EVERGREEN ECONOMICS

# Report to Legislative Assembly on Public Purpose Charge Receipts and Expenditures

Report Prepared by Evergreen Economics

Period:
July 1, 2015 – June 30, 2017

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# 1 Executive Summary

## Report to Legislative Assembly on Public Purpose Expenditures

## PPC Fund Distribution

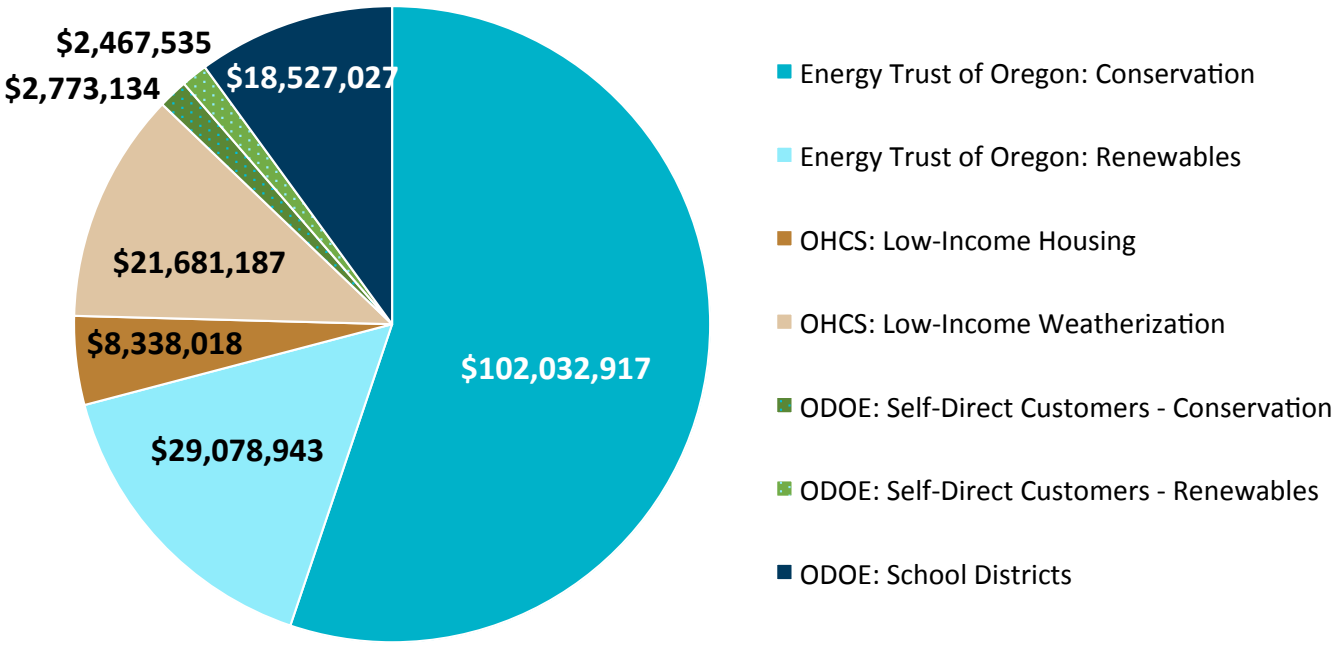
Senate Bill 1149 instituted a public purpose charge (PPC) that established an annual expenditure by two investor-owned electric utilities – Portland General Electric (PGE) and Pacific Power – of 3 percent of their revenues to fund energy efficiency, development of new renewable energy, and low-income weatherization. ORS 757.612, the Oregon statute that outlines the requirements for PPC expenditures, allocates the first 10 percent of collected funds to be distributed to school districts located within PGE's and Pacific Power's service territories. Of the remaining 90 percent balance, the statute designates 63 percent for energy conservation, 19 percent for renewable energy resources, 13 percent for low-income weatherization, and 5 percent for low-income housing. Those designated provisions result in the total allocation percentages of the PPC funds to the five different public purposes highlighted below:

- First 10 percent of funds to School Districts
- 56.7 percent to Conservation
- 17.1 percent to Renewable Energy
- 11.7 percent to Low-income Weatherization
- 4.5 percent to Low-income Housing

**Three entities administer the funds to accomplish the five public purposes. Two are state Oregon Department of Energy (ODOE) and Oregon Housing and Community Services (OHCS). The third is an independent nonprofit organization, Energy Trust of Oregon, which operates under a grant agreement with the Oregon Public Utility Commission.**

Figure ES-1 below shows how total PPC fund receipts were allocated across administrators and program focus from July 2015 through June 2017. The Self-Direct Conservation portion (1.5 percent) plus the Energy Trust of Oregon Conservation portion (55.2 percent) is equal to the 56.7 percent Conservation allocation outlined above. The Self-Direct Renewables portion (1.3 percent) plus the Energy Trust of Oregon Renewables portion (15.7 percent) is equal to the 17.1 percent (rounded) Renewables allocation.

**Figure ES-1: PPC Fund Receipt Allocation By Administrator and Program (July 1, 2015 – June 30, 2017)**



## Receipts and Expenditures Summary

Table ES-1 summarizes the agency receipts and expenditures by PPC fund administrator for the PPC fund from July 1, 2015 through June 30, 2017. Across all of the PPC fund administrators, total receipts combined to be $184,898,760, and the expenditures on programs and projects were $196,519,702 during this period.

**Table ES-1: PPC Receipts and Expenditures Summary (July 1, 2015 - June 30, 2017)**

| Fund Administrator / Program | Receipt Source | | | Expenditures | | |
|---|---|---|---|---|---|---|
| | PGE | Pacific Power | Total | PGE | Pacific Power | Total |
| **School Districts** | $10,753,242 | $7,773,785 | $18,527,027 | $5,167,891 | $1,856,519 | $7,942,187 |
| **Oregon Housing and Community Services**[1] | $17,420,253 | $12,598,952 | $30,019,205 | n/a | n/a | $30,772,161 |
| **Low-income weatherization** | $12,581,294 | $9,099,893 | $21,681,187 | | | |
| **Low-income housing** | $4,838,959 | $3,499,059 | $8,338,018 | | | |
| **Energy Trust of Oregon** | $74,811,872 | $56,299,988 | $131,111,860 | $89,021,036 | $63,543,649 | $152,564,685 |
| **Conservation** | 58,074,692 | 43,958,225 | 102,032,917 | | | |
| **Renewables** | 16,737,180 | 12,341,763 | 29,078,943 | | | |
| **Self-Direct** | $4,284,989 | $955,679 | $5,240,669 | $4,284,989 | $955,679 | $5,240,669 |
| **Conservation** | $2,716,230 | $56,903 | $2,773,134 | | | |
| **Renewables** | $1,568,759 | $898,776 | $2,467,535 | | | |
| **Totals** | **$107,270,356** | **$77,628,404** | **$184,898,760** | | | **$196,519,702** |

[1] OHCS does not track expenditures by utility.

# 2 Background

In July 1999, Senate Bill 1149 (SB 1149) was enacted to establish consistent, reliable funding for investments in energy efficiency and renewable energy for Oregon residents, businesses, and schools. The funding, called a public purpose charge (PPC), comes from customers of Portland General Electric (PGE) and Pacific Power. The funds are invested on the utilities' behalf in low-income weatherization, low-income bill assistance, energy-saving improvements in homes, schools, and businesses, and small-scale renewable energy systems including solar. The PPC was created in recognition that the most affordable way to serve the energy needs of Oregon is through conservation and efficiency, while small-scale renewable energy investments diversify Oregon's energy portfolio. Investments in energy efficiency deliver additional benefits, such as improved air quality and comfort in homes, enhanced productivity in school and business settings, and lower greenhouse gas emissions. The recommendation to dedicate a percentage of utility revenues to these purposes was first proposed during a regional discussion on energy planning for the Pacific Northwest. Oregon Senate Bill 1149 was ultimately passed with support from the state, investor-owned utilities, residential and industrial utility customer representatives, energy and environmental groups, and others. The bill also outlined the specific administrators that were responsible for running the funded programs. The administrators of the various programs funded with the PPC are:

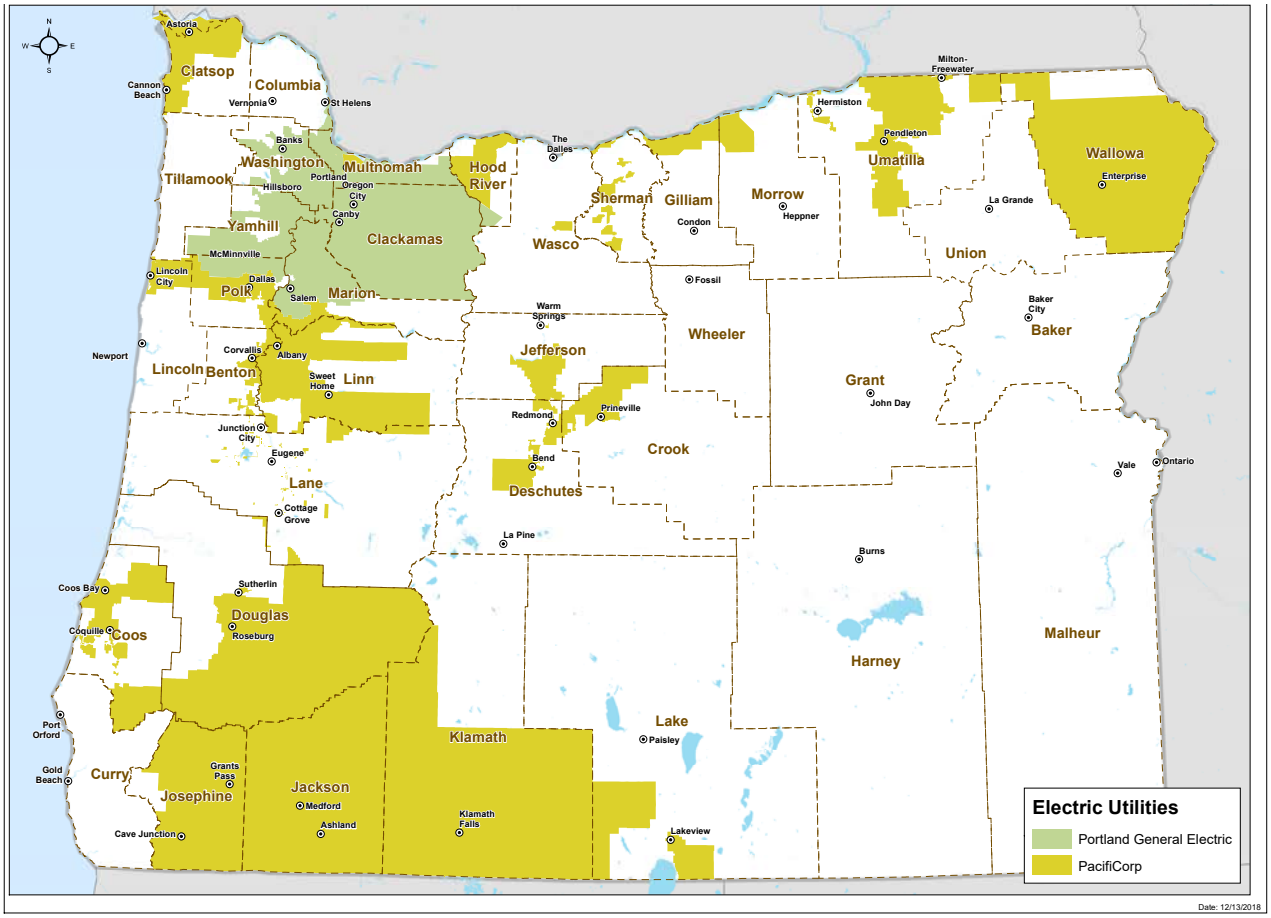
- **School Districts**. Oregon has 111 school districts within PGE's and Pacific Power's service territories. The districts collectively receive the first 10 percent of PPC funds to improve energy efficiency in schools. Oregon Department of Energy (ODOE) facilitates the administration of the Public Purpose Charge (SB 1149) Schools Program. ODOE approves reimbursement of school district PPC funds for allowable expenditures including energy efficiency measures.
- **Oregon Housing and Community Services (OHCS)**. 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 PGE's and Pacific Power's service territories; 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 PGE's and Pacific Power's service territories. 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.
- **Energy Trust of Oregon, Inc**. The non-profit Energy Trust of Oregon 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 territories of Portland General Electric and Pacific Power. Energy Trust receives 73.8 percent of the available PPC

funds less any self-directed funds; 56.7 percent of the total PPC funds are dedicated to conservation programs, and 17.1 percent is dedicated for renewable energy projects.

- **Self-Direct.** In lieu of using Energy Trust incentives, eligible self-directing consumers – which are large commercial and industrial customers using more than one average megawatt of electricity at one site in the prior year – can manage their own energy conservation or renewable energy projects. These "self-direct" customers can deduct the cost of projects, certified by ODOE, from the conservation and renewable resource development portion of their PPC obligation to utilities. ODOE administers the self-direct program.

Given that the PPC funding comes from electric utility customers of PGE and Pacific Power, the goal of the fund is to distribute the resources across the utilities' service territories, which do not cover the entire state of Oregon. The map below outlines the distinct service territories for PGE and Pacific Power (PacifiCorp) across Oregon.

**Figure 2-1: PGE and Pacific Power Service Territories**



In October 2018, 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) for the July 1, 2015 through June 30, 2017 biennium.

Specifically, Evergreen Economics

- Documented PPC disbursements to each PPC fund administrator by PGE and Pacific Power;
- Demonstrated how each PPC fund administrator utilized funds; and
- Summarized important project accomplishments.

This report does not attempt to evaluate how well the various PPC programs are being implemented, nor has Evergreen Economics attempted to independently verify the energy savings and other accomplishments reported by the PPC fund administrators.

The remaining sections in this report describe how each PPC fund administrator used its allocated funds. For comparison's sake, with the exception of Energy Trust (as outlined in Chapter 5), 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;

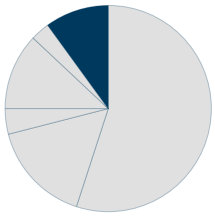
2. General outreach and communication; and

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 miscellaneous expenses

# 3 School Districts

## 3.1 Overview



The first 10 percent of the public purpose charge (PPC) funds are distributed directly to the 111 school districts located within PGE's and Pacific Power's service territories. In cooperation with the school districts, Oregon Department of Energy (ODOE) facilitates the administration of the Public Purpose Charge (SB 1149) Schools Program. More than 820 schools within the 111 school districts are eligible for the program and PPC funding.

These funds are used for energy efficiency projects at individual schools within each school district. Specific guidelines must be followed for eligibility, reporting, and reimbursement processes. School districts may use PPC funds to:

1. Complete energy audits at eligible schools by a qualified energy audit firm. These energy audits identify energy efficiency opportunities (i.e., lighting upgrades, HVAC upgrades, building envelope improvements, etc.);
2. Implement eligible energy efficiency measures; and
3. Complete commissioning services of installed energy efficiency measures that are more complex (program guidelines specify measure categories that are required to have commissioning services completed).

ODOE provides program oversight of the energy audits and energy efficiency projects for the school districts to ensure consistency across the school districts and adherence to the program guidelines. The school districts receive the PPC funds directly from the utilities; however, they need ODOE approval to reimburse eligible expenditures with PPC funds. Prior to HB 2960, which went into law in June 2011, the PPC funds were distributed to the education service districts to manage on behalf of the school districts.


**South Lane SD** completed multiple energy efficiency measures including lighting and control upgrades between two schools

**$27,000**
in estimated energy savings annually

- Better learning environment
- Reduced maintenance

## 3.2 Receipts and Expenditures

Table 3-1 summarizes the number of school districts that received PPC funds, the total fund receipts, and the total expenditures for the July 2015 through June 2017 biennium. The school district expenditures are categorized by audits, installed energy efficiency measures, commissioning costs, school district administrative expenses, ODOE administrative expenses, and ODOE program

expenses. Combined school district and ODOE administrative costs represented approximately 4.6 percent of total program expenditures.

**Table 3-1: School Districts Receipt and Expenditure Summary (July 2015 - June 2017)**

| Transaction | PGE | Pacific Power | Total |
|---|---|---|---|
| **# of School Districts receiving funds** | 42 | 73 | 111 |
| **Total Fund Receipts** | **$10,753,242** | **$7,773,785** | **$18,527,027** |
| **Expenditures** | | | |
| Audits | $221,156 | $235,608 | $456,764 |
| Energy Efficiency Measures Installed | $4,764,251 | $1,504,311 | $6,268,562 |
| Commissioning Costs | $182,484 | $116,600 | $299,084 |
| School District Administrative Expenses | | | $30,271 |
| ODOE Administrative Expenses | | | $335,406 |
| ODOE Program Expenses | | | $552,100 |
| **Total Expenditures** | **$5,167,891** | **$1,856,519** | **$7,942,187** |

## 3.3 Results

Table 3-2 summarizes the key results from the School District PPC fund distribution, highlighted by the number of completed audits and installed energy efficiency measures. During the July 2015 through June 2017 biennium, the program completed 72 audits across 15 school districts. These 15 school districts represent approximately 14 percent of the total school districts that are eligible for PPC funding.

During the same time period, school districts installed 125 energy efficiency measures, 80 percent of which were installed in PGE's service territory. These measures are estimated to save 2,837,956 kWh in electricity and 248,646 therms of natural gas annually. The school districts' total savings from the installed measures are estimated to be $486,599 each year. School districts are able to extend their other funds (e.g., bond funds, maintenance funds, etc.) with their PPC funds to increase their total energy savings.

The program has a maximum reimbursement amount for each eligible measure that caps the reimbursement of PPC funds at the annual energy cost savings multiplied by the estimated measure life. In September 2016, the program guidelines were updated to allow the use of PPC funds and Energy Trust incentives on the same energy efficiency measures. However, the combined PPC funds and Energy Trust incentives must not exceed the maximum reimbursement amount. This co-funding does not increase the total amount of funds that a school district can use

or receive for any eligible energy efficiency measure, but it does effectively save PPC funds to be used on additional measures and could potentially increase the total number of energy efficiency measures implemented within the school district. To date, there has not been an increase of total energy efficiency measures implemented and reported through the program.

**Table 3-2: School District Audits and Energy Efficiency Measure Results (July 2015 - June 2017)**

| | PGE | Pacific Power | Total |
|---|---|---|---|
| **Audits Completed** | 30 | 42 | 72 |
| **# of School Districts – Audits Completed** | 7 | 8 | 15 |
| **Energy Efficiency Measures Installed** | 100 | 25 | 125 |
| **# of School Districts – Measures Installed** | 7 | 9 | 16 |
| **Average Estimated Measure Life (years)** | 16.9 | 19.2 | |
| **Annual Savings** | | | |
| Electricity Savings (kWh) | 2,242,964 | 594,992 | 2,837,956 |
| Natural Gas (therms) | 200,384 | 48,262 | 248,646 |
| Other Fuel (gal) | 18,595 | 11,661 | 30,256 |
| Total Annual Energy Cost Savings ($) | $385,853 | $100,746 | $486,599 |
| Total Savings (Btu) | 30,388,627,532 | 8,587,281,196 | 38,975,908,728 |
| **Total Annual Energy Savings ($)** | **$385,853** | **$100,746** | **$486,599** |
| **PPC Funds on Installed Measures** | **$4,764,251** | **$1,504,311** | **$6,268,562** |
| School District Funds on Installed Measures | $5,337,273 | $1,478,399 | $6,815,672 |
| **Total Cost of Installed Measures** | $10,101,524 | $2,982,710 | $13,084,234 |

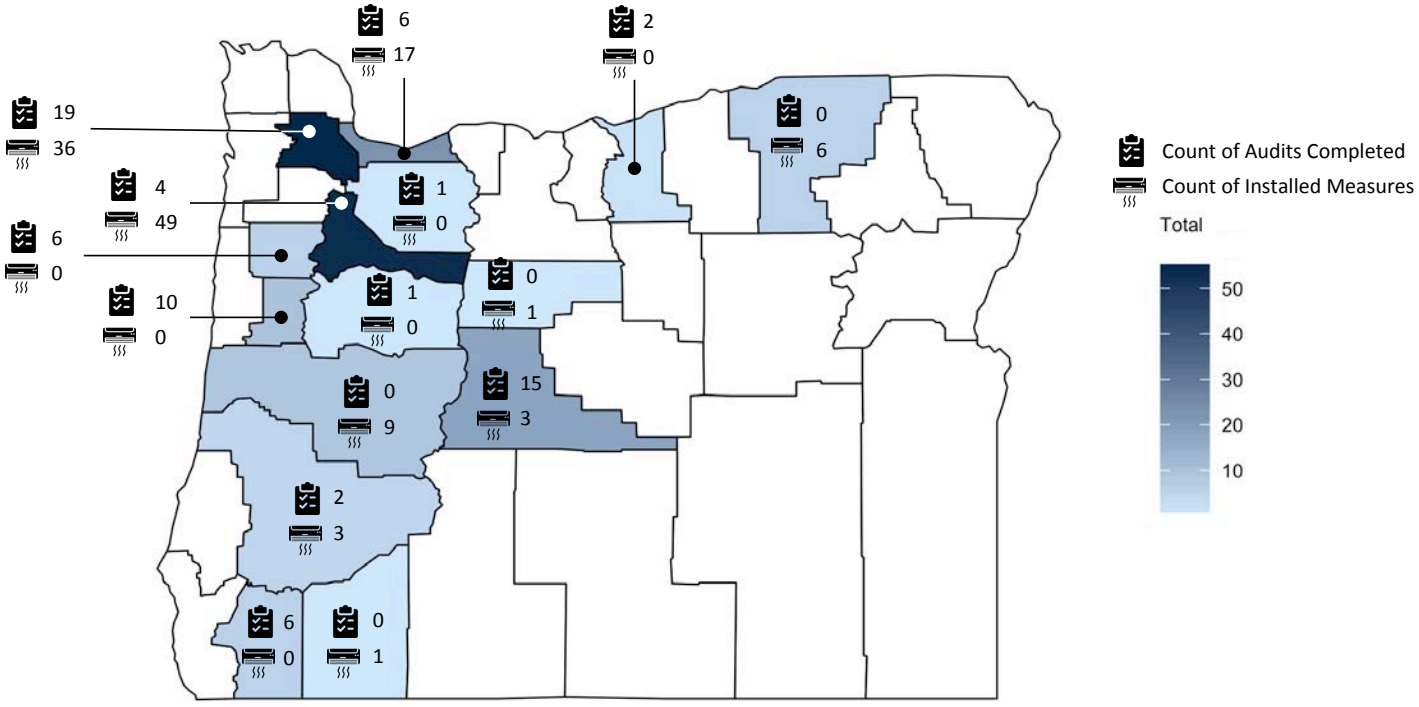
Table 3-3 summarizes the total number of energy efficiency measures installed during this biennium and previous biennia.

**Table 3-3: Number of Energy Efficiency Measures Installed by Biennium**

| | PGE | Pacific Power | Total |
|---|---|---|---|
| Energy Efficiency Measures Installed 2015 – 2017 Biennium | 100 | 25 | 125 |
| Energy Efficiency Measures Installed 2013 – 2015 Biennium | 176 | 57 | 233 |
| Energy Efficiency Measures Installed 2011 – 2013 Biennium | 282 | 123 | 405 |

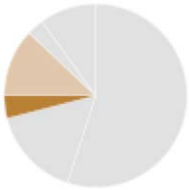
The map below shows the PPC Schools Program completed activities for the 2015-2017 biennium by Oregon county. A total of 15 counties completed energy audits and/or installed energy efficiency measures at school districts.

**Figure 3-1: Completed Energy Audits and Installed Energy Efficiency Measures by County**



# 4 Oregon Housing and Community Services

## 4.1 Overview



The Oregon Housing and Community Services (OHCS) administers programs that provide financial support and resources for Oregonians of lower and moderate income. Programs target homelessness, financing for multifamily affordable housing, and home-ownership development and assistance, among others. The Housing Development Grant Program (HDGP), commonly known as the Housing Trust Fund, receives 4.5 percent of PPC funds. The HDGP is designed 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, and 75 percent of program funds must be used to develop affordable housing that supports households whose gross income is at or below 50 percent of the area median income (AMI) with the remainder serving households up to 80 percent AMI. The majority of program resources are awarded through a competitive application process that occurs twice annually, once for the spring funding cycle and once for the fall funding cycle. Funding preference is given to project applicants who provide services appropriate for the targeted tenant population.

*"Low income weatherization programs blunt the harsh effects of Oregon's increasingly severe winters for vulnerable populations. Families with young children, seniors, and people with disabilities are gravely impacted by extreme weather, and these investments are critical to lowering the costs of heating as well as reducing the climate impacts facing future generations."*

- Margaret Solle Salazar, OHCS Director

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 is partially funded by the PPC and receives 11.7 percent of PPC revenues. That revenue contributes to grants for the construction or rehabilitation of affordable rental housing that is located in PGE's or Pacific Power's 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 AMI. 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 for energy efficient appliances and lighting. The program also provides home weatherization for single- and multi-family, owner occupied, and rental housing). In either case, projects supported by PPC funds for weatherization are required to have a conservation element.

## 4.2 Receipts and Expenditures

Table 4-1 provides a summary of the Low-Income Housing and Weatherization portions of PPC fund receipts and expenditures from July 1, 2015 through June 30, 2017. Funds received by OHCS during this period amounted to $30,019,205, and expenditures including commitments totaled $37,886,200, with administrative expenses comprising 2.7 percent of total expenditures.

**Table 4-1: OHCS Receipt and Expenditure Summary (July 2015 – June 2017)**

| Transaction | PGE | Pacific Power | Total |
|---|---|---|---|
| **Receipts** | | | |
| Low-Income Weatherization | | | |
| Administration | $629,065 | $454,995 | $1,084,060 |
| Evaluation, Training, and Technical Assistance | $629,065 | $454,995 | $1,084,060 |
| ECHO | $9,435,970 | $6,824,919 | $16,260,889 |
| Multi-Family Rental Housing | $1,887,194 | $1,364,984 | $3,252,178 |
| **Total Low-Income Weatherization** | **$12,581,294** | **$9,099,893** | **$21,681,187** |
| Low-Income Housing | | | |
| Administration | $241,948 | $175,003 | $416,951 |
| Program | $4,597,011 | $3,324,056 | $7,921,067 |
| **Total Low-Income Housing** | **$4,838,959** | **$3,499,059** | **$8,338,018** |
| **Total Fund Receipts** | **$17,420,253** | **$12,598,952** | **$30,019,205** |
| **Expenditures** | | | |
| Design and Marketing – TRC | $11,262 | $11,262 | $22,524 |
| Low-Income Weatherization | $13,028,840 | $7,000,543 | $20,029,383 |
| Committed but unexpended | $2,886,256 | $2,199,498 | $5,085,754 |
| Low-Income Housing | | | $7,759,408 |
| Committed but unexpended | | | $1,870,044 |
| Administrative Expenses | | | $1,039,740 |
| Evaluation, training, technical assistance | | | $418,823 |
| Committed but unexpended | | | $26,225 |
| Energy Education | $934,138 | $568,145 | $1,502,283 |
| Committed but unexpended | $66,649 | $65,367 | $132,016 |
| **Total Expenditures (w/o Committed)** | **$13,974,240** | **$7,579,950** | **$30,772,161** |
| **Total Expended including Committed** | **$16,927,145** | **$9,844,815** | **$37,886,200** |

## 4.3 Results

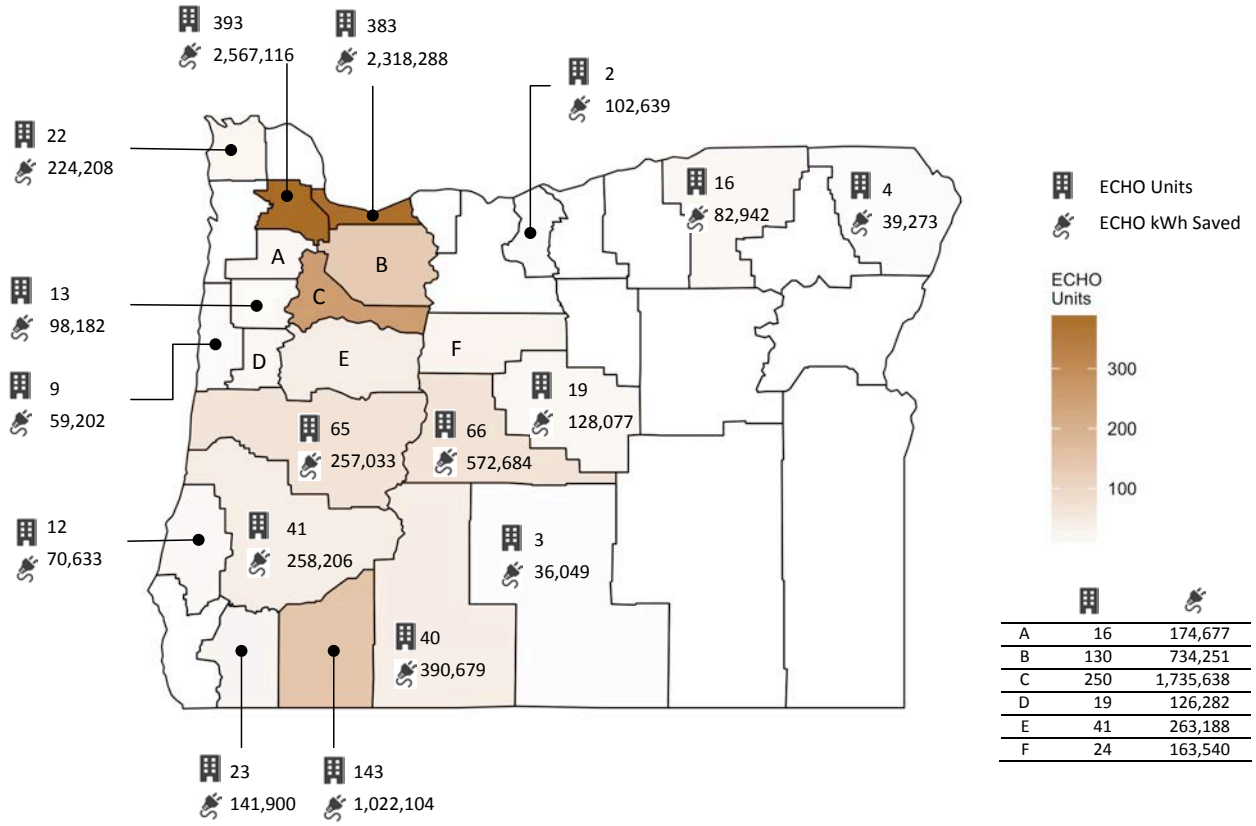
A portion of the PPC funds allocated to OHCS goes into the Energy Conservation Helping Oregonians (ECHO) fund and is used for weatherization projects for low-income households.

OHCS contracts with local community action agencies (CAAs) to deliver the program. This local network of sub-grantees determines applicant eligibility and delivers services. Households must apply through the local CAA and, if eligible, they 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 measures 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

The map below also summarizes how the Low-Income Weatherization program helped fund 1,734 ECHO units with a total job investment of over $9.9 million. The completed ECHO projects helped save over 11.5 million kWh. Across the 1,734 units, 45 percent were completed in Multnomah and Washington Counties, accounting for 49 percent of the total job investment and 42 percent of the kWh savings.

**Figure 4-1: ECHO Units and kWh Saved by County**




| | | |
|---|---|---|
| A | 16 | 174,677 |
| B | 130 | 734,251 |
| C | 250 | 1,735,638 |
| D | 19 | 126,282 |
| E | 41 | 263,188 |
| F | 24 | 163,540 |

Table 4-2 below shows the total number of OHCS Low-Income Weatherization and Housing projects, along with the number of completed units, for each county covered by OHCS programs. Overall, OHCS completed 26 multi-family rental projects through the Low-Income Multifamily Weatherization program with a total of 1,310 units.

*"We can now sleep well at night knowing that we are safe and that we will have a warm place to be this winter. This program has given us peace of mind, reduced our stress, and we now have a calmer existence."*

*- Eric Schwartz, Weatherization program participant*

**Table 4-2: Low Income Weatherization Multifamily Rental Weatherization Projects**

| County | Number of Projects | Number of Units in County |
|---|---|---|
| Polk | 1 | 10 |
| Multnomah | 8 | 405 |
| Deschutes | 1 | 50 |
| Douglas | 2 | 183 |
| Marion | 4 | 179 |
| Washington | 6 | 328 |
| Clackamas | 2 | 105 |
| Benton | 1 | 13 |
| Klamath | 1 | 37 |
| **Total** | **26** | **1,310** |

The 26 multi-family rental Low-Income Multifamily Weatherization projects resulted in 4,438,044 kWh in annual energy savings. The projects also helped serve a diverse population including elderly residents, households, special needs families, veterans, and farm workers.

**Populations Served by Low-Income Multifamily Rental Weatherization Projects**

| 699 | 1,007 | 337 | 85 | 384 |
|---|---|---|---|---|
| Elderly | Families | Special needs | Veterans | Farm workers |

Table 4-3 shows that 43 percent of weatherization projects were completed in units where household income is between 51 and 60 percent of the area median income, and 39 percent of units where household income is between 41 and 50 percent of the area median income.

**Table 4-3: Low-Income Weatherization (Multi-Family) Accomplishments (July 2015 - June 2017)**

| Accomplishments | Total |
|---|---|
| Units where household income is between 61 and 80 percent of the area median income | 31 |
| Units where household income is between 51 and 60 percent of the area median income | 580 |
| Units where household income is between 41 and 50 percent of the area median income | 516 |
| Units where household income is between 31 and 40 percent of the area median income | 90 |
| Units where household income is equal or less than 30 percent of the area median income | 93 |

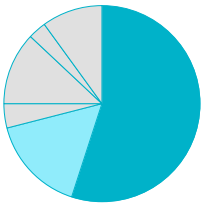
Table 4-4 summarizes the number of projects and the number of units by county.

**Table 4-4: Low-Income Housing Projects (July 2015 - June 2017)**

| County | Number of Projects | Number of Units in County |
|---|---|---|
| Douglas | 1 | 6 |
| Harney | 1 | 20 |
| Lane | 1 | 102 |
| Marion | 1 | 52 |
| Multnomah | 6 | 603 |
| Polk | 1 | 10 |
| **Total** | **11** | **793** |

# 5 Energy Trust of Oregon

## 5.1 Overview



The Oregon Public Utility Commission (OPUC) designated Energy Trust of Oregon, Inc. to administer the conservation and renewable resource components of the public purpose charge (PPC). Energy Trust helps meet the state's utility customer demand with the lowest-cost energy available at a fraction of the cost of other energy sources.

Energy Trust began operation in March 2002, charged by the OPUC with investing in cost-effective energy efficiency, helping to lower the above-market costs of renewable energy resources, delivering services with low administrative and program support costs, and maintaining high levels of customer satisfaction.

Energy Trust provides information, cash incentives, and technical assistance to customers investing in energy-saving or renewable energy projects. Programs are available to renters, homeowners, multifamily property owners, commercial and industrial businesses, nonprofits, and government agencies. Many services are delivered to customers by trade ally contractors and program allies and promoted in collaboration with local communities and nonprofits.

With a commitment to keep internal costs low and ratepayer benefits high, Energy Trust invests in:

- **Saving cost-effective energy efficiency.** Energy efficiency is one of the most affordable resources to power, light, and heat buildings and homes. When Energy Trust provides a cash incentive for an energy-saving improvement or service and helps bring new high-efficiency products and services to the market, customers know the benefits of the investment will outweigh the costs over time. Like many energy efficiency programs nationwide, Energy Trust uses cost-effectiveness tests[2] to inform whether an investment of PPC money in an energy efficiency action will have a benefit that outweighs the cost of the investment.
- **Making it more affordable to install renewable energy systems.** The organization offers early project development assistance and installation incentives for small-scale solar, hydropower, biopower, geothermal systems, and certain wind projects. While SB 1149 did not specify system size for renewables investments, subsequent legislation capped investments at systems of 20 megawatts or less in size. Energy Trust's incentive lowers above-market costs, the difference between the value of the power produced by a renewable energy project and what it costs to produce the power from the project. These

[2] Energy Trust applies the definition of cost-effective in the OPUC's docket UM 551.

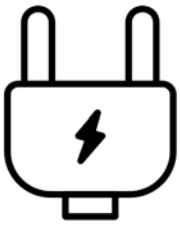
renewable energy projects reduce energy costs, support local economies, diversify energy sources, and help develop the electricity grid of tomorrow.

- **Transforming markets to offer more energy-efficient products and services.** Through ongoing collaboration with the Northwest Energy Efficiency Alliance, Energy Trust works to make energy-efficient products, services, and behaviors standard practice. Utility customers benefit when they purchase appliances and equipment with automatic energy-efficiency features, and newly constructed buildings with energy efficiency built in.

Energy Trust is a nonprofit overseen by a volunteer board of directors and the OPUC. Through a grant agreement with the OPUC, Energy Trust operates to achieve annual minimum performance measures, report quarterly and annually on progress to annual and five-year goals, and contract for an independent management audit every five years.

Following its inception in 2002, Energy Trust funding was expanded by the OPUC to enable more energy savings opportunities. This was accomplished through regulatory agreements with NW Natural, Cascade Natural Gas, and Avista, as well as through Oregon's Renewable Energy Act (SB 838), which allowed PGE and Pacific Power to capture additional, cost-effective electric efficiency above what could be obtained through the three percent charge. This additional SB 838 funding includes additional investments in school buildings beyond the funding allocated through SB 1149. This report addresses only the original conservation and renewable resource public purpose funding through SB 1149.

Visit www.energytrust.org/About to learn more.



**525,624,000 kWh**
Energy saved and generated

**$39.3 million**
Bill Savings

**93%**
Customer satisfaction rating

## 5.2 Receipts and Expenditures

Energy Trust of Oregon receives PPC funding as the primary administrator of the conservation (56.7%) and renewable energy (17.1%) portions of the PPC fund.[3] Table 5-1 summarizes the total receipts and expenditures for Energy Trust of Oregon during the July 2015 through June 2017 biennium. Receipts totaled $131,111,860, while expenditures, including administrative costs (3.6% of expenditures), totaled $152,564,685.

Administrative costs adhere to generally accepted accounting practices for nonprofit organizations and were found to be reasonable by the Oregon Secretary of State in 2018. Administrative costs included program support costs defined in coordination with the OPUC to enable comparison with other recipients of public purpose funding. Program support costs are defined as program costs, except for direct program costs, in the following areas: program management, program delivery, program incentives, program payroll and related expenses, outsourced services, planning and evaluation services, customer service management, and trade ally network management.

**Table 5-1: Energy Trust Receipt and Expenditure Summary (July 2015 – June 2017)[4]**

| Transaction | PGE | Pacific Power | Total |
|---|---|---|---|
| **Receipts** | | | |
| Energy Conservation | $58,074,692 | $43,958,225 | $102,032,917 |
| Renewable Energy | $16,737,180 | $12,341,763 | $29,078,943 |
| **Total Fund Receipts** | **$74,811,872** | **$56,299,988** | **$131,111,860** |
| **Expenditures** | | | |
| Energy Conservation | $63,606,430 | $44,353,457 | $107,959,887 |
| Renewable Energy | $22,223,426 | $16,918,090 | $39,141,516 |
| Administrative Expenses | $3,191,180 | $2,272,101 | $5,463,282 |
| **Total Expenditures** | **$89,021,036** | **$44,145,482** | **$152,564,685** |

[3] As outlined above, a portion of the total conservation and renewable energy distribution of the PPC funds are allocated to eligible Self Direct participants through ODOE's Self Direct program.
[4] Reserve funds were used where expenses exceeded revenue.

## 5.3 Results

Energy Trust conservation and renewable energy activities consisted of the design and delivery of conservation programs targeted to different market sectors with a wide range of energy saving measures. Table 5-2 shows the total energy savings of the individual programs delivered by Energy Trust of Oregon across the residential, commercial and multifamily, industrial, and agricultural sectors, along with the savings attributable to the Northwest Energy Efficiency Alliance (NEEA). Overall, Energy Trust of Oregon's PPC-funded programs accounted for 466,896,129 kWh in energy savings across both PGE's and Pacific Power's service territories.

**Table 5-2: Energy Savings and Levelized Costs[5] by Sector and Utility**

| Sector | PGE (kWh) | Pacific Power (kWh) | Total (kWh) | % of Total Savings | Levelized Cost |
|---|---|---|---|---|---|
| **Residential** | 56,103,828 | 43,135,081 | 99,238,908 | 21% | $0.025 |
| **Commercial and Multifamily*** | 86,180,568 | 66,986,826 | 153,167,394 | 33% | $0.028 |
| **Industrial and Agricultural** | 83,787,729 | 59,079,603 | 142,867,332 | 31% | $0.023 |
| **NEEA** | 42,258,175 | 29,364,320 | 71,622,495 | 15% | $0.011 |
| **Total** | **268,330,299** | **198,565,830** | **466,896,129** | **100%** | **$0.024** |

** PGE and Pacific Power commercial savings were reduced by 252,524 and 159,430 kWh respectively to avoid potential double counting of savings for housing projects with OHCS funding, and were also reduced by 953,432 and 1,967,008 kWh respectively to avoid potential double counting of savings for Public Schools projects with direct school district PPC funding.*

Energy Trust of Oregon also used PPC funding for renewable energy project installations using solar, hydropower, biopower, geothermal, and wind technologies. Energy Trust provides project development assistance and installation incentives for projects that will generate renewable energy from hydropower, biopower, geothermal, and municipal-owned community wind resources. Project development assistance incentives help reduce early stage development barriers and financial risk of these projects. Solar projects at residential, commercial and industrial sites, hydropower projects at irrigation districts, and biopower projects at wastewater treatment facilities are focus areas for project development assistance incentives, given the abundant energy sources and multiple benefits for customers and communities. Table 5-3 summarizes the number of biopower, hydropower, geothermal and wind projects and total incentives by utility and by program. Table 5-4 shows the total amount of renewable energy generation by utility and program.

[5] Levelized cost is Energy Trust's total cost to save or generate each unit of energy over the life of an upgrade, which can range from one to more than 20 years.

**Table 5-3: Biopower, Hydropower, Geothermal and Wind Projects Supported with Project Development Assistance and Project Development Assistance Incentives Provided**

| Renewables | PGE Projects | Pacific Power Projects | Total | PGE | Pacific Power | Total |
|---|---|---|---|---|---|---|
| **Biopower** | 4 | 3 | 7 | $146,666 | $107,426 | $254,092 |
| **Hydropower** | 3 | 37 | 40 | $19,358 | $2,824,991 | $2,844,348 |
| **Geothermal and Wind** | 2 | 12 | 14 | $214,525 | $413,637 | $628,162 |
| **Total** | **9** | **52** | **61** | **$380,548** | **$3,346,054** | **$3,726,603** |

**Table 5-4: Biopower, Hydropower, Geothermal and Wind Projects Renewable Energy Generation by Program (kWh)**

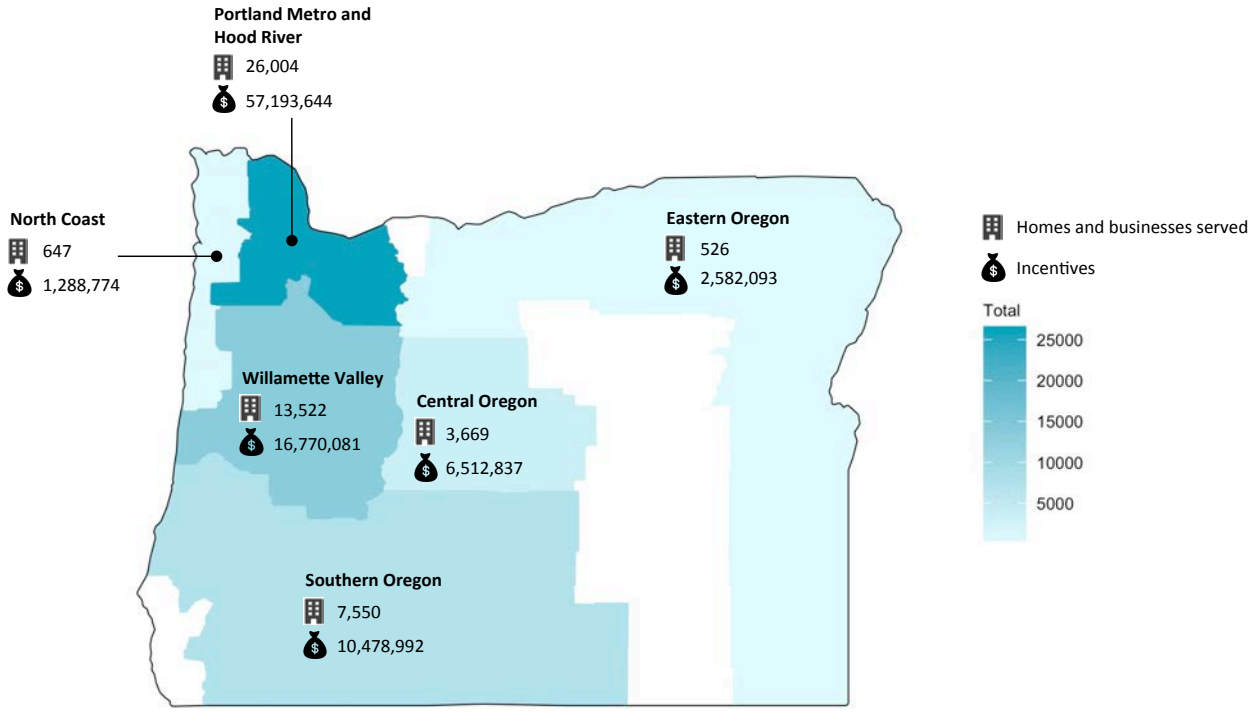
| Program | PGE | Pacific Power | Total |
|---|---|---|---|
| **Solar** | 26,348,962 | 30,360,782 | 56,709,744 |
| **Biopower, hydropower, geothermal, wind** | - | 2,045,257 | 2,045,257 |
| **Total** | **26,348,962** | **32,406,039** | **58,755,001** |

The map below shows the total number of homes and businesses served across all energy efficiency and renewable energy projects by region. Half of the sites served were in the Portland Metro region, accounting for 60 percent of the total paid incentives. The Willamette Valley region had 26 percent of the total sites served by PPC-funded projects (18 percent of incentives), followed by Southern Oregon with 15 percent of the sites served (11 percent of incentives). The vast majority (83 percent) of sites served were residential, followed by 9 percent in the commercial sector, 7 percent in the renewables sector, and 2 percent in the industrial sector. However, as highlighted in Table 5-2, savings are more equally shared across the residential, multifamily and commercial, and industrial and agricultural sectors due to business customers saving more energy per project than residential customers. Approximately 65 percent of incentives were paid based on energy efficiency projects compared to 35 percent coming from renewable energy projects. Other key accomplishments include:

- **2,976,836** LEDs sold or installed
- **1,754** homes built above code and with energy performance scores
- **194** commercial new construction or major renovation projects completed

- **3,615** solar systems installed on homes and businesses
- **$201,657** in enhanced incentives provided for moderate-income customers through Savings Within Reach incentives
- **886** Industrial and agricultural projects completed

**Figure 5-1: Homes and Businesses Served and Total Incentives by Region**




## Case Study: Housing Works, Bend

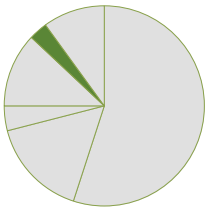
Housing Works worked with Energy Trust to make energy upgrades that help low-income tenants of a 140-unit multifamily housing property in Bend save about $180 per unit a year on their utility bills. Energy Trust provided $56,000 in cash incentives to reduce costs of updated energy-efficient heating and cooling equipment, in-unit appliances, LED light bulbs, faucet aerators, and showerheads.

***"Our collaboration with Energy Trust of Oregon helped us upgrade these properties to more energy-efficient models which helps our low-income residents of multifamily housing reduce utility costs."***

- Keith Wooden, Direct of Real Estate and Facilities, Housing Works

# 6 Self-Direct

## 6.1 Overview



Large electric consumers (with site usage over one average megawatt or 8,760,000 kilowatt hours per year) may be eligible to self-direct a portion of their public purpose charges. The Oregon Department of Energy (ODOE) reviews applications and approves sites that meet eligibility criteria to become eligible self-direct consumers. Self-direct consumers with qualifying energy conservation or renewable energy projects can claim a credit through ODOE's Large Electric Consumer Public Purpose Program (LECPPP), also known as the Self-Direct Program. Renewable energy credits may come from either on-site renewable energy generation projects or the purchase of renewable energy certificates (RECs or Green Tags)[6]. Those credits may then be used to offset the conservation and/or renewable portion(s) of the public purpose charge (PPC) on their monthly electric bills.

ODOE maintains an interactive website for large electric consumers to self-direct their PPCs. On the website, ODOE reviews and approves conservation and renewable energy projects (and Green Tags contracts), and utilities enter monthly billing data for each self-directing site; the website also tracks each site's monthly credits and credit balances. For the biennium, about 75 self-directing sites, representing about 65 companies, self-directed either their conservation or renewable portions of the PPC, or both.

## 6.2 Receipts and Expenditures

Receipts and Expenditures for the Self-Direct portion of PPC work differently than for other areas of the PPC funding:

- Receipts – For the other organizations administering the programs (school districts, OCHS, Energy Trust), utilities collect public purpose charges from consumers, then disburse funds directly to the organizations.
- Expenditures – The other organizations then spend those funds on their respective programs. However, for the Self-Direct program, utilities do not collect the conservation or renewable portions of the PPC from the self-directing sites, nor do they disburse the PPC funds to those sites.

For the Self-Direct program, participating eligible self-directing sites submit conservation and renewable project applications to ODOE on the LECPPP website, and ODOE pre-certifies eligible

[6] "Green Tags", or Renewable Energy Certificates (REC), "represent one MWh of renewable energy generation delivered to the grid. They represent the environmental, economic and social attributes of the power produced from renewable energy projects." (Oregon Administrative Rules Chapter 330, Self-Direction of Public Purposes Charges By Large Retail Electricity Consumers, 10/24/18)

conservation or renewable projects applications. Sites then spend their own funds to build pre-certified projects. Once the project is complete, they submit an application for credit to ODOE. ODOE reviews and approves the project eligible costs which include a small fee paid to ODOE for program administration. Certified project costs are then added to the conservation or renewable credit balance, and the credits do not expire.

For the biennium, ODOE's administration costs of $41,589 and program costs of $55,887, for a total of $97,476, were added to eligible conservation project and Green Tags contract costs.

Each month when a site has a conservation and renewable credit balance, they are able to offset the monthly conservation and renewable portion of the PPC, meaning they do not pay the utility that portion of the PPC. The available credit balance is reduced by the monthly conservation and renewable offset amount. New certified conservation projects and Green Tags increase the site credit while monthly offsets reduce them. For the purposes of this report, the sum of all self-directing sites' conservation and renewable offsets are defined as Self-Direct "Receipts" and "Expenditures."

Table 6-1 shows that from July 2015 through June 2017, self-direct customers in Pacific Power's service territory claimed $955,679 in offsets to the conservation and renewable PPC obligation, and customers in PGE's service territory claimed $4,284,989. While the vast majority of conservation offsets occurred at self-direct sites served by PGE (98%), the renewable offsets were more evenly split between the two utilities, with PGE self-direct sites accounting for 64 percent and Pacific Power self-direct sites accounting for 36 percent of the renewable PPC obligation.

**Table 6-1: Self-Direct Program Receipts and Expenditures (July 1, 2015 - June 30, 2017)**

| Sector | PGE | Pacific Power | Total |
|---|---|---|---|
| **Conservation** | $2,716,230 | $56,903 | $2,773,133 |
| **Renewable** | $1,568,759 | $898,776 | $2,467,535 |
| **Total** | **$4,284,989** | **$955,679** | **$5,240,669** |

## 6.3 Results

Table 6-2 summarizes self-direct program conservation project certifications from July 2015 through June 2017. PGE customers certified eight conservation projects (four in Washington County, three in Marion County, and one in Multnomah County) with total eligible costs of $689,417. Pacific Power customers certified two projects in Baker County with total eligible costs of $218,961. The combined impact of these projects is 3,101,119 kWh in reduced energy consumption and $185,504 in energy savings annually.

**Table 6-2: Self-Direct Program Certified Conservation Projects**

| | PGE | Pacific Power | Total* |
|---|---|---|---|
| **Projects Certified** | 8 | 2 | 10 |
| **Total Eligible Cost** | $689,417 | $218,961 | $908,378 |
| **Total Energy Cost Savings (annual)** | $154,016 | $31,488 | $185,504 |
| **Total Energy Savings (annual kWh)** | 2,675,883 | 425,236 | 3,101,119 |

*Four conservation projects were also completed in Emerald People's Utility District's (EPUD's) territory and are not reflected in the table.

Table 6-3 shows the number of conservation projects—including the four completed outside of PGE's and Pacific Power's territories in Emerald People's Utility District's (EPUD's) territory—by each measure type along with the total costs and annual energy savings. Half of the conservation projects between July 1, 2015 and June 30, 2017 were lighting, accounting for 46 percent of total eligible project costs and 34 percent of total annual energy savings. The largest individual conservation projects included a variable frequency drive (VFD)[7] project (23% of annual energy savings) and an Industrial Process Modification project (24% of annual energy savings).

**Table 6-3: Self-Direct Conservation Projects by Measure Type**

| Measure | Conservation Projects Certified | Total Eligible Cost | Total Annual Energy Savings | Total Annual Reduced Energy Consumption (kWh) |
|---|---|---|---|---|
| Energy Management Systems | 2 | $90,356 | $28,210 | 529,774 |
| HVAC Systems | 2 | $74,114 | $16,103 | 247,740 |
| Industrial Process Modification | 1 | $220,426 | $76,617 | 1,480,242 |
| Lighting | 7 | $606,331 | $115,800 | 2,052,182 |
| Refrigeration | 1 | $207,499 | $29,955 | 404,800 |
| VFDs | 1 | $120,770 | $69,500 | 1,389,999 |
| **Total** | **14** | **$1,319,497** | **$336,185** | **6,104,737** |

Self-directing customers can use the renewables portion of their PPC obligation to purchase Green Tags from their utility. Table 6-4 shows that 73 sites purchased Green Tag contracts between July 2015 and June 2017, worth $2,877,300 in total credits. The average annual kWh per Green Tag

[7] VFDs help improve efficiency by controlling AC motor speed and torque by varying motor input frequency and voltage. VFDs are used in applications ranging from small appliances to large compressors.

contract was 8,557,856 kWh, and in total represented over 770 million kWh of renewable energy across all PGE and Pacific Power self-directing sites.

**Table 6-4: Self-Direct Renewable Green Tag Contracts**

| | PGE | Pacific Power | Total |
|---|---|---|---|
| **Sites** | 40 | 33 | 73 |
| **Green Tag Contracts** | 44 | 46 | 90 |
| **Green Tags Purchased** | 620,576 | 149,638 | 770,220 |
| **Total Credits Issued** | $1,861,640 | $1,015,634 | $2,877,300 |
| **Total Renewable Energy Generated (kWh)** | 620,555,012 | 149,651,984 | 770,207,040 |

The map below shows the distribution of sites purchasing Green Tags along with the associated total annual kWh generated. A little less than half the sites were located in Multnomah and Washington counties, accounting for about 80 percent of the annual kWh generation.

**Figure 6-1: Green Tag Sites and Annual kWh Generated by County**