analyzed this and found that incentives only cover 25-30 percent of costs. Other custom incentives cover about 40 percent. We raised the lighting incentives to bring them closer to custom.

We plan more collaboration and are especially engaged with other industrial programs. We have to improve or we get buried. We are making a shift in how we deploy PDCs. Feedback says they are very effective. People in plants don't have time to work on energy projects, so the PDCs support them. We are about to roll this service out to all customers. In the past, the PDCs only covered large customers. We are going to try something new: custom PDC services to small industries. We are putting in more money to leverage more delivery. In the current strategic plan, when we wanted to double savings, we did it through delivery. We will try it with small industries and see what we can do.

We'll leverage PDCs to motivate customers, scope projects, and act as a sales force in a real way. We will combine what we learn from SEM and expand it. We've done the experiments, and need to apply what we learned.

We will look at commercial LED prescriptive incentives. This technology is still tiny for industrial, showing up in parking lots and similar places. Industrial lighting is still about 90 percent high-bay.

Charlie: As for price and efficacy, LEDs are quickly coming down.

Kim: Maybe in a couple of years they will start to catch on.

Peter: We'll see how it plays out in commercial, but adoption could easily be more rapid.

Charlie: They are also easier from a controls standpoint.

Diane: For residential, our 2014 savings are growing everywhere but in Cascade Natural Gas territory. The August 2014 forecast includes the Sunriver project, which will now complete in 2014. Overall 2014 is very similar to the current year, and our 2014 budget aligns with this year's costs. We show about 100,000 therms in NW Natural Washington, and you see a big increase in Pacific Power because of increased lighting. There will be a high bill/user effort with Opower in Pacific Power territory. Gas transformation savings are in the numbers, but not NEEA electric. They are not in the budget shown on the sector slide. The packet has a separate slide on NEEA.

The Aclara effort will probably be pulled in during round two of budget preparations, depending on further conversations with PGE. New Homes in Pacific Power is a very small part of the mix of savings. On the gas side, most of the savings are from Existing Homes.

We want to focus on connecting customers to the right services, target the right customers using CRM tools and empower contractors to be the program representatives. We also plan to emphasize the quality of their installations. Fluid is doing a quality management effort with them. We're planning to bring innovations in retail strategies. NEEA network efforts show an opportunity we can leverage. Their ductless heat pump and heat pump water heater efforts help us. We'll also add more lending allies and tools, and our Savings Within Reach lending product. If it works well, it could be expanded outside Savings Within Reach, but this is the initial test.

A new tool will go live soon to show customers estimated returns and savings based on our deemed savings values. We're planning more online tools, energy savvy referral codes and leveraging collaborations like school outreach by Community Action Partnership of Oregon, CAPO, which links people to Energy Saver Kits. There will be outreach with the Home Performance Guild and with public utilities like Clark PUD in Washington. We plan to increase EPS in Existing Homes and are working on awareness building. We also plan to refine delivery efficiencies.

Juliet: What are you doing with the public utilities?

Diane: We are working with Clark PUD on things like clothes washers, where they can offer clothes washer incentives for gas water heating customers. We pay the incentive to them if they help the customer while they're working with them. It comes out of NW Natural Washington funds.

Scott Inman: How many existing homes now have EPS scores?

Diane: About 1,200 so far, and we are looking to raise awareness.

Scott: The marketing piece for EPS seems very targeted.

Diane: This is our first marketing EPS marketing effort.

Peter: One of the key features of an EPS is having someone with a building science background deliver it; it's not something just anyone can use. We have used the home performance path through the Guild and Clean Energy Works Oregon to market test it. There's new legislation to extend it statewide, and Warren Cook of ODOE is leading the writing of the rules related to this.

Diane: Energy Saver Kits will be limited, and we will look for other ways to gain savings. We are planning on pilots, also.

Mark: No air sealing for floors or walls?

Diane: They are still in our specs, and we want to find out where contractors are failing so we can work on quality control with them. The prescriptive duct sealing pilot will continue. The Savings Within Reach loan product will be out soon. We are looking at early retirement for windows, mobile homes and other measures.

Peter: Our next steps will include more detailed information on the website. We do have some challenges: on the business side we are still hoping for capital spending increases. We are having issues maintaining the range of measures for some programs, sectors and customer subsets. We are driving toward a big solution in October for gas cost effectiveness. There are some speed-of-acceptance issues: LEDs got ahead of us, but on appliance tiers, we jumped ahead. We need to decide if we really have saturated certain customer segments. Those are the overarching challenges.

The breakouts by program and utility are already posted. The board will see this at a higher level on November 6, the OPUC public workshop is on November 13, and we'll also offer a webinar. We'll have CAC and RAC updates on November 20, and another OPUC meeting on November 26. All public comments are due on November 27. We'll gather them, finalize our version of the budget and take all of it to the board. The earlier you can get comments to us, the better. It allows us to incorporate comments before the next time we come back to you.

We'll restart our next cycle of strategic planning in 2014. The draft will be available by about June, for the strategic planning board meeting. We will also discuss the draft at RAC and CAC meetings.

Fred: It's usually the subject of the board retreat, and will typically come through here.

Peter: It will come through here, and your participation is key. The signup for email updates is on our website, and I encourage you to sign up.

Don: As Juliet said, and Peter reiterated, Energy Trust and the OPUC are driving toward cost effectiveness solutions. There will also be a panel at the upcoming Home Performance Conference on October 29, at the Ambridge Event Center.

Mark Kendall: So, you need comments in the next two and one-half weeks?

Peter: That would be best.

Jim: Just a reminder that our budgeted savings are up by 30 percent in Cascade Natural Gas, and we need to discuss it. We may need to touch base before the meeting on November 13.

Peter: If you propose some times, we can do it. We can change the goals if we need to.

Jim: We've been looking at dollars, rather than therms. Now that we're looking at therms, we need to discuss it.

Diane: Jeremy from WISE needed to leave, but wanted me to share his comments: "As you work on program design, please continue to pay customers and contractors more quickly."

6. Meeting adjournment

Kim thanked everyone for their participation and adjourned the meeting at 5:00 p.m. The next full council meeting is November 20, 2013.

Glossary of Energy Industry Terms

Glossary provided to the Energy Trust Board of Directors for general use. Definitions and acronyms are compiled from a variety of resources. Energy Trust policies on topics related to any definitions listed below should be referenced for the most up-to-date and comprehensive information. Last updated May 2013.

Above-Market Costs of New Renewable Energy Resources

The portion of the net present value cost of producing power (including fixed and operating costs, delivery, overhead and profit) from a new renewable energy resource that exceeds the market value of an equivalent quantity and distribution (across peak and off-peak periods and seasonally) of power from a non-differentiated source, with the same term of contract. Energy Trust board policy specified the methodology for calculating above-market costs.

Aggregate

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

Air Sealing (Infiltration Control)

Conservation measures, such as caulking, better windows and weatherstripping, which reduce the amount of cold air entering or warm air escaping from a building.

Ampere (Amp)

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

Anaerobic Digestion

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

Average Megawatt (aMW)

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

Avoided Cost

(Regulatory) The amount of money that an electric utility would need to spend for the next increment of electric generation they would need to either produce or purchase if not for the reduction in demand due to energy-efficiency savings or the energy that a co-generator or small-power producer provides. Federal law establishes broad guidelines for determining how much a qualifying facility (QF) gets paid for power sold to the utility.

Base Load

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

Benefit/Cost Ratios

By law, Oregon public purpose funds may be invested only in cost-effective energy-efficiency measures—that is, efficiency measures must cost less than acquiring the energy from conventional sources, unless exempted by the OPUC.

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

Biomass

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

Biomass Gas

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

Blower Door

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

British Thermal Unit

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

Cogeneration (Combined Heat & Power or CHP)

The sequential production of electricity and useful thermal energy, often by the recovery of reject heat from an electric generating plant for use in industrial processes, space or water heating applications. Conversely, may occur by using reject heat from industrial processes to power an electricity generator.

Compact Fluorescent Light Bulbs (CFL)

CFLs combine the efficiency of fluorescent lighting with the convenience of a standard incandescent bulb. There are many styles of compact fluorescent, including exit light fixtures and floodlights (lamps containing reflectors). Many screw into a standard light socket, and most produce a similar color of light as a standard incandescent bulb.

CFLs come with ballasts that are electronic (lightweight, instant, no-flicker starting, and 10–15 percent more efficient) or magnetic (much heavier and slower starting). Other types of CFLs include adaptive circulation and PL and SL lamps and ballasts. CFLs are designed for residential uses; they are also used in table lamps, wall sconces, and hall and ceiling fixtures of hotels, motels, hospitals and other types of commercial buildings with residential-type applications.

Conservation

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

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

Cost Effective

Not specifically defined in SB 1149. The OPUC has a definition which refers to a definition from ORS 469.631 (4) stating that an energy resource, facility or conservation measure during its life cycle results in delivered power costs to the ultimate consumer no greater than the comparable incremental cost of the least-cost alternative new energy resource, facility or conservation measure. Cost comparison under this definition shall include but not be limited to: (a) cost escalations and future availability of fuels; (b) waste disposal and decommissioning cost; (c) transmission and distribution costs; (d) geographic, climatic and other differences in the state; and (e) environmental impact. ORS 757.612 (4) (SB 1149) exempts utilities from the requirements of ORS 469.631 to 469.645 when the public purpose charge is implemented.

By law, Oregon public purpose funds may be invested only in cost-effective energy-efficiency measures—that is, efficiency measures must cost less than acquiring the energy from conventional sources, unless exempted by the OPUC.

Cumulative Savings

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

Decoupling

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

Direct Access

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

Economizer Air

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

Energy Management System (EMS)

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

ENERGY STAR®

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

Energy Use Intensity (EUI)

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

Environmental Protection Agency (EPA)

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

Evaluation

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

Feed-in Tariff

A renewable energy policy that typically offers a guarantee of payments to project owners for the total amount of renewable electricity they produce; access to the grid; and stable, long-term contracts.

Footcandle

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

Free Rider

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

Geothermal

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

Green Tags (Renewable Energy Credits or RECs)

A Green Tag is a tradable commodity that represents the contractual rights to claim the environmental attributes of a certain quantity of renewable electricity. For wind farms, the environmental attributes include the reductions in emissions of pollutants and greenhouse gases that result from the delivery of the wind-generated electricity to the grid.

Here's how emission reductions occur: When wind farms generate electricity, the grid operators allow that electricity to flow into the grid because it is less expensive to operate, once it has been built, than generators that burn fossil fuels. But the electricity grid cannot have more electricity flowing into it than is flowing out to electricity users, so the grid operators have to turn down other generators to compensate. They generally turn down those that burn fossil fuels. By forcing the fossil fuel generators to generate less electricity, wind farms cause them to generate

fewer emissions of pollutants and greenhouse gases. These reductions in emissions are the primary component of Green Tags.

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

Green Tags are bought and sold every day in the electricity market. Tens of millions of dollars in Green Tags are under contract today. They are measured in units, like electricity. Each kilowatt hour of electricity that a wind farm produces also creates a one-kilowatt hour Green Tag. Wind farm owners may sell Green Tags to other purchasers, remote or local, to obtain the extra revenues they need for their wind farms to be economically viable.

Gross Savings

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

Heat Pump

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

Heating, Ventilation and Air Conditioning (HVAC)

The mechanical systems that provide thermal comfort and air quality in an indoor space are often grouped together because they are generally interconnected. HVAC systems include: central air conditioners, heat pumps, furnaces, boilers, rooftop units, chillers and packaged systems.

Hydroelectric Power (Hydropower)

The generation of electricity using falling water to turn turbo-electric generators.

Incremental Annual Savings

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

Incremental Cost

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

Instant-savings Measure (ISM)

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

Integrated Resources Planning (Least-Cost Planning)

A power-planning strategy that takes into account all available and reliable resources to meet current and future loads. This strategy is employed by each of the utilities served by Energy Trust, and for the region's electric system by the Northwest Power and Conservation Council.

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

Interconnection

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

Joule

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

Kilowatt

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

Large Customers (with reference to SB 838)

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

Least Cost

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

Levelized Cost

The level of payment necessary each year to recover the total investment and interest payments (at a specified interest rate) over the life of the measure.

Local Energy Conservation

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

Low-income Weatherization

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

Lumen

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

Lumens/Watt

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

Market Transformation

Lasting structural or behavioral change in the marketplace and/or changes to energy codes and equipment standards that increases the adoption of energy-efficient technologies and practices. Market transformation is defined in the Oregon Administrative Rules.

Megawatt

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

Megawatt Hour

One-thousand kilowatt hours, or an amount of electrical energy that would supply 1,370 typical homes in the Western U.S. for one month. (This is a rounding up to 8,760 kWh/year per home based on an average of 8,549 kWh used per household per year [U.S. DOE EIA, 1997 annual per capita electricity consumption figures]).

Methane

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

Monitoring, Targeting and Reporting (MT&R)

A systematic approach to measure and track energy consumption data by establishing a baseline in order to establish reduction targets, identify opportunities for energy savings and report results.

Municipal Solid Waste

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

Net Metering

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

Net-to-Gross

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

Net Savings

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

Nondifferentiated Source (Undifferentiated Source)

Power available from the wholesale market or delivered to retail customers.

Non-energy Benefit (NEB)

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

Path to Net Zero Pilot (PTNZ)

The Path to Net Zero pilot was launched in 2009 by Energy Trust's New Buildings program to provide increased design, technical assistance, construction, and measurement and reporting incentives to commercial building projects that aimed to achieve exceptional energy performance. Approximately 13 buildings worked with New Buildings to develop strategies to save 60 percent more energy than Oregon's already stringent code through a combination of 50 percent energy efficiency and 10 percent renewable power. The pilot demonstrates that a wide range of buildings can achieve aggressive energy goals using currently available construction methods and technology, as well as by testing innovative design strategies.

Photovoltaic

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

Public Utility Commissions

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

Public Utility Regulatory Act of 1978 (PURPA)

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

Qualifying Facility (QF)

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

Renewable Energy Resources

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

Renewable Portfolio Standard

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

Retrofit

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

Roof-top Units (RTU)

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

R-Value

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

SB 1149

The Oregon legislation enacted in 1999 allowing for the creation of a third party, nonprofit organization to receive approximately 74 percent of a 3 percent utility surcharge (public purpose charge) and deliver energy-efficiency and renewable energy programs to the funding Oregon ratepayers of Portland General Electric and Pacific Power. Energy Trust was approved by the OPUC to deliver the services. The rest of the surcharge is distributed to school districts and Oregon Housing and Community Services.

SB 838

SB 838, enacted in 2007, augmented Energy Trust's mission in many ways. Most prominently, it provided a vehicle for additional electric efficiency funding for customers under 1 aMW in load, and restructured the renewable energy role to focus on generation plants that produce less than 20 aMW. SB 838 is also the legislation creating the state's Renewable Portfolio Standard and extended Energy Trust's sunset year from 2012 to 2026.

SBW Consulting, Inc

A consulting firm based in Bellevue, WA, with expertise in facility energy assessments, utility conservation programs and program evaluations.

Sectors

For energy planning purposes, the economy is divided into four sectors: residential, commercial, industrial and irrigation.

Self-Directing Consumers

A retail electricity consumer that has used more than one average megawatt of electricity at any one site in the prior calendar year or an aluminum plant that averages more than 100 average megawatts of electricity use in the prior calendar year, that has received final certification from the Oregon Department of Energy for expenditures for new energy conservation or new renewable energy resources and that has notified the electric company that it will pay the public purpose charge, net of credits, directly to the electric company in accordance with the terms of the electric company's tariff regarding public purpose credits.

Societal Cost

Similar to the total resource cost as including the full cost to install a measure including equipment, labor and Energy Trust cost to administer and deliver the program, societal cost also includes any costs beyond those realized by the participant and Energy Trust associated with the energy-saving project. Typically additional societal benefits are seen with energy-efficiency projects that can be difficult to quantify and include in the Societal Cost Test for cost effectiveness.

Solar Power

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

Solar Thermal

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

Spillover

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

Therm

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

Total Resource Cost

The OPUC has used the "total resource cost" (TRC) test as the primary basis for determining conservation cost-effectiveness as determined in Order No. 94-590 (docket UM 551). SB 1149 allows the "self-directing consumers" to use a simple payback of one to 10 years as the cost-effectiveness criterion.

Tidal Energy

Energy captured from tidal movements of water.

U-Value (U-Factor)

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

Wave Energy

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

Watt

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

Wind Power

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

Weatherization

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

Energy Industry Acronyms

AAMA	American Architectural Manufacturers Association	Trade group for window, door manufacturers
A/C	Air Conditioning	
ACEEE	American Council for an Energy-Efficient Economy	Environmental Advocacy, Researcher
AEE	Association of Energy Engineers	
AEO	Annual Energy Outlook	
AESP	Association of Energy Services Professionals	Energy services and energy efficiency trade org
A+E	Architecture + Energy	Outreach program for architects
AFUE	Annual Fuel Utilization Efficiency	The measure of seasonal or annual efficiency of a furnace or boiler
AgriMet	Agricultural Meteorology	Program for soil moisture data
AIA	American Institute of Architects	Trade organization
AIC	Association of Idaho Cities	Local government organization
aMW	Average Megawatt	A way to equally distribute annual energy over all the hours in one year; there are 8,760 hours in a year
AOI	Associated Oregon Industries	
APEM	Association of Professional Energy Managers	
ARI	Air-Conditioning and Refrigeration Institute	AC trade association
ASE	Alliance to Save Energy	Environmental advocacy organization
ASERTTI	Association of State Energy Research and Technology Transfer Institutions, Inc.	
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers	Technical (engineers) association
ASME	American Society of Mechanical Engineers	Professional organization
ASiMi	Advanced Silicon Materials LLC	Manufacturer of polysilicon with plants in Moses Lake and Butte Mountain
AWC	Association of Washington Cities	Local government trade organization
BACT	Best Achievable Control Technology	
BCR	Benefit/Cost ratio	See definition in text
BEF	Bonneville Environmental Foundation	Nonprofit that funds renewable energy projects
BETC	Business Energy Tax Credit	Oregon tax credit
BOC	Building Operator Certification	Alliance funded project that trains and certifies building operators
BOMA	Building Owners and Managers Association	
BPA	Bonneville Power Administration	Federal power authority
C&RD	Conservation & Renewable Discount	BPA program
CAC	Conservation Advisory Council	

CARES	Conservation and Renewable Energy System	Defunct consortium of Pacific Northwest PUDs
CCS	Communications and Customer Service	A group within Energy Trust
CCCT	Combined Cycle Combustion Turbine	
CEE	Consortium for Energy Efficiency	National energy efficiency group
CEWO	Clean Energy Works Oregon	
CFL	Compact Fluorescent Light bulb	
CHP	Combined Heat and Power	
CNG	Cascade Natural Gas	Investor-owned utility
ConAug	Conservation Augmentation Program	BPA program
CHT	Coefficient of Heat Transmission (U-Value)	A value that describes the ability of a material to conduct heat. The number of Btu that flow through 1 square foot of material, in one hour. It is the reciprocal of the R-Value (U-Value = 1/R-Value).
COU	Consumer-Owned Utility	
COP	Coefficient of Performance	The Coefficient of Performance is the ratio of heat output to electrical energy input for a heat pump
CT	Combustion Turbine	
CUB	Citizens' Utility Board of Oregon	Public interest group
Cx	Commissioning	
DG	Distributed Generation	
DSI	Direct Service Industries	Direct Access customers to BPA
DOE	Department of Energy	Federal agency
DSM	Demand Side Management	
EA	Environmental Assessment	
EASA	Electrical Apparatus Service Association	Trade association
ECM	Electrically Commutation Motor	An Electrically Commutation Motor, also known as a variable-speed blower motor, can vary the blower speed in accordance with the needs of the system
EE	Energy Efficiency	
EER	Energy Efficiency Ratio	The cooling capacity of the unit (in Btu/hour) divided by its electrical input (in watts) at standard peak rating conditions
EF	Energy Factor	An efficiency ratio of the energy supplied in heated water divided by the energy input to the water heater
EIA	Energy Information Administration	
EIC	Energy Ideas Clearinghouse	Washington State University program that provides energy-efficiency information, Alliance funded project
EMS	Energy Management System	See definition in text

EPA	Environmental Protection Agency	Federal agency
EPRI	Electric Power Resource Institute	Utility organization
EPS	Energy Performance Score	Brand name used by Energy Trust for the rating that assesses a newly built or existing home's energy use, carbon impact and estimated monthly utility costs
EQIP	Environmental Quality Incentive Program	
EREN	Energy Efficiency and Renewable Energy Network	DOE program
ESS	Energy Services Supplier	
EUI	Energy Use Intensity	See definition in text
EWEB	Eugene Water & Electric Board	Utility organization
FCEC	Fair and Clean Energy Coalition	Environmental advocacy organization
FEMP	Federal Energy Management Program	
FERC	Federal Energy Regulatory Commission	Federal regulator
GHG	Greenhouse gas	
HER	Home Energy Review	A free visit to a customer's home by an Energy Trust energy advisor to assess efficiency and provide personalized recommendations for improvement
HSPF	Heating Season Performance Factor	
HVAC	Heating, Ventilation and Air Conditioning	
ICNU	Industrial Consumers of Northwest Utilities	Trade interest group
ICF	ICF International	Existing Buildings Program Management Contractor
ICL	Institute for Conservation Leadership	
IDWR	Idaho Department of Water Resources	State agency
IEEE	Institute of Electrical and Electronic Engineers	Professional association
IESNA	Illuminating Engineering Society of America	
IOU	Investor-Owned Utility	
IRP	Integrated Resource Plan	
ISIP	Integrated Solutions Implementation Project	
ISM	Instant-Savings Measure	See definition in text
kW	Kilowatt	
kWh	Kilowatt Hours	8,760,000 kWh = 1 aMW
LBL	Lawrence Berkeley Laboratory	
LED	Lighting Emitting Diode	Solid state lighting technology
LEED	Leadership in Energy & Environmental Design	Building rating system from the U.S. Green Building Council
LIHEAP	Low Income Housing Energy Assistance Program	
LIWA	Low Income Weatherization Assistance	
LOC	League of Oregon Cities	Local government organization

MEEA	Midwest Energy Efficiency Alliance	Midwest Market Transformation organization, Alliance counterpart
MLCT	Montana League of Cities and Towns	Local government organization
MLGEO	Montana Local Government Energy Office	Local government organization
MT&R	Monitoring, Targeting and Reporting	See definition in text
MW	Megawatt	Unit of electric power equal to one thousand kilowatts
MWh	Megawatt Hour	Unit of electric energy, which is equivalent to one megawatt of power used for one hour
NAHB	National Association of Home Builders	Trade association
NCBC	National Conference on Building Commissioning	
NEB	Non-Energy Benefit	See definition in text
NEEA	Northwest Energy Efficiency Alliance	
NEEC	Northwest Energy Efficiency Council	Trade organization
NEEI	Northwest Energy Education Institute	Training organization
NEEP	Northeast Energy Efficiency Partnership	Northwest market transformation organization, Alliance counterpart
NEMA	National Electrical Manufacturer's Association	Trade organization
NERC	North American Electricity Reliability Council	
NFRC	National Fenestration Rating Council	
NRC	National Regulatory Council	Federal regulator
NRCS	Natural Resources Conservation Service	
NRDC	Natural Resources Defense Council	
NREL	National Renewable Energy Lab	
NRTA	Northwest Regional Transmission Authority	
NWEC	Northwest Energy Coalition	Environmental advocacy organization
NWBOA	Northwest Building Operators Association	Trade organization
NWFPA	Northwest Food Processors Association	Trade organization
NWN	NW Natural	Investor-owned utility
NWPPA	Northwest Public Power Association	Trade organization
NWPCC	Northwest Power and Conservation Council	Regional energy planning organization, "the council"
NYSERDA	New York State Energy Research & Development Authority	New York public purpose organization
OBA	Oregon Business Association	Business lobby group
OEFS	Oregon Energy Facility Siting Council	Authority to site energy facilities in Oregon
ODOE	Oregon Department of Energy	Oregon state energy agency
OPUC	Oregon Public Utility Commission	
OPUDA	Oregon Public Utility District Association	Utility trade organization
OPEC	Organization of Petroleum Exporting Countries	

ORECA	Oregon Rural Electric Cooperative Association	Utility trade organization
OSD	Office of Sustainable Development	
OSEIA	Solar Energy Industries Association of Oregon	Volunteer nonprofit organization dedicated to education/promotion
OTED	Office of Trade & Economic Development	Washington State agency
P&E	Planning and Evaluation	A group within Energy Trust
PDC	Program Delivery Contractor	Company contracted with Energy Trust to identify and deliver industrial and agricultural services to Energy Trust customers
PEA	Pacific Energy Associates	
PECI	Portland Energy Conservation, Inc.	Energy Trust Program Management Contractor
PGE	Portland General Electric	Investor-owned utility
PG&E	Pacific Gas & Electric	California investor-owned utility
PMC	Program Management Contractor	Company contracted with Energy Trust to deliver a program
PNGC	Pacific Northwest Generating Cooperatives	
PNUCC	Pacific Northwest Utilities Conference Committee	
PPC	Public Power Council	National trade group
PPL	Pacific Power	
PSE	Puget Sound Energy	Investor-owned utility
PTC	Production Tax Credit	
PTCS	Performance Tested Comfort Systems	Alliance project that promotes the efficiency of air-systems in residential homes
PTNZ	Path to Net Zero pilot	See definition in text
PUC	Public Utility Commission	Oregon and Idaho PUCs
PUD	Public Utility District	
PURPA	Public Utility Regulatory Policies Act	See definition in text
QF	Qualifying Facility	
RAC	Renewable Energy Advisory Council	
RE	Renewable Energy	
REIT	Real Estate Investment Trust	
RETC	Residential Energy Tax Credit	Oregon tax credit
RFI	Request for Information	
RFP	Request for Proposal	
RFQ	Request for Qualification	
RNP	Renewable Northwest Project	Renewable energy advocacy group
RSES	Refrigeration Service Engineers Society	Trade association
RTF	Regional Technical Forum	BPA funded research group
RTU	Rooftop HVAC Unit Tune Up	Rooftop HVAC unit tune up, an Existing Buildings incentive offering

SCCT	Single Cycle Combustion Turbine	
SCL	Seattle City Light	Public utility
SEED	State Energy Efficient Design	Established in 1991, requires all state facilities to exceed the Oregon Energy Code by 20 percent or more
SEER	Seasonal Energy Efficiency Ratio	A measure of cooling efficiency for air conditioners; the higher the SEER, the more energy efficient the unit
SGC	Super Good Cents	Alliance project & legacy BPA & utility program that promotes the sales of SGC homes
SIS	Scientific Irrigation Scheduling	Agricultural information program
SNOPUD	Snohomish Public Utility District	Washington State PUD
SEIA	Solar Energy Industries Association	Volunteer nonprofit organization dedicated to education/promotion
SWEET	Southwest Energy Efficiency Partnership	Southwest market transformation group, Alliance counterpart
T&D	Transmission & Distribution	
TNS	The Natural Step	
TRC	Total Resource Cost	See definition in text
TXV	Thermal Expansion Valve	
	University of Oregon Solar Monitoring Laboratory	Solar resource database
U-Value		The reciprocal of R-Value; the lower the number, the greater the heat transfer resistance (insulating) characteristics of the material
USGBC	U.S. Green Building Council	Sustainability advocacy organization responsible for LEED
VFD	Variable Frequency Drive	An electronic control to adjust motion
WAPUDA	Washington Public Utility District Association	Utility trade organization
WNP	Washington Nuclear Power Plant	
WPPSS	Washington Public Power Supply System	Also called "whoops"
WUTC	Washington Utilities and Transportation Commission	
Wx	Weatherization	
W	Watt	