

# Board Meeting Minutes—124th Meeting

November 6, 2013

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**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

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

## General Public Comments

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There were no public comments.

## Consent Agenda

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*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

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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**

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### ***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**

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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**

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### ***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<sub>AC</sub> to 5 MW<sub>AC</sub>. 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<sub>DC</sub> or 5.0 MW<sub>AC</sub>. 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 REC's 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<sub>AC</sub>, 2 MW<sub>DC</sub>. 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<sub>DC</sub> (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<sub>DC</sub>.**
- 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**

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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.

/S/ Alan Meyer

Alan Meyer, Secretary