EVERGREEN ECONOMICS

Report to Legislative Assembly on Public Purpose Expenditures

January 2013 – December 2014

Final 2-Year Report

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Acknowledgements

Steve Grover was the Evergreen Economics project director for this analysis, and John Boroski was the project manager. Questions regarding this report should be directed to Mr. Boroski at Boroski@evergreenecon.com. Other Evergreen Economics staff contributing to this report were Sarah Monohon and John Cornwell.

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1 Executive Summary

1.1 Introduction

In July 1999, Senate Bill 1149 (SB 1149) was enacted to introduce competition into Oregon's electricity markets within the Portland General Electric (PGE) and PacifiCorp service territories.[1] As part of SB 1149, these utilities were required to collect a 3 percent charge on their retail electricity sales beginning in March 2002. This public purpose charge (PPC) is used to fund cost-effective energy conservation and the above-market costs of renewable energy resources and to help provide weatherization and other energy assistance to low-income households and public schools.

Oregon has a 30-year history of using ratepayer funding for conservation and renewable programs prior to SB 1149. Before 2002, utilities administered conservation programs using ratepayer funds. Under SB 1149, programs are still funded by ratepayers (through the public purpose charge) but responsibility for running these programs was transferred to Energy Trust of Oregon. The administrators of the various programs funded with the public purpose charge are:

- **Energy Trust of Oregon, Inc**. The non-profit Energy Trust began administering funds in March 2002 and seeks to develop and implement programs that promote energy conservation, lower the costs of renewable energy resource system installations and transform markets to efficient products and services in the service areas of Portland General Electric and PacifiCorp. Energy Trust receives 73.8 percent of the available public purpose charge funds; 56.7 percent is dedicated to conservation programs and 17.1 percent is dedicated for renewable energy projects.

- **School Districts**. Oregon has 112 school districts within PGE and PacifiCorp service territories. The districts collectively receive 10 percent of public purpose charge funds to improve energy efficiency in individual schools. Prior to June 2011, when House Bill 2960 (HB 2960) was passed, these funds were distributed to 16 Educational Service Districts.

- **Oregon Housing and Community Services**. Oregon Housing and Community Services (OHCS) receives and administers public purpose charge funds for two low-income housing programs. Four and one-half percent of the public purpose charge funds are dedicated to low-income housing development projects in the PGE and PacifiCorp service areas; these projects involve construction of new housing or rehabilitation of existing housing for low-income families through the OHCS Housing Trust Fund. OHCS operates two weatherization programs, and an additional 11.7 percent of the total PPC funds collected are allocated for the weatherization of dwellings of low-income residents in the PGE and PacifiCorp service areas. One program provides home

[1] SB 1149, which specifically addresses the public purpose charge, is codified in ORS 757.600, et. seq. ORS 757.612.

weatherization (for single- and multi-family, owner occupied, and rental housing) and the other provides for weatherization of affordable multi-family rental housing through the OHCS Housing Division.

In addition to projects conducted by these agencies, large commercial and industrial customers can implement their own energy conservation or renewable energy projects. These "self-direct" customers can then deduct the cost of projects from the conservation and renewable resource development portion of their public purpose charge obligation to utilities.

In August 2014, the Oregon Department of Energy (ODOE) and the Oregon Public Utility Commission (OPUC) hired Evergreen Economics to prepare a report to the Oregon Legislature documenting PPC receipts and expenditures in compliance with ORS 757.617(1)(a). Specifically, Evergreen Economics

- Documented PPC disbursements to each agency by PGE and PacifiCorp;
- Demonstrated how each agency utilized funds;
- Summarized important project accomplishments; and
- Documented administrative costs using a common cost definition across agencies.

This report does not attempt to evaluate how well the various PPC programs are being implemented, nor have we attempted to independently verify the energy savings accomplishments reported by the PPC fund administrators. These issues are usually addressed through formal third-party program evaluations such as those currently being performed for the Energy Trust of Oregon programs.

1.2 Receipt and Expenditure Summary

Table 1 shows PPC fund disbursements to the various administrators and programs for the January 1, 2013 – December 31, 2014 period. The far right column of the table lists the level of expenditure for these funds over the same period, and shows that expenditures were similar to disbursements for most programs. As shown at the bottom of the table, PPC expenditures totaled $164,266,828 across all fund administrators. Administrative costs for agencies receiving the PPC funds totaled $9,083,119, or 5.53 percent of all expenditures during this period.

Table 1: PPC Disbursements and Expenditures (1/2013 – 12/2014)

	Disbursement Source			Expenditure
Fund Administrator / Program	**PGE**	**PacifiCorp**	**Total**	**Total**
Energy Trust of Oregon				
Conservation	$55,226,127	$41,368,501	$96,594,628	$82,694,307
Renewable Energy	$16,220,493	$11,694,649	$27,915,142	$20,259,158
Administrative Expenses				$7,896,283
School Districts	$10,442,330	$7,367,061	$17,809,391	$21,748,459
ODOE Program Expenses				$472,481
Administrative Expenses				$235,224
Oregon Housing and Community Services				
Low-Income Weatherization*	$12,217,529	$8,624,778	$20,842,307	$16,185,403
Low-Income Housing	$4,699,050	$3,317,323	$8,016,373	$5,784,026
Administrative Expenses				$772,823
Evaluation, Training, Technical Assistance				$447,952
Energy Education				$1,484,126
Self-Direct Customers**				
Conservation	$3,578,865	$139,384	$3,718,249	$3,718,249
Renewable Energy	$1,478,580	$826,110	$2,304,690	$2,304,690
ODOE Program Expenses				$84,859
Administrative Expenses				$178,790
Totals	**$103,862,974**	**$73,337,806**	**$177,200,780**	**$164,266,828**
Administrative Costs Only				**$9,083,119**

* Low-Income Weatherization includes the ECHO program and the Low-Income Weatherization Program (for multi-family rental housing).
** The amounts listed for Self-Direct represent public purpose charges retained and spent by the participating sites in lieu of making payments to the utilities.

Table 2 summarizes the expenditures and results for PPC expenditures from January 2013 through December 2014. The agencies spent a combined total of $164,266,828 on programs and projects completed during this period. Annual energy savings and renewable resource generation achieved from projects completed during this time reached 1,273,754,144 kWh (over 145 MWa). When all fuel types are included in addition to electricity, PPC expenditures resulted in annual savings of 4,432,704 million Btu (MBtu), which is enough to serve approximately 44,300 homes.[2]

[2] Calculated using ODOE's estimate that each home uses 100 Mbtu per year on average.

Table 2: Summary of PPC Expenditures and Results (1/2013 – 12/2014)

		Results		
Agency / Program	**Expenditures**	**kWh Saved or Generated**	**MWa**	**MBtu**
Energy Trust – Conservation*	$89,116,597	474,682,602	54.19	1,619,617
Energy Trust – Renewables**	$21,733,151	43,486,416	4.96	148,376
School Districts***	$22,456,163	6,620,960	0.76	109,139
OHCS Low-Income******	$24,674,330	10,929,229	1.25	37,292
Self-Direct Customers*******	$6,286,587	738,034,937	84.25	2,518,280
Total Expenditures	**$164,266,828**	**1,273,754,144**	**145.41**	**4,432,704**

* Energy saved excludes savings from reduced transmission and distribution losses. Schools Projects savings of 218,426 kWh have been subtracted from Energy Trust – Conservation savings to prevent double counting, since both Energy Trust and the School Districts support this effort and therefore include the savings in their reports. Energy Trust delivers additional savings to PGE and PacifiCorp through funding authorized under SB 838, and to NW Natural and Cascade Natural Gas under the terms of a stipulation with the OPUC. Energy Trust reports total savings for all expenditures to the OPUC.

** Renewable energy generation is from currently operational projects.

***MBtu for School Districts includes savings from electricity, natural gas, and other fuels.

**** Expenditures for the OHCS Low-Income program include expenditures from the Housing Trust Fund, which does not track energy savings for its projects.

***** Expenditures listed for Self-Direct represent public purpose charges retained and spent by the participating sites in lieu of making payments to the utilities.

2 Public Purpose Charge (PPC) Overview

2.1 Introduction

In July 1999, Senate Bill 1149 (SB 1149) was enacted to introduce competition into Oregon's electricity markets within the Portland General Electric (PGE) and PacifiCorp service territories.[3] As part of SB 1149, these utilities were required to collect a 3 percent charge on their retail electricity sales beginning in March 2002. This public purpose charge (PPC) is used to fund cost-effective energy conservation and the above-market costs of renewable energy resources and to help provide weatherization and other energy assistance to low-income households and public schools.

In August 2014, the Oregon Department of Energy (ODOE) and the Oregon Public Utility Commission (OPUC) hired Evergreen Economics to prepare a report to the Oregon Legislature documenting PPC receipts and expenditures in compliance with ORS 757.617(1)(a). Specifically, Evergreen Economics

- Documented PPC disbursements to each agency by PGE and PacifiCorp;
- Demonstrated how each agency utilized funds;
- Summarized important project accomplishments; and
- Documented administration costs using a common cost definition across PPC administrators.

The remainder of this section provides an overview of the total PPC funds collected and disbursed from January 2013 through December 2014. Additional detail on how each organization utilized funds is provided in subsequent sections.

2.2 PPC Fund Distribution

The PPC funds are collected and distributed across several organizations for administration of energy conservation and renewable energy programs:

- **Energy Trust of Oregon, Inc.** The non-profit Energy Trust began administering funds in March 2002; Energy Trust seeks to develop and implement programs that promote energy conservation, lower the costs of renewable energy resource system installations and transform markets to efficient products and services within the service areas of PGE and PacifiCorp. Energy Trust receives 73.8 percent of the available PPC funds (56.7 percent dedicated to conservation programs and 17.1 percent for renewable energy projects).

[3] SB 1149 is codified in ORS 757.600, et. Seq. ORS 757.612 specifically addresses the public purpose charge.

- **School Districts**. Oregon has 112 school districts within PGE and PacifiCorp service territories. The districts collectively receive 10 percent of PPC funds to improve energy efficiency in individual schools. Prior to June 2011, when HB 2960 was passed, these funds were distributed to 16 Educational Service Districts.

- **Oregon Housing and Community Services.** Oregon Housing and Community Services (OHCS) receives and administers PPC funds for two low-income housing programs. Four and one-half percent of the PPC funds are dedicated to low-income housing development projects in the PGE and PacifiCorp service areas. These projects involve construction of new housing or rehabilitation of existing housing for low-income families through the OHCS Housing Trust Fund. OHCS operates two weatherization programs, and an additional 11.7 percent of the total PPC funds collected are allocated for the weatherization of dwellings of low-income residents in the PGE and PacifiCorp service areas. One program provides home weatherization (for single- and multi-family, owner occupied, and rental housing) and the other provides for weatherization of affordable multi-family rental housing through the OHCS Housing Division.

In addition to projects conducted by these agencies, large commercial and industrial customers can implement their own energy conservation or renewable energy projects. These "self-direct" customers can then deduct the cost of projects from the conservation and renewable resource development portion of their PPC obligation to utilities.

Figure 1 shows how total PPC funds were allocated across administrators from January 2013 through December 2014 (see Table 4 for detailed utilities disbursements).

Figure 1: PPC Fund Allocation by Administrator and Program (1/2013 – 12/2014) [4]

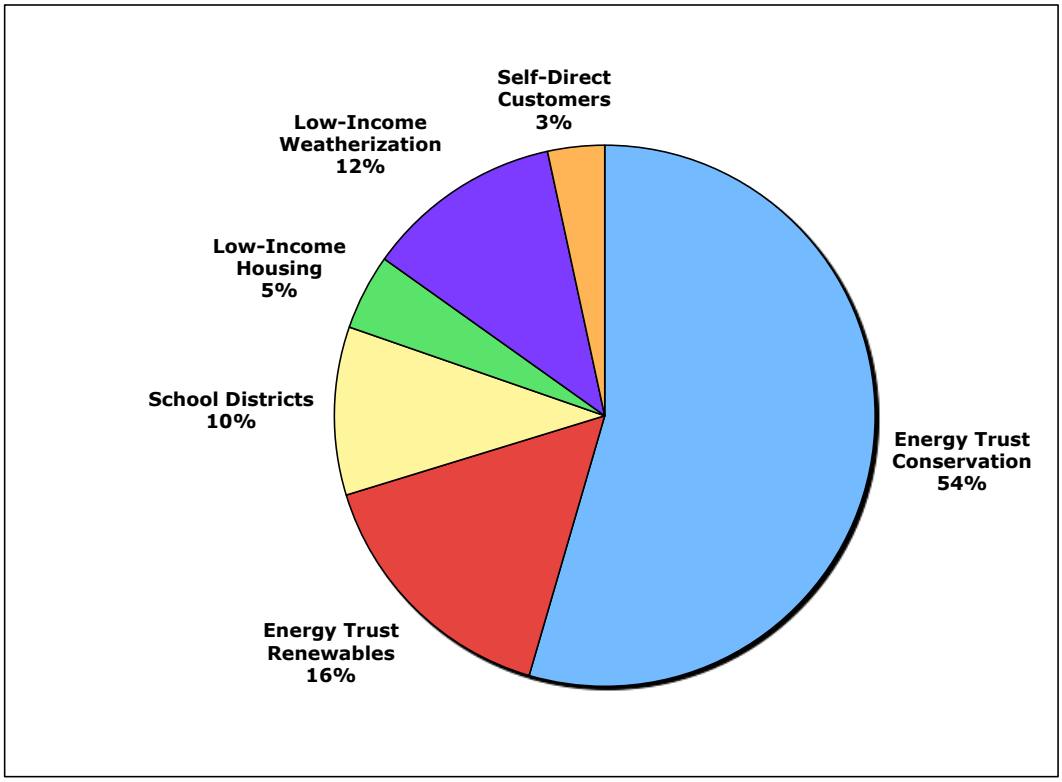


Figure 2 shows the total PPC fund collections for the January 2013 through December 2014 period divided between residential and non-residential ratepayers for each utility.[5] For both utilities, public purpose funds were collected in nearly identical proportions from the residential and non-residential sectors.

[4] This graph includes self-direct expenditures, and thus the allocation percentages do not match the PPC disbursements discussed previously, which pertain to total PPC funds *collected by* the utilities. This chart reflects the utilities' direct allocations to School Districts; Energy Trust provides additional funding for School Districts.

[5] The sector share was calculated by each utility based on revenues received from January 2013 through December 2014. Because of the seasonal nature of energy consumption, this distribution can vary from month to month.

Figure 2: Sector Contribution of PPC Funds by Utility (1/2013 – 12/2014)

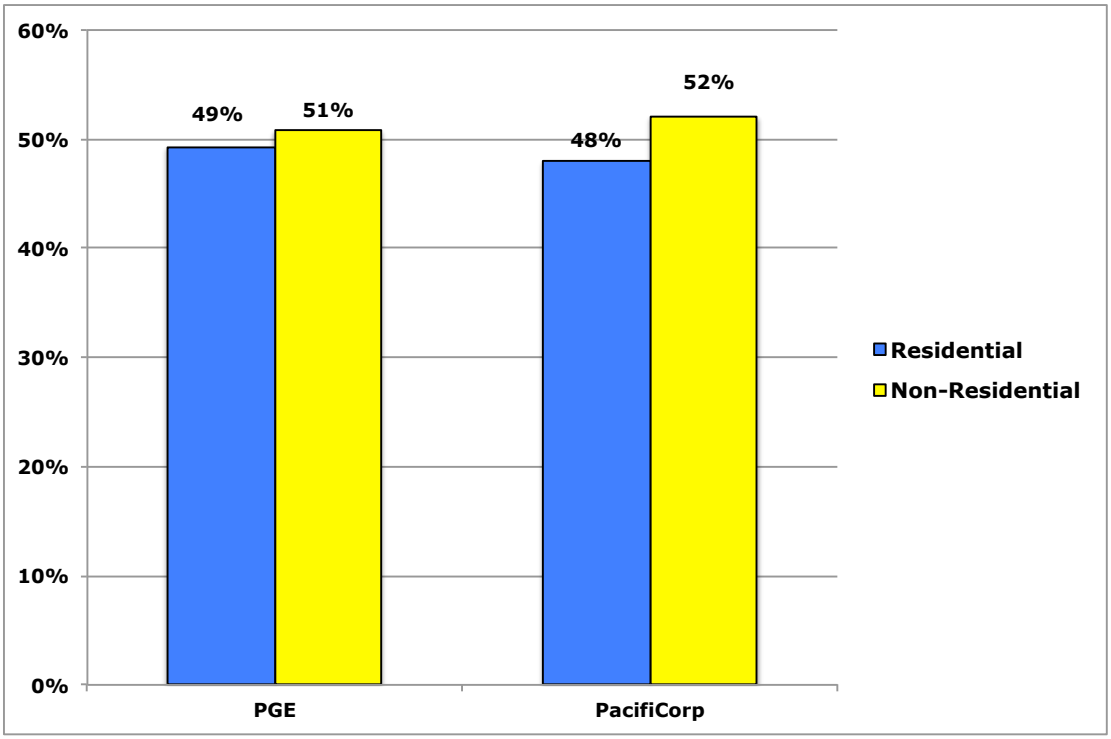
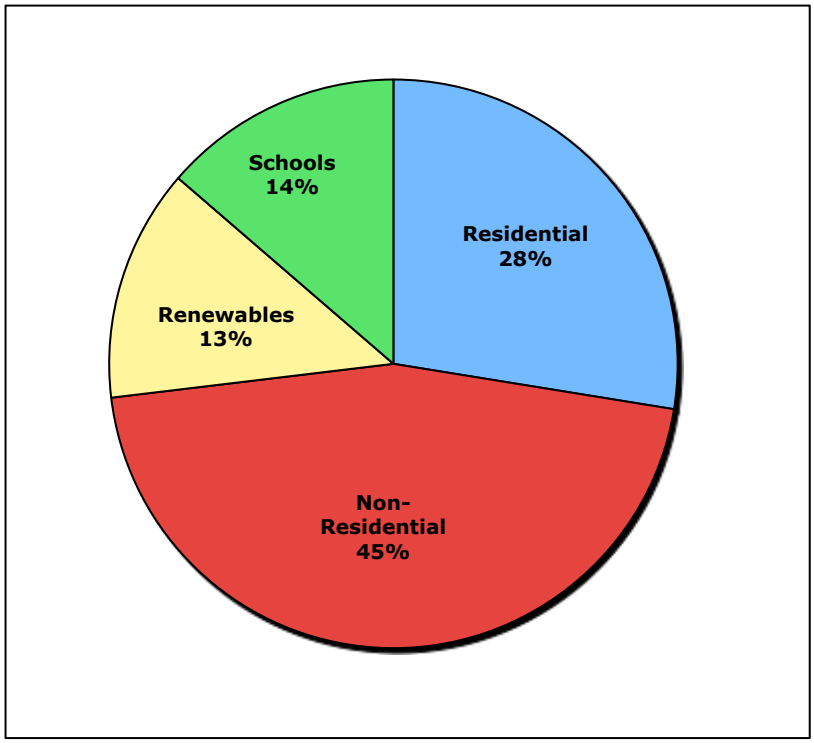


Figure 3 shows how PPC fund expenditures by the various agencies and programs were distributed among sectors. The non-residential sector (excluding schools) accounted for 45 percent of expenditures from January 2013 to December 2014. Over the same timeframe, schools accounted for 14 percent of expenditures, 13 percent of expenditures were spent on renewable resource development, and 28 percent of expenditures were spent on programs for residential customers (covered by the OHCS and Energy Trust residential conservation programs).[6]

[6] These schools expenditures are from the utilities' direct allocations only, and not additional funding from Energy Trust.

Figure 3: PPC Expenditures by Sector (1/2013 – 12/2014)



2.3 Receipt and Expenditure Summary

This report details public purpose charge expenditures from January 1, 2013 to December 31, 2014. Table 3 shows the total funds collected during this period from both PGE and PacifiCorp. Over this 2-year period, PGE disbursed $103,862,974 in PPC funds and PacifiCorp disbursed $73,337,806, for a total of $177,200,780 allocated across the agencies. The utilities spent a combined total of $160,282 on administrative expenses to collect and distribute PPC funds to the agencies. This amount includes funds distributed to the Oregon PUC to help administer the program.

Table 3: Total PPC Fund Disbursements (1/2013 – 12/2014)

Source	PPC Disbursements	Administrative Expenses*
PGE	$103,862,974	$83,331
PacifiCorp	$73,337,806	$76,951
Total	**$177,200,780**	**$160,282**

*Includes fees paid to OPUC to help administer the PPC program.

Table 4 provides additional detail on the disbursements across the various programs for the January 2013 – December 2014 period. The far right column of the table lists the level of expenditure for these funds over the same period, and shows that expenditures were similar

to disbursements for most programs. As shown at the bottom of the table, PPC expenditures totaled $164,266,828 across all fund administrators. Administrative costs for agencies receiving the PPC funds totaled $9,083,119 or 5.53 percent of all expenditures during this period.

Table 4: PPC Disbursements and Expenditures (1/2013 – 12/2014)

	Disbursement Source			Expenditure
Fund Administrator / Program	**PGE**	**PacifiCorp**	**Total**	**Total**
Energy Trust of Oregon				
Conservation	$55,226,127	$41,368,501	$96,594,628	$82,694,307
Renewable Energy	$16,220,493	$11,694,649	$27,915,142	$20,259,158
Administrative Expenses				$7,896,283
School Districts	$10,442,330	$7,367,061	$17,809,391	$21,748,459
ODOE Program Expenses				$472,481
Administrative Expenses				$235,224
Oregon Housing and Community Services				
Low-Income Weatherization*	$12,217,529	$8,624,778	$20,842,307	$16,185,403
Low-Income Housing	$4,699,050	$3,317,323	$8,016,373	$5,784,026
Administrative Expenses				$772,823
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Energy Education				$1,484,126
Self-Direct Customers**				
Conservation	$3,578,865	$139,384	$3,718,249	$3,718,249
Renewable Energy	$1,478,580	$826,110	$2,304,690	$2,304,690
ODOE Program Expenses				$84,859
Administrative Expenses				$178,790
Totals	**$103,862,974**	**$73,337,806**	**$177,200,780**	**$164,266,828**
Administrative Costs Only				**$9,083,119**

* Low-Income Weatherization includes the ECHO program and the Low-Income Weatherization Program (for multi-family rental housing).
** The amounts listed for Self-Direct represent public purpose charges retained and spent by the participating sites in lieu of making payments to the utilities.

Table 5 shows the timing of PPC receipts and expenditures since 2012 for each agency. Unexpended funds from 2012 are listed, in addition to new receipts and expenditures during the January 2013 – December 2014 period.[7]

[7] The SB 1149 Schools Program operates on a reimbursement model. School districts pay for eligible projects with other funds such as bonds, and then are reimbursed from their SB1149 funds. Reimbursement could consist of a single payment if a district's SB1149 balance is large enough, or it may include multiple payments as additional PPC funds are disbursed. Total reimbursement is capped at projected total disbursement through the end of 2025. A negative carry forward amount indicates that a portion of the total cost of all installed measures will be reimbursed from future PPC disbursements.

Table 5: Cumulative PPC Receipts and Expenditures (1/2013 – 12/2014)

Fund Administrator / Program	2012 Carry Forward*	1/2013 - 6/2014 Receipts	1/2013 - 6/2014 Expenditures
Energy Trust of Oregon			
Conservation	$782,503	$96,594,628	$89,116,597
Renewable Energy**	$15,672,997	$27,915,142	$21,733,151
School Districts	-$4,336,570	$17,809,391	$22,456,163
Oregon Housing and Community Services* **	$12,157,996	$28,858,680	$24,674,330
Self-Direct Customers** **	$0	$6,022,939	$6,286,587
Totals	**$24,276,926**	**$177,200,780**	**$164,266,828**

* 2012 carryover amounts calculated by Evergreen Economics using data from the *Report to Legislative Assembly on Public Purpose Expenditures for the Period January 1, 2011 – December 31, 2012* (March 29, 2013).
** Renewables carryover includes uncommitted funds and funds committed to project installations in future years.
*** Expenditures for the OHCS Low-Income program include expenditures from the Housing Trust Fund.
**** The amounts listed for Self-Direct represent public purpose charges retained and spent by the participating sites in lieu of making payments to the utilities.

The remaining sections in this report describe how each organization used its allocated funds. For comparison's sake, administrative expenses have been consistently defined as

1. Costs that cannot be otherwise associated with a certain program but which support an agency's general operations. These costs may include board or executive director activities, general business management, accounting, general reporting, and oversight;

2. General outreach and communication; and

3. The following direct program support costs:

    a. Supplies
    b. Postage and shipping
    c. Telephone
    d. Occupancy expenses
    e. Printing and publications
    f. Insurance
    g. Equipment
    h. Travel
    i. Meetings, training, and conferences
    j. Interest expense and bank fees
    k. Depreciation and amortization
    l. Dues, licenses, and fees
    m. Other misc. expenses

The administrative expenses provided for each agency all conform with this definition.

3 Energy Trust of Oregon, Inc.

3.1 Overview

The Oregon PUC designated Energy Trust of Oregon, Inc. to administer the conservation and renewable resource and market transformation components of the PPC. Energy Trust sponsors a suite of programs that target new and existing residential, commercial, and industrial electricity customers in the PGE and PacifiCorp service areas. Through these programs, Energy Trust provides informational assistance and financial incentives to install efficiency measures and lower costs of projects that generate electricity using renewable energy resources. A portion of the funds from Energy Trust is also allocated to the Northwest Energy Efficiency Alliance (NEEA) to support its ongoing energy efficiency market transformation programs.[8]

Table 6 provides a summary of Energy Trust PPC revenues and expenditures from January 1, 2013 through December 31, 2014. Funds received by Energy Trust during this period totaled $124,509,770 and expenditures totaled $110,849,748. Administrative expenses totaled $7,896,283 and comprised 7.1 percent of total spending by Energy Trust on electric conservation and renewable programs and 6.3 percent of total PPC receipts during this period.[9]

Table 6: Energy Trust Receipt and Expenditure Summary (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Total Fund Receipts	**$71,446,620**	**$53,063,150**	**$124,509,770**
Expenditures			
Energy Conservation	$47,939,801	$34,754,506	$82,694,307
Renewable Energy	$10,522,177	$9,736,981	$20,259,158
Administrative Expenses	$4,647,641	$3,248,642	$7,896,283
Total Expenditures	**$63,109,619**	**$47,740,129**	**$110,849,748**

[8] Energy Trust also administers residential, commercial, and industrial conservation programs for Northwest Natural Gas Company and Cascade Natural Gas Corporation under the terms of a stipulation with the OPUC. Avista Utilities also contracted with Energy Trust in 2006 and 2007 to deliver three programs in its service territory. In 2008, PGE and Pacific Power began providing additional funds for achievable cost-effective energy efficiency to Energy Trust pursuant to section 46 of the 2007 Renewable Energy Act (SB 838).

[9] Administrative expenses used here and in subsequent tables are defined using the common administrative expense definition discussed in section 2.3 of this report (Receipt and Expenditure Summary) and are for program delivery services funded through SB 1149 only. Administrative costs allocated to Northwest Natural Gas, Cascade Natural Gas, and to PGE and PacifiCorp as authorized under SB 838, are not included here.

3.2 Energy Conservation

3.2.1 Receipts and Expenditures

Table 7 shows Energy Trust fund receipts and expenditures for its conservation programs. During the January 1, 2013 through December 31, 2014 period, $96,594,628 in PPC funds was distributed to Energy Trust for spending on these programs. Conservation expenditures totaled $89,116,597 during this same period. Administrative costs that could be directly assigned to Energy Trust conservation programs totaled $6,422,290, or 7.2 percent of total conservation program spending and 6.6 percent of total PPC receipts for conservation programs.

Table 7: Energy Trust Conservation Receipts and Expenditures (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Fund Receipts	**$55,226,127**	**$41,368,501**	**$96,594,628**
Expenditures			
Program Expenditures	$47,939,801	$34,754,506	$82,694,307
Administrative Expenses	$3,889,937	$2,532,353	$6,422,290
Total Expenditures	**$51,829,736**	**$37,286,858**	**$89,116,597**

3.2.2 Results[10]

Energy Trust conservation activities consisted of the design and delivery of conservation programs targeted to different market sectors with a wide range of energy saving measures. Table 8 shows the accomplishments of the individual programs sponsored by Energy Trust. During the period covered by this report, 474,901,028 kWh in energy savings were achieved across all market sectors. The industrial sector accounted for 48 percent of these savings with 229,689,146 kWh saved. Commercial sector savings were 159,856,569 kWh (34 percent of Energy Trust conservation savings), and residential sector savings were 85,355,313 kWh (18 percent).

The Production Efficiency Program accounted for 98 percent of savings in the industrial sector. In the commercial sector, the Building Efficiency Program was the largest contributor and accounted for 47 percent of the energy savings achieved in this sector followed by the New Building Efficiency Program, which accounted for an additional 43 percent.

[10] Energy Trust delivers additional savings to PGE and PacifiCorp through funding authorized under SB 838, and to Northwest Natural Gas and Cascade Natural Gas under the terms of a stipulation with the OPUC. Energy Trust reports total savings for all expenditures to the OPUC.

Table 8: Energy Trust Conservation Programs Energy Savings By Utility (1/2013 – 12/2014)*

Program Name	PGE Savings (kWh)	PacifiCorp Savings (kWh)	Total Savings (kWh)	Average Life of Savings (years)
Residential				
Home Energy Savings	9,520,726	9,832,088	19,352,813	12.9
New Homes & Products	16,058,146	15,758,671	31,816,816	9.5
NEEA (Market Transformation)	20,169,465	14,016,218	34,185,683	9.5
Total Residential	**45,748,336**	**39,606,977**	**85,355,313**	**10.3**
Commercial				
Building Efficiency **	47,297,573	28,004,417	75,301,990	12.5
New Building Efficiency	17,422,667	51,878,161	69,300,828	14.4
NEEA (Market Transformation)	8,999,520	6,254,231	15,253,751	13.2
Total Commercial	**73,719,760**	**86,136,809**	**159,856,569**	**13.4**
Industrial				
Production Efficiency	155,726,398	69,704,633	225,431,032	11.2
NEEA (Market Transformation)	2,512,297	1,745,817	4,258,114	9.9
Total Industrial	**158,238,695**	**71,450,450**	**229,689,146**	**11.2**
Total All Programs	**277,706,792**	**197,194,236**	**474,901,028**	**11.7**

* Savings from reduced transmission and distribution losses are not counted in this table.
** Savings include 218,426 kWh for Schools projects that utilized ODOE-managed SB 1149 funds and received Energy Trust program support to identify electric and natural gas conservation opportunities. Of this amount 20,698 kWh were saved in PGE territory 197,737 kWh were saved in Pacific Power territory.

Table 9 provides additional detail regarding the types of efficiency improvements that are being implemented for the various conservation programs. In the residential sector, at least 12,970 ENERGY STAR appliances received rebates, and in the commercial sector, 1,452 existing buildings and 1,148 multifamily buildings were retrofitted.

Table 9: Energy Trust Example Efficiency Improvements (1/2013 – 12/2014)

Improvement Type	Number of Projects*	Average Life of Savings (Years)
Commercial projects		
Existing buildings retrofitted	1,452	14.4
Efficient new buildings constructed	327	14.0
Multifamily buildings retrofitted	1,148	13.2
New multifamily buildings constructed	102	12.7
Solar water heating commercial installations	4	20.0
Industrial projects		
Efficient manufacturing processes, water and wastewater treatment, and agriculture	1,019	11.18
Residential projects		
Efficient new homes constructed	910	30.1
Efficient new manufactured homes purchased	55	29.9
Home energy reviews conducted	901	N/A
Single-family homes retrofitted	959	15.9
Manufactured homes retrofitted	764	16.0
Residential solar water heating installations	10	20
ENERGY STAR appliance rebates	12,970	13 to 22**

* Number of projects is not the same as number of measures. Multiple measures are often installed for individual projects.
** Dishwashers: 13 years, Clothes Washers: 14 years, Freezers: 20 years, Refrigerators: 22 years

Table 10 shows Energy Trust's cost for each conservation program and the levelized energy costs that have been achieved. The most Energy Trust funds were spent on the Industrial Production Efficiency Program ($32.0 million) followed by the Commercial Building Efficiency Program ($22.6 million) and the Commercial New Building Efficiency Program ($9.7 million). The industrial sector attained the lowest overall levelized energy cost, with an average cost of 1.6 cents per kWh. The residential and commercial sectors had higher average levelized costs at 2.8 and 2.1 cents per kWh, respectively.

Table 10: Energy Trust Conservation Costs and Levelized Energy Costs (1/2013 – 12/2014)

Program Name	Energy Trust Cost (all electric funders)*	Levelized Cost (dollars/kWh)**
Residential		
Home Energy Savings	$6,966,958	0.035
Efficient New Homes/Products	$8,796,712	0.034
NEEA (Market Transformation)	$4,821,721	0.017
Total Residential	**$20,585,391**	**0.028**
Commercial		
Building Efficiency	$22,568,866	0.030
New Building Efficiency	$9,712,230	0.013
NEEA (Market Transformation)	$3,009,409	0.019
Total Commercial	**$35,290,506**	**0.021**
Industrial		
Production Efficiency	$32,000,213	0.016
NEEA (Market Transformation)	$1,240,487	0.036
Total Industrial	**$33,240,700**	**0.016**

* Energy Trust Cost includes allocated administrative costs. See footnote 9.
** Levelized costs were calculated by Energy Trust and include savings for reduced transmission and distribution losses.

Table 11 shows how the energy efficiency incentives paid by Energy Trust were distributed across the geographic regions of Oregon. About 62 percent of all incentives ($28.1 million) were paid to customers in the Portland area, and 28 percent was divided between the Willamette Valley and Southern Oregon. The industrial sector received the largest share of incentive payments at 43 percent.

Table 11: Energy Trust Energy Efficiency Incentive Payments by Sector and Region, Thousands of Dollars (1/2013 – 12/2014)

Sector	Central/ East	NW/ Coast	Portland Area	Southern	Willamette Valley	Total
Commercial	$1,946	$225	$12,861	$1,648	$1,772	**$18,452**
Industrial	$1,610	$29	$11,498	$1,811	$4,533	**$19,480**
Residential	$831	$152	$3,793	$1,674	$1,385	**$7,834**
Total	**$4,386**	**$406**	**$28,152**	**$5,132**	**$7,690**	**$45,766**

3.3 Market Transformation

3.3.1 Actions and Processes

NEEA is funded by electric utilities in Oregon, Washington, Idaho, and Montana, and Energy Trust provides funding on behalf of PGE and PacifiCorp's ratepayers. NEEA helps promote electric efficiency through market transformation, i.e., change in sales, selection, design, installation, operation, and maintenance practices for homes, equipment, buildings and industrial facilities. NEEA's programs are closely integrated with those of Energy Trust but are more focused on long-term market change. Among its current initiatives are programs for ductless heat pumps, heat pump water heaters, luminaire-level lighting controls, efficient consumer electronics (including TVs), existing building renewal, Strategic Energy Management (SEM) and efficient residential home construction.

3.3.2 Participating Firms and Organizations

Through NEEA, Energy Trust's efforts are coordinated with those of all the electric utilities of the Northwest (for activities beyond the PGE and PacifiCorp Oregon service territories) and the state energy offices and public utility commissions of Oregon, Montana, Idaho and Washington. NEEA also helps coordinate some program efforts with the Federal Government, for example, by negotiating with the US Environmental Protection Agency (EPA) to create the Northwest ENERGY STAR new home efficiency program. Through the Consortium for Energy Efficiency, Energy Trust and NEEA also coordinate with similar programs nationally.

Table 12 shows Energy Trust's cost for each market transformation program. Total Energy Trust costs for market transformation were approximately $9.1 million, with the greatest share (53 percent) spent in the residential sector.

Table 12: Energy Trust Market Transformation Costs (1/2013 – 12/2014)

Program Name	Energy Trust Cost
NEEA Commercial	$3,009,409
NEEA Industrial	$1,240,487
NEEA Residential	$4,821,721
Total	**$9,071,617**

Table 13 shows the energy savings accomplishments of the programs delivered by NEEA. During the period covered by this report, over 53,500,000 kWh in energy savings were achieved across the three market sectors, with the residential sector accounting for 64 percent of the savings.

Table 13: Market Transformation Energy Savings By Program and Utility (1/2013 – 12/2014)*

Program Name	PGE Savings (kWh)	PacifiCorp Savings (kWh)	Total Savings (kWh)	Average Life of Savings (years)
NEEA Residential	20,169,465	14,016,218	34,185,683	9.5
NEEA Commercial	8,999,520	6,254,231	15,253,751	13.2
NEEA Industrial	2,512,297	1,745,817	4,258,114	9.9
Total	**31,681,282**	**22,016,267**	**53,697,548**	**10.6**

* Savings from reduced transmission and distribution losses are not counted in this table.

3.3.3 Technology Advancement

This section provides some examples of the many projects that NEEA is undertaking to validate, refine, and introduce new potentially cost-effective technologies to Northwest markets.

Beginning in 2012, NEEA worked with technical building experts to create a draft Next Step Home specification, which will include a set of advanced energy-efficient building practices and technologies to help accelerate residential new construction code changes. NEEA tested the specification in 2013 to demonstrate builders' ability to meet these advanced building practices and test the performance of pilot homes. After making final refinements to the specification's mix of practices and products, NEEA's emerging Initiative will result in new homes that are approximately 30 percent more efficient than those complying with current state building codes.

In addition, NEEA's continuous energy monitoring in the Next Step Home pilots revealed that ductless heat pumps (DHPs) cycled on and off frequently, wasting energy, increasing energy costs and reducing equipment life. NEEA shared the findings and worked with manufacturers to optimize product energy efficiency and production. Based on NEEA's research, new firmware could deliver an additional 300 to 500 kWh of annual savings from each system, and one major manufacturer has already implemented a global, product-wide firmware upgrade to increase energy savings. NEEA will be working with the Air Conditioning, Heating & Refrigeration Institute to design a test procedure that will reflect real-world conditions encountered in the monitoring project.[11]

In the commercial lighting controls market, NEEA is helping to develop a new generation of products - Luminaire Level Lighting Controls (LLLC) - that may be able to deliver high energy savings for the Northwest using micro-zone sensing and control. NEEA's LLLC initiative develops tiered specifications to serve as a roadmap for the lighting industry and conducts functional testing to validate LLLC product performance. In 2011, NEEA partnered with Enlighted, Inc. to install and study its system at three Northwest sites. The study, completed

[11] NEEA 2013 Annual Report.

and released in 2013, showed the system delivered 42 percent aggregate energy savings and, in some cases, 60 to 70 percent savings. The product is the first to meet NEEA's LLLC specification. NEEA's findings will further boost market confidence in this new technology, which has more than 20 million square feet of installed space. NEEA will also use its research to develop a strategy to increase market adoption of this emerging technology.[12]

3.4 Renewable Energy

3.4.1 Receipts and Expenditures

Table 14 shows the PPC fund receipts and expenditures dedicated to Energy Trust renewable energy programs from January 1, 2013 through December 31, 2014. During this period, $27,915,142 in PPC funds was allocated to Energy Trust for renewable energy projects, and renewable energy program spending totaled $20,259,158. Administrative costs related to the renewable energy program totaled $1,473,993 and comprised 6.8 percent of total renewable energy program spending by Energy Trust and 5.3 percent of the PPC receipts designated for the renewable energy programs.

Table 14: Energy Trust Receipts and Renewable Expenditures (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Fund Receipts*	**$16,220,493**	**$11,694,649**	**$27,915,142**
Expenditures			
Program Expenditures	$10,522,177	$9,736,981	$20,259,158
Administrative Expenses	$757,704	$716,289	$1,473,993
Total Expenditures	**$11,279,882**	**$10,453,271**	**$21,733,153**

* Unspent funds are carried over into future years either as uncommitted funds or funds committed to contracted project installations in future years. No incentive payments are made to contracted projects until projects have achieved operational status.

3.4.2 Results

Table 15 lists all the active renewable energy generation projects funded by Energy Trust from January 2013 through December 2014. The largest amount of annual renewable energy generation was achieved through a 1.7 MW biopower project in Washington County. Another biopower project, an above ground continuous flow stirred-tank reactor (CSTR) in Lane County, achieved 1.4 MW. This biopower project digests 25 tons of post-consumer food waste from Portland, and other high strength food waste from the Willamette Valley. Furthermore, four (4) wind projects were completed in Washington, Marion, Polk, and Umatilla counties, with a capacity of 0.01 MW each.

Upon completion, all of the projects listed will provide a total of 66,247 MWh in renewable energy per year. Projects that are currently operational are providing 39,381 MWh per year. The Solar Electric Program, which provides homeowners and businesses with financial

[12] Ibid.

incentives to adopt power applications, has completed 2,174 projects that are now operational, and included in the above energy.

Table 16 shows all of the feasibility studies and other development projects that were approved for funding by Energy Trust's renewable energy programs from January 2013 through December 2014. A total of 39 projects were active during the report period: 31 were completed and 8 are ongoing. Project types range from feasibility studies and grant writing assistance to wind monitoring equipment.

Table 15: Energy Trust Renewable Energy Projects Summary (1/2013 – 12/2014)

Project	# of Projects	Status	Year	County	Estimated Life Years	Generating Capacity (MW)	Annual Energy (MWh/yr)	Project Cost ($/MWh)	Cost to Energy Trust ($/MWh)	Percent of Above Market Cost Paid	Utility Service Territory
Biopower #1	1	Contracted	2013	Multnomah	20	0.40	2,226	1,222	148	90%	PGE
Biopower #2	1	Contracted	2013	Washington	20	1.70	13,108	1,343	229	65%	PGE
Biopower #3	1	Completed	2013	Tillamook	20	0.75	6,042	803	166	65%	PAC
Biopower #4	1	Contracted	2013	Hood River	20	0.22	2,070	2,077	399	52%	PAC
Biopower #5	1	Completed	2014	Lane	20	1.36	12,614	1,062	159	56%	PGE
Other Renewables #1	1	Contracted	2013	Deschutes	20	0.00	3,951	1,645	324	100%	PAC
Other Renewables #2	1	Contracted	2013	Clatsop	20	0.03	164	3,022	872	100%	PAC
Other Renewables #3	1	Completed	2013	Multnomah	20	0.01	64	1,219	189	90%	PGE
Other Renewables #4	1	Completed	2013	Hood River	20	0.04	189	15,117	795	40%	PAC
Other Renewables #5	1	Completed	2014	Klamath	20	1.50	685	19,349	2,264	95%	PAC
Other Renewables #6	1	Completed	2014	Deschutes	20	0.70	3,286	679	304	69%	PAC
Wind #1	1	Completed	2013	Washington	15	0.01	20	4,844	1,594	51%	PGE
Wind #2	1	Completed	2013	Marion	15	0.01	19	7,484	3,255	51%	PGE
Wind #3	1	Completed	2013	Polk	15	0.01	3	17,126	9,549	67%	PAC
Wind #4	1	Completed	2014	Umatilla	15	0.05	100	4,947	1,707	51%	PAC
Solar #1	1	Contracted	2014	Multnomah	20	0.41	547	1,870	650	88%	PGE
Solar #2	1	Contracted	2013	Klamath	20	2.57	4,800	1,148	38	12%	PAC
Solar Electric in PAC	356	Completed	2013	n/a	20	2.20	2,612	3,778	623	n/a	PAC
Solar Electric in PAC	399	Completed	2014	n/a	20	3.04	3,759	3,273	611	n/a	PAC
Solar Electric in PGE	525	Completed	2013	n/a	20	3.60	3,677	4,692	705	n/a	PGE
Solar Electric in PGE	894	Completed	2014	n/a	20	6.04	6,310	4,307	741	n/a	PGE
Total Completed	2184					19.31	39,381				
Total Contracted	7					5.33	26,866				
Total	**2191**					**24.65**	**66,247**				

* Costs in this table reflect full incentives committed to projects, not expenditures during this time period. Please reference Table 14 for actual expenditures.
** The percent of above-market cost paid does not necessarily reflect the percent of green tags owned by Energy Trust. Green tag ownership is determined based on green tag policy, which can be found at http://www.energytrust.org/library/policies/4.15.000.pdf
*** Capacity for Biopower #4 is 0; the project improved the existing capacity of the facility with additional piping, but no new capacity was claimed.
**** Capacity for Other Renewables #1 is 0; the project improved the existing capacity of the facility with additional piping, but no new capacity was claimed.

Table 16: Energy Trust Feasibility Studies and Other Projects (1/2013 – 12/2014)

Title	Status	Year	Projcet Type	County	Utlity Service Territory	Cost to Energy Trust	Energy Trust Share
Biopower #1	Completed	2013	Feasibility Analysis	Klamath	PAC	$45,971	50%
Biopower #2	Completed	2014	Feasibility Analysis	Washington	PGE	$7,468	50%
Other Renewables #1	Completed	2014	Feasibility Analysis	Yamhill	PGE	$4,559	50%
Other Renewables #2	Initiated	2013	Feasibility Analysis	Jefferson	PAC	$68,373	50%
Other Renewables #3	Completed	2013	Feasibility Analysis	Jefferson	PAC	$15,877	48%
Other Renewables #4	Completed	2014	Feasibility Analysis	Deschutes	PAC	$3,623	50%
Other Renewables #5	Completed	2013	Feasibility Analysis	Deschutes	PAC	$40,000	39%
Other Renewables #6	Completed	2013	Feasibility Analysis	Lake	PAC	$39,351	38%
Other Renewables #7	Completed	2014	Feasibility Analysis	Wallowa	PAC	$500	50%
Other Renewables #8	Completed	2014	Feasibility Analysis	Klamath	PAC	$75,000	50%
Other Renewables #9	Completed	2014	Feasibility Analysis, Grant Writing Assistance	Wallowa	PAC	$11,090	100%
Other Renewables #10	Completed	2013	Feasibility Analysis	Klamath	PAC	$750	50%
Other Renewables #11	Completed	2013	Feasibility Analysis	Washington	PGE	$2,244	50%
Other Renewables #12	Completed	2014	Feasibility Analysis	Deschutes	PAC	$39,413	50%
Other Renewables #12	Initiated	2013	Feasibility Analysis	Deschutes	PAC	$80,587	31%
Other Renewables #13	Completed	2013	Feasibility Analysis	Washington	PGE	$5,033	50%
Other Renewables #14	Completed	2014	Feasibility Analysis	Klamath	PAC	$57,482	49%
Other Renewables #14	Initiated	2014	Feasibility Analysis	Klamath	PAC	$106,984	50%
Other Renewables #15	Completed	2014	Feasibility Analysis	Multnomah	PGE	$1,000	50%
Other Renewables #16	Completed	2014	Feasibility Analysis	Wallowa	PAC	$1,940	100%
Other Renewables #16	Initiated	2014	Feasibility Analysis	Wallowa	PAC	$18,060	100%
Other Renewables #17	Completed	2014	Feasibility Analysis	Klamath	PGE	$63,000	50%
Other Renewables #17	Initiated	2014	Feasibility Analysis	Klamath	PGE	$49,874	50%
Other Renewables #18	Completed	2014	Feasibility Analysis	Klamath	PAC	$6,644	50%
Other Renewables #19	Initiated	2014	Feasibility Analysis	Marion	PAC	$30,025	50%
Other Renewables #20	Completed	2014	Feasibility Analysis	Deschutes	PAC	$6,416	50%
Wind #1	Completed	2013	Feasibility Analysis	Morrow	PAC	$4,188	50%
Wind #1	Completed	2013	Feasibility Analysis	Morrow	PGE	$2,938	50%
Wind #1	Initiated	2013	Feasibility Analysis	Morrow	PAC	$65,300	50%
Wind #2	Completed	2014	Feasibility Analysis	Morrow	PAC	$6,441	50%
Wind #2	Completed	2013	Feasibility Analysis	Morrow	PGE	$900	50%
Wind #2	Initiated	2013	Feasibility Analysis	Morrow	PAC	$2,421	50%
Wind #3	Completed	2013	Wind Monitoring Equipment	Deschutes	PGE	$2,910	100%
Wind #4	Completed	2013	Wind Monitoring Equipment	Marion	PGE	$1,480	50%
Wind #5	Completed	2013	Wind Monitoring Equipment	Marion	PGE	$1,265	50%
Wind #6	Completed	2013	Wind Monitoring Equipment	Marion	PGE	$1,188	50%
Wind #7	Completed	2013	Wind Monitoring Equipment	Marion	PGE	$1,455	50%
Wind #8	Completed	2013	Wind Monitoring Equipment	Yamhill	PGE	$500	61%
Wind #9	Completed	2013	Wind Monitoring Equipment	Marion	PGE	$434	50%

4 Oregon Housing and Community Services

4.1 Overview

Oregon Housing and Community Services (OHCS) receives and administers PPC funds for low-income housing programs. Four and one-half percent of the PPC funds are dedicated to low-income housing development projects, either for construction of new housing or rehabilitation of existing housing for low-income families through the OHCS Housing Trust Fund. OHCS operates two weatherization programs, and an additional 11.7 percent of the total PPC funds collected are allocated for low-income weatherization. One program provides home weatherization (for single- and multi-family, owner occupied, and rental housing) and the other provides for weatherization of affordable multi-family rental housing. In either case, housing projects supported by PPC funds for weatherization are required to have a conservation element.

Table 17 provides a summary of the Trust Fund and Weatherization portion of PPC fund receipts and expenditures from January 1, 2013 through December 31, 2014. Funds received by Oregon Housing and Community Services during this period amounted to $28,858,680 and expenditures including commitments totaled $30,583,482. Administrative expenses comprised 3.5 percent of total spending between the three programs during this period.

Table 17: OHCS Receipt and Expenditure Summary (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Receipts			
Low-Income Weatherization			
Administration	$610,876	$431,239	$1,042,115
Evaluation, Training, and Technical Assistance	$610,876	$431,239	$1,042,115
ECHO	$9,207,636	$6,500,384	$15,708,020
Multi-Family Rental Housing	$1,788,141	$1,261,916	$3,050,057
Total Low-Income Weatherization	**$12,217,529**	**$8,624,778**	**$20,842,307**
Low-Income Housing			
Administration	$234,953	$165,866	$400,819
Program	$4,464,097	$3,151,457	$7,615,554
Total Low-Income Housing	**$4,699,050**	**$3,317,323**	**$8,016,373**
Total Fund Receipts	**$16,916,579**	**$11,942,101**	**$28,858,680**
Expenditures			
Low-Income Weatherization*	$10,075,374	$6,110,029	$16,185,403
Committed but unexpended	$2,888,643	$1,707,947	$4,596,590
Low-Income Housing**			$5,784,026
Committed but unexpended			$520,000
Administrative Expenses**			$772,823
Evaluation, Training, Technical Assistance**			$447,952
Committed but unexpended			$89,990
Energy Education	$744,313	$739,813	$1,484,126
Committed but unexpended	$408,608	$293,964	$702,572
Total Expenditures (w/o Committed)**	**$10,819,687**	**$6,849,842**	**$24,674,330**
Total Expended and Committed**	**$14,116,938**	**$8,851,753**	**$30,583,482**

* Includes the ECHO program and the Low-Income Weatherization Program (for multi-family rental housing).
** Low-Income Housing, Administrative, and Evaluation Training and Technical Assistance expenditures are not tracked by utility.

Specific detail on the low-income housing program and low-income weatherization activities is provided subsequently.

4.2 Low-Income Housing

4.2.1 Receipts and Expenditures

The Housing Development Grant Program (HDGP), commonly known as the Housing Trust Fund, was created in 1991 to expand the State's supply of housing for low and very low-income families and individuals. The program provides grants and loans to construct new housing or to acquire and/or rehabilitate existing structures. Seventy-five percent of program funds must develop affordable housing to support households whose gross income is at or below 50 percent of the area median income (AMI); the balance of the funds can develop affordable housing to support households with incomes up to 80 percent of the area median income. The majority of program resources are awarded through a competitive application process that occurs twice annually, once for the spring and once for the fall funding cycle. Funding preference is given to project applicants who provide services appropriate for the targeted tenant population.

Table 18 shows PPC fund receipts and expenditures for the low-income housing program. During the January 2013 – December 2014 period, a total of $7,615,554 in PPC funds were allocated to Oregon Housing and Community Services to support low-income housing projects throughout the State. Expenditures from PPC revenue for projects developed during this period were $5,784,026. Funds to pay project costs totaling $520,000 obligated but not spent as of December 31, 2014.

Table 18: Low-Income Housing Program Receipts and Expenditures

(1/2013 – 12/2014)

Transaction	Total
Fund Receipts	**$7,615,554**
Expenditures	
Committed but unexpended	$520,000
Expenditures	$5,784,026
Total Expended and Committed	**$6,304,026**

4.2.2 Results

During the January 2013 – December 2014 period 45 housing units in Lane County were fully funded with PPC revenue that targeted families at or below 60 percent of Oregon's median income. In prior years, OHCS granted funds to partners prior to the receipt of resources, based on projections. In 2012, the decision was made to cease forward allocation of resources to the low-income housing program. As a result, fewer dollars were available during this reporting period, and fewer projects were allocated funding. In future years, OHCS will continue to grant funds as they are received and will return to typical unit production.

4.3 Low-Income Weatherization (Multi-Family Rental Housing)

4.3.1 Receipts and Expenditures

The Low-Income Weatherization program is designed to reduce the energy usage and utility costs of lower income tenants residing in affordable rental housing. The program provides grant funding for the construction or rehabilitation of affordable rental housing that is located in PGE or PacifiCorp service territories. Use of these funds requires that at least 50 percent of the units in the project be rented to households whose income is at or below 60 percent of the area median income (adjusted by family size) as defined by HUD. Projects receiving funds must also remain affordable for at least 10 years.

For each dollar invested, the project must demonstrate at least one kilowatt-hour in energy savings in the first year of operation. Program resources may be used for shell measures such as windows, doors, and insulation as well as energy efficient appliances and lighting.

Table 19 shows the PPC fund receipts and expenditures allocated for low-income home weatherization. During this period, a total of $3,050,057 in PPC funds was allocated to Oregon Housing and Community Services to support weatherization of rental housing projects within the State. Actual project expenditures were $1,532,387 during this period while funds committed to projects totaled an additional $1,342,301. Expenditures can be less than committed funds as housing development projects can take upwards of two years to complete and funds therefore need to be reserved over multiple years.

Table 19: Low-Income Weatherization (Multi-Family Rental Housing)

Receipts and Expenditures (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Fund Receipts	$1,788,141	$1,261,916	$3,050,057
Expenditures			
Committed but unexpended	$1,039,349	$302,952	$1,342,301
Expenditures*	$1,101,117	$431,270	$1,532,387
Total Expended and Committed	**$2,140,466**	**$734,222**	**$2,874,688**

*Includes expenditures for all projects regardless of funding year.

4.3.2 Results

The low-income weatherization accomplishments are summarized in Table 20. These fifteen completed projects are expected to produce over 1.5 million kWh in electricity savings in their first year of operation.

Table 20: Low-Income Weatherization (Multi-Family Rental Housing) Accomplishments (1/2013 – 12/2014)

Accomplishment	Total
Number of Projects*	**15**
Number of Housing Units	**867**
Estimated Annual kWh Savings	**1,532,461**
Population Served (# of housing units)**	
Elderly	438
Families	485
Special Needs (# of housing units)	
Special Needs Groups	233
Farm Workers	0
Units where household income is between 61 and 80 percent of the area median income	91
Units where household income is between 51 and 60 percent of the area median income	399
Units where household income is between 41 and 50 percent of the area median income	365
Units where household income is between 31 and 40 percent of the area median income	5
Units where household income is equal or less than 30 percent of the area median income	7

* In this reporting period, these fifteen projects accounted for $1,388,175 in expenditures.

Table 21 shows how the low-income weatherization projects were distributed among Oregon's counties.

Table 21: Low-Income Weatherization Program by County (1/2013 – 12/2014)

County	Number of Projects	Number of Units in County
Jefferson	1	94
Marion	2	128
Multnomah	6	298
Washington	2	115
Benton	1	35
Deschutes	1	79
Clackamas	1	68
Jackson	1	50
8 counties	**15 Projects**	**867 Units**

4.4 Low-Income Weatherization (ECHO)

4.4.1 Receipts and Expenditures

A portion of the PPC allocated to Oregon Housing and Community Services goes into the Energy Conservation Helping Oregonians (ECHO) fund and is used for weatherization projects for low-income households.

Oregon Housing and Community Services (OHCS) contracts with local community action agencies (CAAs) to deliver the program. This local network of sub-grantees determines applicant eligibility and delivers services. Qualifying households must apply through the local CAA and are placed on a weatherization waiting list. The waiting period varies with each local agency depending on local need, but households with senior and disabled members and households with children under six years of age are given priority. Once a home is scheduled for weatherization, the applicant is contacted and an energy audit is scheduled. The energy audit determines the appropriate measure to be initiated based on the existing condition of the home and the funds available. Program resources can be used for shell measures that may include:

- Ceiling, wall, and floor insulation
- Energy-related minor home repairs
- Energy conservation education
- Air infiltration reduction
- Furnace repair and replacement
- Heating duct improvements
- Health and safety improvements

Completed work is inspected by the local agency to ensure compliance with program standards. The key performance measure (KPM) approved and reviewed by the Legislature for the ECHO program is to create at least $1 in energy savings for every $1 of state investment. During this time period, the ECHO program generated another $1.05 in energy savings for every dollar invested.

Table 22 shows the PPC fund receipts and expenditures allocated for low-income home weatherization from January 1, 2013 to December 31, 2014. During this period, $15,708,020 in PPC funds was designated for low-income weatherization. Expenditures on completed weatherization projects during the same period totaled $14,653,016. During this reporting period, some carryover funds were spent in addition to funds that were received during this period.

Table 22: Low-Income Weatherization (ECHO) Program Receipts and Expenditures (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
Fund Receipts	**$9,207,636**	**$6,500,384**	**$15,708,020**
Expenditures			
Committed but unexpended	$1,849,294	$1,404,995	$3,254,289
Expenditures	$8,974,257	$5,678,759	$14,653,016
Total Expended and Committed	**$10,823,551**	**$7,083,754**	$17,907,305

4.4.2 Results

The low-income weatherization accomplishments are summarized in Table 23. Since the beginning of 2013, this program resulted in the weatherization of 2,110 homes with a combined estimated electricity savings of 9,396,768 kWh. These program efforts have directly benefited 4,224 people, a large portion of whom are in demographic groups that tend to include the elderly, disabled individuals and young children.

Table 23: Low-Income Weatherization (ECHO) Program Accomplishments (1/2013 – 12/2014)

Accomplishment	Total
Number of Homes Weatherized	**2,110**
Annual kWh Savings	**9,396,768**
Total Population Served	**4,224**
Special Target Populations Served*	
Elderly (>60 years old)	885
Children (<6 years old)	401
Handicapped	638
Farm Workers	28
Native American	188
Hispanic	1805
African American	211
Asian	67

*Individuals can be counted in more than one category, as such, the sum of the special target population categories is greater than total population served.

5 School Districts

5.1 Overview

Before HB 2960 was signed into law in June 2011, 10 percent of PPC funds were allocated to 16 Educational Service Districts (ESDs) located within PGE and PacifiCorp service territories. Since June 23, 2011, PPC funds have been distributed directly to the 112 school districts located within the utilities' service territories, and 825 schools (with 396,370 students) are eligible for PPC funding.[13] Any remaining balances held by the ESDs were transferred to the school districts. Since this 24-month report covers the period from January 2013 to December 2014, the utility receipt figures include funds distributed only to school districts; ESDs no longer receive funds.

These funds are used for cost-effective energy conservation projects at individual schools within each school district and must follow a specific spending directive. First, all schools within a school district must complete an energy audit to identify cost-effective conservation opportunities. After all the schools have completed the audit, PPC funds are used to pay for eligible energy efficiency measures, to cover the energy savings that will result through the estimated measure life.[14] Finally, when all of the recommended measures have been installed, any remaining funds may be used to pay for additional energy conservation measures, energy conservation education, and renewable energy projects at schools within the school district.

The Oregon Department of Energy provides program oversight for the school district audits and projects to ensure consistency across school districts and to verify that projects adhere to the guidelines established for this program. Although the Oregon Department of Energy has oversight for this program, the individual school districts receive their PPC funds directly from the utilities.

5.2 Receipts and Expenditures

Table 24 provides a summary of the ESD and school districts portion of PPC fund receipts and expenditures from January 1, 2013 through December 31, 2014. In addition to the normal program administrative expenses defined earlier, this program had additional administrative expenses for each ESD and school district until HB 2960 was enacted in June 2011. Total administrative costs for the school districts portion of the PPC funds, then, equal $235,224 and comprise 1.1 percent of total expenditures over this period, and 1.3 percent of the PPC allocation to Oregon schools.

[13] These figures are based on the 2013-2014 school year.

[14] For example, consider a measure with an installed cost of $30,000 and a measure life of 20 years that will lead to energy savings of $1,000 per year. The simple payback would be $30,000/$1,000 = 30 years. The reimbursement for this measure is capped at ($1,000/year)*(20 years of life) = $20,000.

Table 24: ESD/School Districts Receipt and Expenditure Summary (1/2013 – 12/2014)

Transaction	PGE	PacifiCorp	Total
# of ESDs Receiving Funds*	0	0	0*
ESD receipts (1/2013 - 12/2014)	$0	$0	$0
# of School Districts receiving funds**	42	74	112 **
School District receipts (1/2013 - 12/2014)	$10,442,330	$7,367,061	$17,809,391
Total Fund Receipts	**$10,442,330**	**$7,367,061**	**$17,809,391**
Expenditures			
Audits	$344,261	$139,719	$483,980
Conservation Measures Installed	$9,706,665	$11,388,934	$21,095,599
Commissioning Costs (after measures installed)	$134,120	$34,760	$168,880
ESD and School District Administrative Expenses***			$29,567
ODOE Administrative Expenses			$205,657
ODOE Program Expenses			$472,481
Total Expenditures	**$10,185,046**	**$11,563,413**	**$22,456,163**

* ESDs no longer receive funds. This change took place after HB 2960 passed in June 2011.
** Some school districts have overlapping utility coverage.
*** There are no longer any ESD Admin Expenses, only School District Admin Expenses.

5.3 Results

Among the 825 schools that are eligible for PPC funds, 773 (94 percent) have completed audits. A total of 6,015 individual energy efficiency measures have been identified in these audits that are currently eligible, and 2,715 (45 percent) of these energy efficiency measures have been implemented. To date, there has not been enough PPC funding available for school districts to implement all the measures identified in the energy audits.

Table 25 shows the results of audits completed during the January 2013 - December 2014 period. During this time, 193 audits were completed across 31 school districts. The audits identified 719 conservation measures that could be installed cost-effectively. If all of these measures were implemented, they would result in annual electricity savings of 8,167,293 kWh and natural gas savings of 942,013 therms. The measures and associated energy savings translate to $1,541,736 in potential utility bill savings each year.

Table 25: ESD/School Districts Audit Results (1/2013 – 12/2014)

Audit Accomplishment	PGE	PacifiCorp	Total
# of Audits Completed	**132**	**61**	**193**
# of School Districts	**14**	**20**	**31**
# of Measures Identified*	**472**	**247**	**719**
Potential Savings Identified in Audits			
Electricity Savings (kWh)	3,937,693	4,229,600	8,167,293
Natural Gas Savings (therms)	574,874	367,139	942,013
Other Fuels (gal)	6,292	33,374	39,666
Total Annual Energy Cost Savings ($)	$764,573	$777,162	$1,541,736
Total Savings (Btu)	71,710,252,709	57,581,990,200	129,292,242,909
Total Cost of Measures Identified	**$17,043,345**	**$16,630,507**	**$33,673,852**

* ODOE continually reviews the eligibility of measures, which can change over time due to facility changes or changes to estimated savings or costs.

PPC funds are also used to install measures identified through the school audits, and the accomplishments related to actual measure installations are shown in Table 26. During the reporting period, 403 measures identified during audits were installed across 35 school districts. Energy efficiency measures that are most frequently installed include: BAS/DDC systems, occupancy sensors, programmable thermostats, lighting retrofits (e.g., T12 to T8 conversions, Metal Halide to linear fluorescents), building envelope measures (e.g., insulation, efficient windows), 90% or higher efficiency condensing hot water heaters, and heating systems (e.g., high efficient boilers, heat pumps). Common operations and maintenance (O&M) measures include calibrations for HVAC and building control systems, building envelope repairs (e.g., replace/repair broken weather stripping and caulking), heating system repairs (e.g., boiler tune-ups, repair leaking steam traps), and repair leaking faucets/fixtures. In total, these measures are expected to save 6,620,960 kWh in electricity and 348,294 therms of natural gas annually.

Total savings to the schools from the installation of these measures is estimated to be $1,506,548 each year. Districts achieve these savings by leveraging the PPC funds shown below to acquire or extend other funds: state energy tax credits, federal grants, and general fund dollars (for the non-energy efficiency portion of projects or when PPC funds have been exhausted). Individual project cost reimbursements are capped based on the annual energy costs savings and the estimated measure life.

Table 26: ESD/School Districts Efficiency Measures Installed (1/2013 – 12/2014)

Measure Accomplishment	PGE	PacifiCorp	Total
# of Audit Measures Installed	**244**	**159**	**403**
# of School Districts	**13**	**25**	**35**
Average Estimated Measure Life (years)*	**16.8**	**18.1**	
Annual Savings			
Electricity Savings (kWh)	2,943,679	3,677,281	6,620,960
Natural Gas Savings (therms)	168,082	180,212	348,294
Other Fuels (gal)	158,052	197,844	355,896
Total Annual Energy Cost Savings ($)	$583,917	$922,631	$1,506,548
Total Annual Energy Savings (Btu)	50,344,258,827	58,794,630,153	109,138,888,980
Total PPC Cost of Measures Installed	**$9,706,665**	**$11,388,934**	**$21,095,599**
Commissioning Costs	**$134,120**	**$34,760**	**$168,880**

* The SB1149 Schools Program went through a Program change in August 2013 that caps SB1149 project reimbursable costs at the Estimated Measure Life.

6 Self-Direct Customers

6.1 Overview

Large commercial and industrial energy customers who fund their own efficiency projects (self-direct customers) can waive a portion of their public purpose charge. The Oregon Department of Energy maintains a database to help these customers individually calculate their monthly PPC responsibility. First, self-direct customers submit notice of efficiency projects to the Department of Energy for approval; projects are certified when completed and certified project amounts are recorded on customers' accounts. These "credits" can then be applied to public purpose charges on customers' utility bills. Self-direct customers who use such credits still qualify for at least 50 percent of Energy Trust incentives for other energy projects at the same site. Eighty-two large electric customers in the PGE and PacifiCorp territories are currently active in the self-direct program or have pending applications.

Note that available project credits can be carried forward month-to-month, so credits claimed do not necessarily equal project expenditures in a given period. From January 2013 through December 2014, self-direct customers in the PacifiCorp service territory claimed $965,494 in credits for conservation and renewable resource projects, and customers in the PGE service territory claimed $5,057,445. Combined, self-direct customers of both utilities claimed $3,718,249 in conservation credit and $2,304,690 in renewable resource credit from January 2013 through December 2014.

6.2 Results

Table 27 summarizes self-direct program conservation activity from January 2013 through December 2014. During this period, self-direction sites implemented projects that involved HVAC system improvements, industrial process modifications, boiler upgrades, lighting changes and variable frequency drives (VFDs). PGE customers certified 18 conservation projects (eight in Washington County, four in Marion County, three in Multnomah County, and three in Clackamas County) with a total eligible cost of $4,930,945. PacifiCorp customers certified five projects in Marion County with a total eligible cost of $70,071. The combined effect of these projects is about 12,600,000 kWh in energy savings annually, or $778,662 in annual energy cost savings.

Table 27: Self-Direct Program Certified Conservation Projects

(1/2013 – 12/2014)

	PGE	PacifiCorp	Total
Projects Certified	18	5	23
Total Eligible Cost	$4,930,945	$70,071	$5,001,016
Total Energy Cost Savings (annual)	$744,119	$34,543	$778,662
Total Energy Savings (annual kWh)	12,074,479	512,255	12,586,734

Table 28 summarizes self-direct program green tag renewable energy purchases from January 2013 through December 2014. PGE customers purchased over 570,000 green tags valued at almost $1.9 million, and PacifiCorp customers purchased about 155,000 green tags valued at approximately $892,000. The combined effect of these contracts is over 725,000,000 kWh of renewable energy purchased annually.

The Oregon Department of Energy incurred administrative costs of $178,790 and program expenses of $84,859 to process all conservation, renewable energy and green tag projects.[15]

Table 28: Self-Direct Program Green Tag Purchases

(1/2013 – 12/2014)

	PGE	PacifiCorp	Total
Sites	34	33	67
Green Tags Purchased	570,372	155,064	725,436
Credits Issued	$1,881,114	$891,774	$2,772,888
Energy Purchased (annual kWh)	570,376,988	155,071,215	725,448,203

[15] ODOE's administrative costs for the self-direct program were different this biennium due to two main factors: the data server was relocated to ODOE facilities to reduce long-term hosting costs, and the database software was updated to improve data security.

7 Summary

Table 29 summarizes the expenditures and results for PPC expenditures from January 2013 through December 2014. The agencies spent a combined total of $164,266,828 on programs and projects completed during this period. Annual energy savings and renewable resource generation achieved from projects completed during this time reached 1,273,754,144 kWh (about 145 MWa). When all fuel types are included in addition to electricity, PPC expenditures resulted in annual savings of 4,432,704 million Btu (MBtu), which is enough to serve approximately 44,300 homes.[16]

Table 29: Summary of PPC Expenditures and Results (1/2013 – 12/2014)

		Results		
Agency / Program	**Expenditures**	**kWh Saved or Generated**	**MWa**	**MBtu**
Energy Trust – Conservation*	$89,116,597	474,682,602	54.19	1,619,617
Energy Trust – Renewables**	$21,733,151	43,486,416	4.96	148,376
School Districts***	$22,456,163	6,620,960	0.76	109,139
OHCS Low-Income******	$24,674,330	10,929,229	1.25	37,292
Self-Direct Customers*******	$6,286,587	738,034,937	84.25	2,518,280
Total Expenditures	**$164,266,828**	**1,273,754,144**	**145.41**	**4,432,704**

* Energy saved excludes savings from reduced transmission and distribution losses. Schools Projects savings of 218,426 kWh have been subtracted from Energy Trust – Conservation savings to prevent double counting, since both Energy Trust and the School Districts support this effort and therefore include the savings in their reports. Energy Trust delivers additional savings to PGE and PacifiCorp through funding authorized under SB 838, and to NW Natural and Cascade Natural Gas under the terms of a stipulation with the OPUC. Energy Trust reports total savings for all expenditures to the OPUC.

** Renewable energy generation is from currently operational projects.

***MBtu for School Districts includes savings from electricity, natural gas, and other fuels.

**** Expenditures for the OHCS Low-Income program include expenditures from the Housing Trust Fund, which does not track energy savings for its projects.

***** Expenditures listed for Self-Direct represent public purpose charges retained and spent by the participating sites in lieu of making payments to the utilities.

[16] Calculated using ODOE's estimate that each home uses 100 Mbtu per year on average.