

2016 Annual Report

NW Natural Washington



ENERGY TRUST OF OREGON
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TABLE OF CONTENTS

I. Introduction, background, oversight and goals	3
II. Annual report highlights	4
III. Annual results	8
APPENDIX 1: Energy efficiency measure counts and savings	11
APPENDIX 2: Customer satisfaction	13

I. Introduction, background, oversight and goals

A. Introduction

This annual report covers 2016, the seventh full year that Energy Trust of Oregon provided services and incentives to residential and commercial customers of NW Natural in Washington. It addresses progress toward annual goals, information on revenues and expenditures, number of completed measures, incentives paid during the year and highlights of program activity.

B. Background

At the request of NW Natural and following approval granted by the Washington Utilities and Transportation Commission (WUTC), Energy Trust began administering NW Natural's demand-side management programs in Southwest Washington on October 1, 2009. The first year was viewed as a pilot. Satisfied with results from the pilot year, in 2011 the WUTC approved Energy Trust's continued administration of conservation programs for NW Natural in Washington.

C. Oversight

The Energy Efficiency Advisory Group (EEAG) was created, at the direction of the WUTC, to provide advice and oversight for NW Natural and Energy Trust energy-efficiency offerings in Washington. The advisory group is comprised of representatives from NW Natural, Energy Trust, WUTC, Washington Public Counsel, Northwest Industrial Gas Users and the Northwest Energy Coalition.

D. Goals

NW Natural, in collaboration with the EEAG, established performance metrics for 2016. This report presents Energy Trust's performance against those goals.

II. Annual report highlights

A. Summary

- **Total 2016 savings were approximately 126 percent of the 2016 annual performance metric** of 263,184 therms in NW Natural's 2016 Energy Efficiency Plan submitted to the WUTC.¹
- **Gas efficiency measures installed in 2016** by NW Natural's Washington customers saved 330,866 total annual therms of natural gas—including 112,709 annual therms in Existing Buildings, 66,106 annual therms in Existing Homes and 152,051 annual therms in New Homes programs.
- **In total, savings achieved in 2016 were 64 percent higher than 2015 savings, due to a strong residential new construction market.** A strong local economy was likely a contributing factor in many homeowners' decisions to make home energy upgrades in 2016, including efficient gas furnace installations and window replacements.
- **The Existing Buildings program fell short of goal, due to low natural gas costs** that made it more challenging to attract and complete Existing Buildings projects and the delay of one large custom project.

B. Commercial sector highlights

Existing Buildings

- **Existing Buildings saved 112,709 annual therms** in 2016, 75 percent of the goal of 151,056 annual therms.
- **Low natural gas costs made it more challenging to attract and complete custom and standard projects.** Although Existing Buildings increased incentive levels for custom projects and some standard commercial offerings in Q1 2016, market uptake was slower than expected.
- **To help boost year-end savings, Existing Buildings launched a midyear bonus for foodservice equipment,** executed a direct marketing campaign for all gas measures in Q4 and expanded outreach staff with a new team member.
- **The program expanded prescriptive measure offers** to the new construction market to create new savings opportunities for commercial customers.
- **Standard projects provided the majority of the year's savings,** primarily from upgrades to foodservice equipment, tank and tankless water heaters, boilers and furnaces. Energy Trust completed 69 standard projects in 2016, up from 33 in 2015.
- **Eight custom projects also contributed savings in 2016,** nearly all from building controls. One large custom project was delayed and is expected to complete in 2017. Eight additional custom projects and four custom studies are in the pipeline for 2017.
- **Energy Trust began serving its first large grocery customer with multiple stores** in Washington, representing a new market sector and expanding savings opportunities for 2017.
- **Existing Buildings launched a new offering to replace failed steam traps at dry cleaners** and laundry facilities, although market uptake has been slow. Under the new offering, the program replaces failed steam traps at no cost to the customer.

¹ Energy Trust's 2016 board-approved budgeted goal for NW Natural territory in Washington differs slightly due to timing. In 2016, savings were approximately 125 percent of Energy Trust's 2016 budgeted goal of 265,079 therms.

- **The program developed new measures to launch in 2017**, including g-force washers that use less water and also remove more water from clothes to facilitate efficient drying, and moisture-sensing dryers that turn off when clothes are dry.
- **Existing Buildings continued to coordinate outreach efforts with Clark Public Utilities** to serve customers exploring and executing projects resulting in gas and electric savings. This coordination often allows customers to receive gas and electric incentives ensuring a greater internal rate of return.
- **The program promoted market adoption of a Building Operator Certificate**, a professional development program created by Northwest Energy Efficiency Alliance and available to eligible professionals working in Washington. Certification helps building operators identify and increase savings opportunities.

C. Residential sector highlights

- **The residential sector saved 218,156 annual therms** in 2016, nearly doubling the annual goal of 112,128 therms.

Existing Homes

- **Existing Homes saved 66,106 annual therms** in 2016, primarily through efficient gas furnaces, gas fireplaces, smart thermostats, Energy Saver Kits and LivingWise kits.
- **HVAC measures contributed 60 percent of Existing Homes savings**, primarily from gas furnaces. The remaining savings were from gas hearths and smart thermostats.
- **Smart thermostats contributed significant savings in 2016**, following the addition of the new measure in late 2015. Smart thermostats were bolstered by Energy Trust incentives and education, increased consumer awareness, simple online purchasing options and seasonal manufacturer promotions.
- **Energy Trust partnered with Clark Public Utilities to distribute 776 LivingWise kits** to sixth-grade students—more than double the number in 2015. LivingWise kits contain efficient showerheads, faucet aerators and LEDs (supported by Clark Public Utilities) and are delivered with an energy efficiency curriculum to students through participating schools.
- **Energy Trust promoted its on-bill financing repayment offering to trade allies**. The offer reduces upfront costs as a barrier to installing energy-efficient upgrades.
- **On-bill repayment financing was used for 18 projects in Washington** in 2016, resulting in savings of 1,479 therms. Customers installed \$136,384 of measures and took out \$127,950 in loans.

New Homes and Products

- **New Homes and Products saved 152,051 annual therms in 2016**, primarily through construction of new energy-efficient homes, including ENERGY STAR® certified homes and EPS homes. EPS is an energy performance scoring tool that measures a newly built home's energy consumption, carbon footprint and utility costs.
- **Energy Trust engaged a thriving residential new construction market to complete 664 EPS homes in Washington**, nearly all built between 20 and 40 percent above code. In 2016, 2,600 residential new construction permits were issued in Clark County. The total Clark County market share of program homes reached 34 percent, up from 18 percent in 2015.

- **New Homes and Products discontinued its ENERGY STAR® offering for new homes and completed transition to an EPS offering.** The successful transition from a flat incentive for home certification to the performance-based EPS gives builders a greater variety of energy-efficiency measures to build into their homes.
- **The program started working with a new high-volume builder** to build EPS homes in Washington.
- **Energy Trust collaborated with the Building Industry Association of Clark County** to coordinate and sponsor the first ever Green Homes Street Fair, which featured two EPS homes.

Trade Ally Network highlights

- **By year-end, 207 trade allies served Washington, up from 191 in 2015, for a net difference of 16.** This includes 75 trade allies based in Washington.
- **Energy Trust enrolled 35 new trade allies serving Washington in 2016.**
- **Energy Trust held two large trade ally events** in Portland's Jantzen Beach area. This venue was chosen based on its proximity to the Washington border to promote attendance of Washington trade allies.
- **Approximately 25 trade allies, distributors, program representatives, utility representatives and other stakeholders** attended a biannual trade ally networking event, hosted in collaboration with Clark Public Utilities.
- **In 2016 Existing Buildings added an additional trade ally coordinator** to support Washington trade allies.

Program evaluations

- **In Q3 2016, Energy Trust completed an Existing Homes process evaluation** for Washington and Oregon, including installation rates of energy-saving showerheads and faucet aerators and associated customer experience. The evaluation provided recommendations on key program focus areas: trade allies, incentives, Energy Saver Kits and marketing. The full Existing Homes process evaluation is available on Energy Trust's website: https://www.energytrust.org/wp-content/uploads/2017/02/Existing_Homes_Process_Evaluation_FINAL_wSR.pdf.

Recommendations include:

- **Trade allies:** Consider further tailoring communications to reflect trade allies' unique businesses, level of program activity, star rating, geography and/or target market. Continue efforts to reach out individually with trade allies to raise awareness of the availability of marketing tools and information resources.
- **Incentive structures and midstream offerings:** Continue to explore different incentive structures that will motivate distributors to sell more efficient equipment to their contractors while streamlining administrative processes.
- **Energy Saver Kits:** Explore customers' experiences and decisions around the number of items received including experience with the online order form. Consider changing the Energy Saver Kit order form to allow customers to specify desired number of items.
- **Marketing:** With the availability of cash-incentives reduced, additional program and marketing approaches may need to be considered.

D. Washington Utilities and Transportation Commission performance metrics

The table below compares 2016 quarterly and annual results to goals, as established in NW Natural's Energy Efficiency Plan for Washington (filed December 2015).

2016 results compared to goals^{2, 3, 4}

Metrics	Goal	2016 YTD	Q1 results	Q2 results	Q3 results	Q4 results
Therms Saved	223,706 - 263,184	330,866	24,195	48,227	73,153	185,291
Total Program Costs	\$1,441,218 - \$1,695,551	\$1,818,821	\$261,402	\$331,106	\$466,681	\$759,633
Average Levelized Cost Per Measure	Less than \$0.65	\$0.41	\$0.81	\$0.54	\$0.44	\$0.31
Dollars Spent Per Therm Saved	Less than \$6.50	\$5.50	\$10.80	\$6.87	\$6.38	\$4.10
Utility Costs at Portfolio Level	Greater than 1.0	1.53	Reported annually	Reported annually	Reported annually	Reported annually

2016 Utility Cost and Total Resource Cost benefit cost ratios by program⁵

Program	Utility Cost Test benefit/cost ratio	Total Resource Cost Test benefit/cost ratio
Existing Buildings	1.18	2.16
Existing Homes	1.43	1.34
New Homes and Products	2.02	0.69
Total NW Natural Washington portfolio	1.61	0.99

2016 Total Utility Cost and Total Resource Cost benefit cost ratios

Program	Utility Cost Test benefit/cost ratio	Total Resource Cost Test benefit/cost ratio
NW Natural Washington Portfolio	1.61	0.99
NW Natural Washington Low Income	0.89	0.74
Total	1.58	0.99

² Achievement of metrics were calculated excluding spending on NEEA gas efforts in Washington.

³ In 2016 annual budget and quarterly reports, Energy Trust applied a discount rate of 4.5 percent. This annual report is calculated using a 5.53 percent discount rate. The 5.53 discount rate will be used in 2017 quarterly and annual reports. The new discount rate is the a result of a new IRP released by NW Natural in 2016.

⁴ Total program costs exclude NEEA and Washington Low Income.

⁵ While Energy Trust is required to report the Total Resource Cost benefit cost ratio, it is not included as a performance metric for utility costs at the portfolio level.

III. Annual Results

A. Activity highlights—sites served

	Q1	Q2	Q3	Q4	Total
Existing Commercial					
Boiler	-	-	-	3	3
Commercial laundry washer	-	-	-	1	1
Commercial tankless water heater	-	-	-	6	6
Condensing tank water heater	-	1	-	4	5
Dishwasher	-	-	-	3	3
Gas convection oven	-	2	1	3	6
Gas combination oven	1	-	-	3	4
Gas fryer	4	12	5	20	41
Gas griddle	-	-	-	1	1
High-efficiency condensing furnace	-	-	-	2	2
High-efficiency condensing unit heater	-	-	1	1	2
Custom	-	-	-	8	8
Pipe insulation	-	-	-	1	1
Roof insulation	-	-	-	4	4
Studies	2	1	-	7	10
Wall insulation	-	-	-	2	2
Existing Homes					
Weatherization (insulation, air and duct sealing and windows)	29	36	37	59	161
Gas hearths	27	20	14	15	76
Energy Saver Kits	8	23	10	8	49
LivingWise Kits distributed through schools	-	360	-	416	776
Smart thermostats	19	29	46	89	183
Gas furnaces	61	74	66	134	335
Water heaters	5	3	8	6	22
Online Home Energy Reviews	22	19	18	25	84
New Homes and Products					
ENERGY STAR home certification	97	58	76	-	231
Clothes washers	-	10	-	-	10
New EPS homes	-	67	293	304	664

B. Revenue

Source	Actual revenue	Budgeted revenue
NW Natural \$	1,937,679 \$	1,741,236

C. Expenditures

		Actual expenditures	Budgeted expenditures	Variance
Commercial programs	Existing Buildings	\$ 581,984	\$ 689,045	\$ 107,061
	NEEA commercial	\$ 25,524	\$ 26,766	\$ 1,242
	Commercial total	\$ 607,508	\$ 715,811	\$ 108,302
Residential programs	Existing Homes	\$ 387,830	\$ 448,583	\$ 60,752
	New Homes and Products	\$ 786,642	\$ 418,230	\$ (368,412)
	NEEA residential	\$ 64,827	\$ 63,998	\$ (830)
	Residential total	\$ 1,239,299	\$ 930,810	\$ (308,489)
Administration	Program administration	\$ 62,365	\$ 57,768	\$ (4,598)
	NEEA administration	\$ 3,208	\$ 3,370	\$ 162
	Administration total	65,573	61,138	(4,436)
Total expenditures		\$ 1,912,381	\$ 1,707,758	\$ (204,622)

Energy Trust allocated budget to NEEA for gas market transformation activities in 2016.

- **Energy Trust spent more on incentives than expected due to increased demand** for EPS homes, furnaces, smart thermostats and electronic ignition fireplaces.

D. Incentives paid⁶

		Actual incentives	Actual expenditures	Percent incentives/expenditures
Commercial programs	Existing Buildings	\$ 308,582	\$ 610,012	51%
	Commercial total	\$ 308,582	\$ 610,012	51%
Residential programs	Existing Homes	\$ 192,075	\$ 394,237	49%
	New Homes and Products	\$ 531,469	\$ 814,572	65%
	Residential total	\$ 723,544	\$ 1,208,810	60%
Total incentives		\$ 1,032,126	\$ 1,818,821	57%

- **Incentives paid account for approximately 57 percent of year-to-date program expenses**, or 63 percent of year-to-date program expenses when total program expense is adjusted down by 15 percent to account for costs that a utility-delivered program would recover through rates.

⁶ NEEA expenditures excluded per NW Natural Washington's Energy Efficiency Plan.

E. Savings⁷

		Therms saved YTD	Annual goal	Percent achieved YTD	\$/therm	Levelized cost/therm
Commercial programs	Existing Buildings	112,709	151,056	75%	\$ 5.41	\$ 0.48
	Commercial total	112,709	151,056	75%	\$ 5.41	\$ 0.48
Residential programs	Existing Homes	66,106	55,054	120%	\$ 5.96	\$ 0.46
	New Homes and Products	152,051	57,074	266%	\$ 5.36	\$ 0.37
	Residential total	218,156	112,128	195%	\$ 5.54	\$ 0.39
	Total savings	330,866	263,184	126%	\$ 5.50	\$ 0.41

Energy Trust allocated budget to NEEA for gas market transformation activities in 2016. While there were no associated savings in 2016, savings are expected in subsequent years.

⁷ In 2016 annual budget and quarterly reports, Energy Trust applied a discount rate of 4.5 percent. This annual report is calculated using a 5.53 percent discount rate. The 5.53 discount rate will be used in 2017 quarterly and annual reports. The new discount rate is the a result of a new IRP released by NW Natural in 2016.

NW Natural Appendix 1: 2016 energy efficiency measure counts and savings

Table 1: Residential sector measures

Category	Measure	Measures installed	Total therms saved
Energy Saver Kits	Energy Saver Kits	49	2,036
	LivingWise kits distributed through schools	776	8,924
Energy Saver Kits total		825	10,960
Online Home Energy Reviews	Online Home Energy Reviews total	84	0
Weatherization	Air sealing	2	51
	Ceiling insulation	15	1,320
	Floor Insulation	6	220
	Duct Insulation	3	25
	Wall insulation	4	299
	Windows	181	6,608
Weatherization total		211	8,523
Space heating	Smart thermostats	183	5,824
	Furnaces	337	27,116
	Gas fireplaces	76	4,962
	Gas fireplace retailer & distributor SPIFs	510	8,159
Space heating total		1,106	46,061
Water heating	Tank water heaters	22	563
Water heating total		22	563
Existing Homes total		2,248	66,106
New Homes and Products	ENERGY STAR home certification	231	26,334
	Gas fireplace retailer & distributor SPIFs	112	2,296
	High-efficiency clothes washers	10	39
	New EPS homes	664	110,864
	Water saving products	1,517	12,517
New homes and products total		2,534	152,051
Grand total		4,782	218,157

Table 2: Commercial sector measures

Category	Measures	Measures installed	Total therms saved
Commercial clothes washers	Clothes washer	1	554
Commercial clothes washers total		1	554
Foodservice equipment	Dishwasher	3	1,027
	Gas convection oven	13	3,926
	Gas fryer	57	32,433
	Gas griddle	1	147
	Gas combination oven	6	1,740
Foodservice equipment total		82	39,273
Shell insulation	Roof insulation	4	3,756
	Wall insulation	2	394
Shell insulation total		6	4,149
Space heating	Gas-fired condensing boiler	4	19,950
	High-efficiency condensing furnace	57	4,156
	High-efficiency condensing unit heater	5	3,321
	Pipe insulation	1	1,480
Space heating total		67	28,908
Water heating	Faucet aerators	25	478
	Commercial tankless water heater	17	2,401
	Condensing tank water heater	7	1,671
Water heating total		49	4,550
Custom	Custom other	8	35,276
	Study	10	0
Custom total		18	35,276
Grand Total		223	112,709

NW Natural Appendix 2: Customer satisfaction

In 2016, Energy Trust conducted short phone surveys of NW Natural customers in Washington to determine satisfaction with their participation in Energy Trust programs. Results from 118 residential customers and fifteen commercial customers indicate a generally high level of customer satisfaction with moderate satisfaction regarding turnaround time to receive an incentive.

In 2016, more than 10 percent of customers submitted applications with missing information, delaying turnaround time to receive incentives. Energy Trust issued incentive checks for 99 percent of all completed applications within eight weeks, the time allowed in the service level agreement.

To improve customer satisfaction with incentive application forms and reduce turnaround time to receive incentives, Energy Trust enhanced paper and web forms to make them easier to complete. In addition, Energy Trust released a new website in 2017 featuring improvements to help Washington customers find appropriate forms faster and more easily.

Table 1: NW Natural Washington residential customer satisfaction 2016

Residential (n=118)	Dissatisfied	Neutral	Satisfied
Overall satisfaction	2%	7%	91%
Incentive application form	5%	10%	85%
Turnaround time to receive incentive	12%	17%	71%

Energy Trust surveyed 15 commercial customers in 2016. Most respondents were satisfied with their overall program experience, incentive amount, ease of applying for the incentive and interaction with program representatives.

Table 2: NW Natural Washington commercial customer satisfaction 2016

Commercial (n=15)	Dissatisfied	Neutral	Satisfied
Overall satisfaction	0	1	14
Incentive amount	0	2	13
Ease of applying for incentive	0	1	13
Interaction with program representative	0	0	11
Performance of project or system	0	0	14
Turnaround time to receive incentive	1	1	13