

2020 Annual Report

NW Natural Washington

ENERGY TRUST OF OREGON

JUNE 1, 2021

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I. Introduction, background, oversight and goals

A. Introduction

This annual report covers 2020, the 11th 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 expenditures, gas savings, projects completed, 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 implementing NW Natural's demand-side management programs in Southwest Washington on October 1, 2009. The first year was viewed as a pilot. In 2011, the WUTC approved NW Natural's use of Energy Trust as implementer of Commercial and Residential 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, Energy Project, Association of Western Energy Consumers and the Northwest Energy Coalition.

D. Goals

NW Natural, in collaboration with the EEAG, established performance metrics for 2020. This report presents Energy Trust's performance against those goals. The total savings goal for the portfolio was 339,331 therms. This is comprised of 227,918 therms for Residential and 111,413 therms for Commercial.

II. Annual report highlights

A. General

- **In 2020, Energy Trust achieved 94% of the annual portfolio goal.**
- **Gas efficiency projects installed in 2020** by NW Natural's Washington customers saved 320,170 annual therms of natural gas—104,586 therms in the Commercial sector and 215,584 in the Residential sector.
- **Shortfalls in the overall goal and sector goals** are largely due to Washington's two-month pause on construction due to COVID-19, which significantly delayed residential construction projects that work with shorter building schedules. It also delayed a handful of commercial buildings projects. (Washington allowed projects that were already started to do some work during the pause, though residential builders were more limited.)

B. Commercial sector highlights

- **The Commercial sector achieved 94% of its annual goal.** A robust set of bonuses approved in May to combat the anticipated downturn in program participation because of COVID-19 helped contribute 21,000 therms.
- A top driver of savings was boilers, contributing 25,000 therms of savings in 2020 and helped by a boiler bonus launched in quarter two. New and existing standard track overperformed thanks to food service and boiler measures.
- COVID-19 posed an obvious barrier to outreach and participation this year. The program experienced numerous event cancellations, which reduced incoming project leads. Food service projects and prospects dropped dramatically during the state's COVID-19 closures for restaurants but quickly rebounded once closure orders were lifted.
- The program recognized 16 school and university projects. These projects represent 38,991 therms saved and included a mix of standard, existing and new buildings projects, along with training and controls upgrades.
- Six school projects that comprise of a total 51,214 therm savings were delayed in 2020 and will be completed and recognized in following years due to pandemic-related construction delays and budget constraints.
- Energy Trust's Washington Building Operator Certification class was delayed and later moved online, which reduced participation, delaying the recognition of savings for each participant who takes the course. (For each successful participant, Energy Trust recognizes 1,877 therms.)
- This year the program realized a diverse mix of savings measures. The largest four savings projects each contributed between 12,000 and 30,000 therms saved.

C. Residential sector highlights

- **The Residential sector achieved 95% of its annual goal.** Despite unprecedented challenges associated with the pandemic, this is just 2 percentage points less than what was achieved in 2019.
- Savings were driven by EPS new construction, gas furnaces and fireplaces, water-saving showerheads, smart thermostats and thermostat optimization. Savings from EPS new construction projects were expected to be even higher and fell short of goal by 37% due to Washington's construction pause.

- About 71% of residential savings in 2020 were delivered by home retrofit upgrades while 25% came from EPS new construction. In 2019, about 57% were delivered by home retrofit while 35% came from EPS new construction. Savings from home retrofit upgrade were higher than expected thanks to Energy Trust bonus incentives, smart thermostat initiatives and thermostat optimization.
- Smart thermostat and thermostat optimization contributed 40% of all residential savings in 2020. Instant incentives for smart thermostats purchased online and in stores (known as Instant Coupons and Direct Ship) and targeted marketing efforts helped smart thermostat savings exceed goal by 16% and quantity by 18% after underperforming in 2019.
 - Direct Ship is a new low-cost thermostat acquisition option tailored to online purchases and direct shipment.
 - In 2020, Energy Trust also claimed market transformation for thermostat optimization savings, which boosted savings.
- Heating system upgrades accounted for 22% of residential savings, helped by a bonus for gas furnaces in the second half of the year. Still, customers did fewer gas furnace and fireplace projects than expected. These are expensive upgrades that customers may have been reluctant to take on in 2020.
- Water-saving devices contributed 7% of all residential savings in 2020, primarily a result of high Energy Saver Kit uptake throughout the year thanks to marketing of this no-cost offer. Kit quantities exceeded goal by 840 units.

D. Trade Ally Network highlights

- By the end of 2020, 345 trade allies served Washington, up from 307 in 2019. This includes 114 trade allies based in Washington.

E. Program evaluations

- **Energy Trust finalized the 2018 Existing Buildings Impact evaluation.** This report can be found online at https://www.energytrust.org/wp-content/uploads/2020/11/PY2018_ExistingBuildings_ImpactEvaluation_wSR.pdf
- **Energy Trust finalized Staff Response to Market Transformation Study of Thermostatic Optimization Services.** This report can be found online at https://www.energytrust.org/wp-content/uploads/2020/11/Thermostat-Optimization-MT-Memo-Final_20AUG2020_wSR-1.pdf

F. Washington Utilities and Transportation Commission performance metrics

The tables below compare quarterly results to 2020 goals, as established in NW Natural's Energy Efficiency Plan for Washington (filed in December 2019).

2020 Results compared to goals

Metric	Goal	2020 Total Annual	Q1 results	Q2 results	Q3 results	Q4 results
Therms Saved	339,331	320,170	25,412	48,450	44,658	201,651
Total Program Costs	\$2,579,667	\$ 2,363,539	\$ 360,998	\$ 533,823	\$ 446,759	\$ 1,021,960
Average Levelized Cost Per Therm	Less than \$0.65	\$ 0.59	\$ 0.92	\$ 0.69	\$ 0.76	\$ 0.47
Utility Cost at Portfolio Level	Greater than 1.00	\$ 2.31	Reported annually	Reported annually	Reported annually	Reported annually

2019 Results compared to goals (for reference)

Metrics	Goal	2019 YTD	Q1 results	Q2 results	Q3 results	Q4 results
Therms Saved	369,196	372,948	28,806	64,080	31,807	248,255
Total Program Costs	\$ 2,432,821	\$2,326,767	\$ 409,701	\$ 464,244	\$ 404,114	\$ 1,048,708
Average Levelized Cost Per Measure	Less than \$0.65	\$ 0.48	\$ 1.07	\$ 0.52	\$ 0.89	\$ 0.34
Utility Cost at Portfolio Level	Greater than 1.0	\$ 2.31	Reported annually	Reported annually	Reported annually	Reported annually

2020 Utility Cost Test and Total Resource Cost Test benefit/cost ratios by program

Program	Utility Cost Test Benefit/Cost Ratio	Total Resource Cost Test Benefit/Cost Ratio
Commercial Programs	2.44	2.40
Residential Programs	2.72	1.40
Total NW Natural Washington Energy Trust Programs*	2.63	1.61
NW Natural Low Income Program (only)	1.69	1.43
Total NW Natural Washington Programs	2.62	1.61
Total Washington Portfolio**	2.57	1.60

- *Does not include NEEA or WA-LIEE expenses
- **Includes costs associated with NEEA's gas market transformation efforts. NEEA results reflect one-year savings and costs only

2019 Utility Cost Test and Total Resource Cost Test benefit/cost ratios by program

Program	Utility Cost Test benefit/cost ratio	Total Resource Cost Test benefit/cost ratio
Commercial	3.94	3.18
Residential	3.88	1.69
Total NW Natural Washington portfolio	3.91	2.12

- 2020 avoided costs were used to calculate BCRs

III. Annual results

A. Activity highlights—sites served¹

	Q1	Q2	Q3	Q4	Total
Commercial					
Aerator	-	1	-	-	1
Boiler	-	3	-	6	9
Building operator certification incentive	-	-	1	4	5
Combination Oven	-	-	-	1	1
Commercial tankless water heater	-	-	-	1	1
Condensing tank water heater	-	3	-	8	11
Conveyer Broiler	-	-	-	2	2
Custom building controls	-	-	-	1	1
Dishwasher	-	1	-	-	1
Gas convection oven	-	-	-	-	-
Gas fryer	2	3	6	22	33
Gas rack oven	-	-	-	-	-
Insulation	1	-	1	1	3
Modulating boiler burner	-	-	-	-	-
New refrigerated cooler doors	-	-	-	-	-
Showerheads	-	1	-	-	1
Steam trap	-	-	1	-	1
Studies	-	-	-	3	3

	Q1	Q2	Q3	Q4	Total
Residential					
Energy Saver Kits	74	10	321	260	665
Gas furnace	58	61	95	188	402
Gas fireplace	14	12	12	12	50
Insulation	3	1	6	8	18
Online Home Energy Reviews	17	15	-	-	32
Smart thermostat	98	73	102	409	682
Tankless water heater	10	5	4	6	25
Windows	29	30	62	67	188
EPS new construction	108	87	92	252	539

¹ Online Home Energy Reviews were retired in May 2020.

B. Revenue

Source	Annual actual revenue	Annual budgeted revenue
NW Natural \$	2,552,283 \$	2,556,283

C. Expenditures

		Annual actual expenditures	Annual budgeted expenditures	Budget variance
Commercial	Commercial \$	761,988 \$	857,317 \$	95,330
	Commercial administration \$	36,503 \$	43,919 \$	7,416
	Commercial Total \$	798,490 \$	901,236 \$	102,746
Residential	Residential \$	1,493,504 \$	1,601,317 \$	107,813
	Residential administration \$	71,545 \$	77,115 \$	5,570
	Residential Total \$	1,565,049 \$	1,678,431 \$	113,383
Total expenditures \$		2,363,539 \$	2,579,667 \$	216,129

- The budgeted expenditures in Energy Trust's system differs from the budgeted expenditures filed in NW Natural's 2019 Energy Efficiency Plan by roughly \$4,914 due to changes made to internal Energy Trust costs that resulted after the efficiency plan was filed.

D. Incentives paid

	Annual actual incentives	Annual actual expenditures	Percent incentives/ expenditures
Commercial \$	343,906 \$	798,490	43%
Residential \$	881,561 \$	1,565,049	56%
Total Incentives \$	1,225,467 \$	2,363,539	52%

- Incentives paid account for approximately 61% of annual program expenses when total program expenses are adjusted down by 15% to account for costs that a utility-delivered program would recover through rates.

E. Savings

		Annual savings	Annual goal	Percent	Levelized
		therms	therms	achieved	cost/therm
Commercial	Existing Buildings - custom	29,831	38,491	78%	
	Existing Buildings - standard	50,890	50,666	100%	
	New Buildings - custom	-	4,275	0%	
	New Buildings - standard	23,865	17,980	133%	
Commercial total		104,586	111,413	94%	\$ 0.64
Residential	Home retrofit	152,033	131,244	116%	
	Midstream and retail	7,293	9,191	79%	
	Small multifamily	1,664	993	168%	
	EPS new construction	54,594	86,490	63%	
Residential total		215,584	227,918	95%	\$ 0.57
Total		320,170	339,331	94%	\$ 0.59

Appendix 1: Energy efficiency measure counts and savings

Table 1: Residential sector measures^{2,3}

Category	Measure	Measures installed	Total therms saved
Energy Saver Kits	Energy Saver Kits total	2,399	14,198
Online Home Energy Reviews	Online Home Energy Reviews total	32	-
Weatherization	Ceiling insulation	15	1,361
	Floor Insulation	3	99
	Wall insulation	3	36
	Windows	262	8,825
	Weatherization total	283	10,321
Space heating	Smart thermostat	683	21,819
	Thermostat Optimization	8	65,199
	Furnace	405	37,250
	Gas fireplace	55	2,933
	Gas fireplace retailer & distributor SPIF	1,114	6,238
	Space heating total	2,265	133,440
Water heating	Retail showerhead	305	669
	Tank water heater retailer & distributor SPIF	15	386
	Tankless water heater	26	1,976
	Water heating total	346	3,031
EPS New Construction	EPS New Construction	539	54,594
Grand total		5,864	215,584

² Totals may not match Table E due to rounding.

³ Online Home Energy Reviews were retired in May 2020.

Table 2: Commercial sector measures⁴

Category	Measure	Measures installed	Total therms saved
Building Operation	Building Operator Certification	5	12,162
Building Operation total		5	12,162
Foodservice equipment	Dishwasher	1	547
	Combination Oven	1	470
	Conveyer Broiler	2	3,131
	Gas convection oven	-	-
	Gas fryer	33	14,314
	Gas Rack Oven	-	-
Foodservice equipment total		37	18,462
Grocery	New Refrigerated Cases w/Doors	-	-
Grocery total		-	-
Weatherization	Insulation	3	3,608
Weatherization total		3	3,608
Space heating	Gas-fired condensing boiler	9	24,626
	Modulating burner boiler	-	-
	Steam trap	1	4,994
Space heating total		10	29,620
Water heating	Aerator	1	31
	Commercial tankless water heater	1	369
	Condensing tank water heater	11	10,465
	Showerhead	1	39
Water heating total		14	10,904
Custom	Custom other	1	29,831
	Study	3	-
Custom total		4	29,831
Grand Total		73	104,586

⁴ Totals may not match Table E due to rounding.

Appendix 2: Customer satisfaction

Energy Trust conducted short web and phone surveys of NW Natural customers in Washington who participated in Energy Trust programs in 2020 to determine their satisfaction with Energy Trust. Results from 170 residential customers and 13 commercial customers indicate a generally high level of customer satisfaction. Most residential customers in Washington were satisfied with their overall program experience, but a small proportion were neutral or dissatisfied with regard to the turnaround time to receive their incentive and the incentive application form.

Table 1: NW Natural Washington residential customer satisfaction 2020

Residential (n=170)	Dissatisfied	Neutral	Satisfied
Overall experience	1%	4%	95%
Incentive application form	2%	5%	94%
Turnaround time to receive incentive	7%	6%	87%

Energy Trust surveyed 13 commercial customers in Washington who participated in 2020. All respondents were satisfied with their overall program experience, incentive amount, ease of applying for the incentive, performance of their project and interaction with program representatives. Most were satisfied with the turnaround time to receive the incentive but a small number were neutral.

Table 2: NW Natural Washington commercial customer satisfaction 2020

Commercial (n=13)	Dissatisfied	Neutral	Satisfied
Overall experience	0%	0%	100%
Incentive amount	0%	0%	100%
Ease of applying for incentive ⁵	0%	1%	100%
Interaction with program representative	0%	0%	100%
Performance of project or system	0%	9%	91%
Turnaround time to receive incentive	0%	14%	86%

⁵ Total is more than 100% due to rounding.

Washington Market Transformation 2020 Program Results

In 2020 NW Natural participated in the Northwest Energy Efficiency Alliance's Gas Collaborative to support regional Market Transformation. Funding is on a regional basis and invoiced based on actuals spent for work on the 5-year plan. There were no activities specific to NW Natural in 2020. The NEEA summary memo can be found on the following pages.

Market Transformation		Budget	Actual
NEEA	Total	\$ 117,648	\$110,273

Market Transformation	Reported Therm Savings
Program Measures	4,943
Codes & Standards Measures*	-
Total Savings	4,943

These are savings allocated by funding share.

**Program Measures* can result in a code or standard. As a result, some of the savings from *Program Measures* are reported as *Codes & Standards Measures*.

The forecast does not include savings from programs in development.

Definitions

-Program Measures: These savings come from measures funded through NEEA's gas programs but not a code or a standard.

-Codes and Standards Measures: These savings come from codes or standards either a part of funded through NEEA's gas programs.

2020 Savings Estimate Summary

NEEA estimates NW Natural's 2020 annual gas energy savings associated with its initiatives is 4,943 Annual Therms⁶ (Table 1). These savings are above the NEEA baseline⁷ and exclude an estimate of savings that NW Natural and local utilities claim through locally run programs. NEEA allocates energy savings based on funder share.

Table 1: 2020 Annual Report Net Market Effects Savings Estimates (Annual Therms)

Program	Gas Program Measures (Net Market Effects)
Efficient Gas Water Heaters	-
Next Step Homes	4,943
Condensing Rooftop Units	-
Total Savings	4,943

Net Market Effects = Total Regional Savings - Local Program Savings - Baseline Savings

Regional Gas Savings Portfolio

This is the second year in which NEEA is reporting natural gas savings. Annual gas savings will increase over time as the programs in the portfolio advance into full-scale market development and as new programs are added to the portfolio.

The 2020 net market effects savings come from Next Step Homes. This program develops and increases market adoption of energy efficient advanced building practices for single-family homes, ultimately influencing and accelerating code adoption. While NEEA's natural gas portfolio began funding Next Step Homes in 2019, this program has been funded by NEEA's electric portfolio for many years. In market transformation the investment comes upfront to create the conditions in the market for the savings stream to follow later. The savings being reported in 2020 come from above-code building activity only. As future residential codes are adopted, NEEA will analyze and report the savings from increased energy efficiency.

Appendix A: Methodology to Forecast Savings

Allocation Methodology

NEEA allocates regional savings (Idaho, Montana, Oregon, and Washington) using shares of investment by funder. These shares vary by funding cycle. Savings from previous investments receive the previous funder share. Savings from current investments receive the current funder share. Table 2 shows the funder shares.

⁶ The term Annual Therms refers to the fact that NEEA reports first-year savings only in order to represent a sustained reduction in load.

⁷ NEEA estimates Baseline as the savings that would have occurred without NEEA, utility, the Bonneville Power Administration, and the Energy Trust of Oregon's market intervention.

Table 2: Funder Shares

Business Plan	Gas Funding Share
2019	2.73%
2020-2021 (f)	3.11%

Gas savings from NEEA's electric-funded programs (electric-only and dual-fuel), such as Residential New Construction, come from the whole Northwest (Montana, Idaho, Oregon, Washington), whereas gas savings from gas-funded programs cover the service territory of just the gas funders (Avista Idaho, Oregon and Washington).

Baseline, Local Programs and Technical Assumptions

This report follows NEEA's method of measuring gas energy savings from market transformation efforts. The baseline is an estimate of the market adoption without intervention by NEEA, Energy Trust of Oregon and utilities. Prior to reporting the savings above the baseline, NEEA removes the savings counted through the local programs. This effort avoids double counting energy savings.

The technical assumptions come from third-party research including NEEA contracted research and the Regional Technical Forum.

Gas Measure Analysis

2020 Regional Engagement

The Regional Technical Forum (RTF) is an advisory committee to the Northwest Power and Conservation Council that meets to review analysis and make decisions on methodologies for estimating energy efficiency savings. With funding and support from NW Natural, the RTF began looking at add gas measures to their portfolio in 2020. In the first year of engagement, the RTF adopted its first gas only measure in November 2020, the Commercial Boilers Systems Standard Protocol. This Standard Protocol will be used to appropriately capture savings of a boiler system by specifying loading order, seasonal efficiency, estimates of load shapes by building type and application type.

Washington Low Income Energy Efficiency Program

2020 Program Results

NW Natural partners with Clark County’s Community Development Office to serve Clark County customers and Washington Gorge Action Programs (WAGAP) serving Skamania and Klickitat counties to administer its Washington Low Income Energy Efficiency (WALIEE) program. While offerings are available in Skamania and Klickitat counties, the agency that serves these counties did not provide services to any customers through WALIEE during 2020. Results below are specific to Clark County’s Department of Community Services.

Program year 2020 was impacted by COVID-19 and related impacts to operations. Weatherization program outreach, enrollment, in-home audits and on-site contractor work were all disrupted. Homes served numbers reflect the nearly total shutdown of efforts in 2020.

In WAGAP’s territory, staffing and limited customers have been the historical challenge for the program’s gas efforts. In 2019 Community Action Council of Lewis, Mason & Thurston Counties (CACLMT) was selected to provide services in WAGAP’s territory. NW Natural continued engagement with the Energy Project and CACLMT, to help address these issues and support gas customers and projects.

The weatherization reimbursement cap changed the for the 2019 program year with the additional Low-Income Program Adjustment. The agencies are allotted 15% of reimbursable job costs for administrative costs and allowed an average of \$1,000 per home for Health, Safety, and Repairs (HSR), which are not subject to cost effectiveness tests. A WALIEE job could cost the program no more than the base \$7,992 plus the Low-Income Program Adjustment of \$5,508 for a total of \$13,500. Projects in 2020 averaged \$6,545.

Measure Analysis

The figure below provides a breakdown of weatherization occurrences by measure, as well as the associated annual therms savings. OBJ

Figure 1: Measure Occurrence and Savings

2016-2021 Efficiency Results

Efficiency Metric	2020	2019	2018	2017	2016
Homes served	3	22	16	13	16
Average Reimbursement per home ⁸	\$4,436	\$8,657	\$5,739	\$5,305	\$4,807
Total Reimbursed	\$13,308	\$190,457	\$91,828	\$68,965	\$76,918
Average estimated therms saved per home ⁹	377	918	474	472	378

⁸ Note reimbursed costs only reflect NWN's contribution for home weatherization. HSR and Admin are excluded.

⁹ An impact evaluation has not been conducted on these homes so the actual per therm savings has not been verified. The therm estimates are based on modeling software estimates which convert financial savings to therm savings.

Total estimated therms saved	1,132	20,170	7,578	6,132	6,048
Estimated Cost per therm	\$11.76	\$9.44	\$12.12	\$11.25	\$12.72

Figure 2: Efficiency Metrics

20120 Performance Metric	Goal	Actual
Homes served	19	3
Max reimbursement per home (Actual figure = avg per home)	\$7,992	\$4,436
Adjustment Program Max (Actual figure =avg per home)	\$5,508	\$0
Average estimated therms saved per home ¹⁰	341	377
Total estimated therms saved	6,480	1,132
Total Expenditure	\$157,624	\$19,635

Figure 3: Performance and Goal Metrics

NW Natural continues to be optimistic that the work with stakeholders and better utilization of data will result in future growth of the WALIEE program. The progress has led to additional pilots and programs, which are anticipated to help development of the program which continues to be positive.

¹⁰ See footnote 2.

Washington Pilot & Trials 2020 Results

Pilots & Trial Programs		Budget	Actual
	Low Income Furnace Tune Ups	\$15,000	\$3,470
	Low Income Program Adjustment	\$105,662	\$0
	Low Income Thermostat Direct Install	\$35,000	\$4,680
	Pilot Total	\$155,652	\$8,150

Low Income Furnace Tune-ups

The program began January 1, which falls in the middle of the heating season. Clark County Weatherization had one client in the spring and two more in the fall. The offering, while reaching a small number of customers, met its objective of quickly serving those customers and helping them stay safe and warm. Customers avoided the use of temporary space heaters, may have non-energy health benefits and the furnaces may be working more efficiently. There have been no therm savings claimed.

Low Income Program Adjustment

In 2019, the company adopted a program model utilized by other gas utilities through this temporary program. In addition to the existing WALIEE offering, partner agencies were eligible for an additional indirect administration assistance plus an increase weatherization project cap up to the state's Matchmaker grant cap. All metrics are reported in the WALIEE section.

Low Income Thermostat

The company partnered with the local consumer owned utility, Clark Public Utilities (CPU), in a direct-to-consumer thermostat program. The company leveraged those efforts to enable gas customers to participate. The costs were estimated to be approximately \$300 per home for installation. All in-home activities were suspended in 2020.