2020 True Up Report

Corrections of 2002-2019 Savings and Generation

Energy Trust of Oregon

Introduction

True up is the annual process used to adjust and correct previous years' energy savings and renewable generation to reflect the best and most up-to-date information available. The true up process adjusts past savings and generation based on:

- Corrections to transaction errors
- Updated measure assumptions
- Evaluation results

This 2020 True Up Report adjusts Reportable Energy Trust savings from **2013-2019**. This report does **not** cover 2020.

This report contains three sections that describe (1) definitions of terms used in this report, (2) savings adjustments and impacts by program, and (3) the difference between pre-True Up and post-True Up savings and generation by sector.

Summary

The 2020 true up resulted in adjustments to Energy Trust's Reportable annual electric and gas savings and renewable energy generation totals. Total electric savings and generation from 2002-2019 decreased by **0.6**%, from **849** average megawatts to **844** aMW; total gas savings from 2003-2019[1] decreased by **3**% percent, from **71** million therms to **69** million therms.

Overall, the largest impacts of the 2020 true up were associated with:

- Realization rate adjustments from the 2018 Existing Buildings Impact Evaluation
- Realization rate adjustments from the 2016-2017 Production Efficiency Impact Evaluation
- Realization rate adjustments from the 2017 New Buildings Impact Evaluation
- Adjustments related to 2018 and 2019 free-ridership estimates for Production Efficiency, Existing Buildings and Existing Multifamily Buildings programs
- Updated NEEA savings results for 2018-2019
- Savings adjustments for Energy Saver Kit water saving devices

The annual changes to electric and gas savings are summarized by program in the Results section below. To help provide context and clarity for readers, the tables showing impacts by program have been updated to compare the evaluated realization rate and free ridership with the figures used to claim and report savings in the given year.

The last section of the report contains a series of tables showing overall changes by sector and for each funding utility within Energy Trust's service territory.

[1] Energy Trust's electric programs began in 2002 and gas programs began in 2003

Definitions and Reasons for Adjustments

Definitions

Working Savings/generation: The estimate of anticipated results at individual sites. This measure of savings is practical for data entry by program personnel while reviewing and approving individual projects. These savings are based on estimates of typical savings or generation for prescriptive measures and site-specific engineering calculations for custom energy-efficiency measures. Transmission and distribution line loss savings are not included in Working savings, and no adjustments are made for free riders (FR), who are customers that would have installed the measures absent program influence, or for spillover, which represents customers who are influenced by the program but did not take the incentive for an efficiency measure. These adjustments are addressed when developing Reportable savings/generation values.[2]

The true up process does not adjust Working savings claimed in the past. Only Reportable savings and generation are adjusted through the true up process.

Reportable Savings/generation: The estimate of savings results that are used to report Energy Trust achievements. Several factors are applied to Working savings to calculate Reportable savings, collectively referred to as the savings realization adjustment factors (SRAF). The SRAF used to convert Working savings to Reportable energy savings is adjusted and updated annually through the true up process based on the most up-to-date information available. The factors in the SRAF include:

- *Realization Rates (RR)*: To adjust the initial estimate of savings, a realization rate of 100 percent indicates that resulting site savings aligned with expectations. The realization rate is typically calculated as part of an impact evaluation or through billing analysis.

- *Market Effects:* Another adjustment is for market effects and is known as a Net-to-Gross ratio. Market effects adjusts for free riders and spillover. The equation below demonstrates how market effects is calculated using free-ridership and spillover estimates.

Market Effects *= 1 – Free-rider Rate + Spillover Rate*

- *Line Losses:* This is an adjustment applied only to electric savings and represents avoided line and transformer losses from saving or generating energy at the customer site. Line losses are assumed to be 10 percent for residential and commercial measures and 6 percent for industrial measures.

Working savings for Energy Trust's commercial and industrial programs are adjusted for reporting by applying a SRAF at the program or track level, while Working savings for Energy Trust's residential programs are adjusted for market effects at the measure level. The SRAF applied to a measure or program's Working savings, for any given program year, is calculated as follows:

SRAF *= Realization Rate ∗ (1 – Free-rider Rate + Spillover Rate) * Line Losses*

Free-rider rates are determined through Fast Feedback, which is a short phone survey with a sample of recent program participants to assess satisfaction, understand customer decision making, and gather suggestions for program and process improvements. The survey is generally 10 or fewer questions and is customized for each program or measure of interest. The goal of

[2] Sometimes Working savings estimates for prescriptive measures do account for free ridership directly in the savings estimate, by using a full market baseline to deem savings.

Fast Feedback is to get accurate answers to important questions within two months of program participation and to minimize the time required of survey respondents.

There are two reasons the evaluation factor is applied differentially across the residential and commercial and industrial programs:

- The Fast Feedback free-rider estimates are sampled at the program or track level for commercial and industrial programs, whereas the residential Fast Feedback results are sampled at the measure-group level (e.g., ceiling insulation, thermostats). This is because commercial and industrial respondents typically cannot recall all the details of a potentially complex project, whereas residential participants purchase a relatively limited number of measures for which they can more readily recall the purchase and decision-making process.

- Realization rates that affect Reportable savings are calculated at the program or track level for commercial and industrial, even if the evaluation also calculates it at the measure level. This is because the sample sizes for individual commercial and industrial measures result in lower confidence and precision levels and are therefore less reliable for program planning.

Anticipated Evaluation Results: Experience shows that evaluated estimates of savings and generation can be either lower or higher than Reportable estimates. Reportable estimates are often based on typical savings for prescriptive measures or engineering analysis for custom measures based on assumptions of how the measure will perform once installed. Impact evaluation uses energy-use data and/or data from post-installation operation to improve Reportable estimates. However, impact evaluations cannot be completed until after enough time has passed to acquire post installation energy use data. Based upon direction from the Energy Trust Board of Directors, staff uses past evaluation results to adjust Reportable savings for programs where data to evaluate results for the current year is not yet available.

For program years where savings have not been evaluated for free ridership or energy savings impact (realization rate), an anticipated evaluation result is applied prospectively in budget planning and annual reporting until actual evaluation results are obtained and savings can be trued up. Anticipated evaluation results are calculated as the average of the last three years of evaluated results, weighted by the savings from each respective year. A program year is closed when evaluation results and free-rider rates for a given program year have been applied to savings in that program year, rather than the anticipated evaluation/free-rider results that are applied before evaluations of that program year are complete.

Beginning with the 2017 True Up Report, we made one procedural change to streamline the annual process and increase the clarity and transparency of the results. That change is to discontinue the past practice of using the most recent anticipated impact evaluation results (i.e. the three-year weighted realization rate used for budgeting) to retrospectively adjust interim years for which no impact evaluation has been completed. By eliminating this step, a program's annual savings remain with the anticipated three-year weighted realization rate until the impact evaluation results are finalized and applied during true up. At this point, the program is then closed for a given year and will not be subject to future true up efforts.

Reasons for Adjustments

True Up adjusts past Reportable savings and Generation estimates in different programs for different reasons, falling into the following categories:

1) Corrections: Occasionally, through Energy Trust's routine quality assurance processes, transaction errors are discovered in the database, which require corrections. Individual transaction errors (e.g., incorrect measure savings for a custom site) are usually adjusted

immediately and generic transaction errors (e.g., out of date deemed savings value for a measure) are fixed once per year during true up.

2) *New Data:* Projections are updated based upon improved measure simulations and new data on measure performance. This is typically done only when reliable data becomes available that impacts a measure's basic assumptions, such a new Federal standard for a piece of equipment. Other reasons might be that new primary research is conducted that overturns long-standing assumptions of equipment performance or baseline. For example, the 2017 true up adjusts savings for past installations of multifamily showerheads based on new baseline flow rates.

3) *Evaluation Results:* Once finalized, evaluations provide the most reliable representation of the annual savings realized and can replace the anticipated results described above. The most up-to-date evaluation results are applied when they become available for the appropriate program year.

Results: Impacts by Program

Existing Buildings

The primary updates to the Existing Buildings program during the 2020 true up are the incorporation of 2018 Existing Buildings Impact Evaluation results, and the 2018 & 2019 free-rider rates.

Table 1 lists the sources for the adjustments that were applied to Reportable savings for the Existing Buildings program.

Table 1: Existing Buildings Evaluation Inputs to the 2020 True Up

Program	Year	Adjustment Source	Type of Adjustment	Notes
Existing Buildings	2018	2018 Existing Buildings Impact Evaluation	Impact evaluation	Link to impact evaluation
Existing Buildings	2018	2018 Fast Feedback survey	Free-ridership	Link to 2018 Fast Feedback report
Existing Buildings	2019	2019 Fast Feedback survey	Free ridership	Link to 2018 Fast Feedback report

Table 2 and Table *3* describe the evaluated components of the SRAF that have been applied to Reportable savings during this true up.

Table 2: Existing Buildings Anticipated and Evaluated Results—Electric

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Electric Realization Rate	Electric Free Ridership	Electric Realization Rate	Electric Free ridership
2018	Impact evaluation	88%	N/A	103%	N/A
2018	Free ridership	N/A	27%	N/A	15%
2019	Free ridership	N/A	22%	N/A	16%

Table 3: Existing Buildings Anticipated and Evaluated Results —Gas

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Gas Realization Rate	Gas Free Ridership	Gas Realization Rate	Gas Free Ridership
2018	Impact evaluation	73%	N/A	79%	N/A
2018	Free ridership	N/A	28%	N/A	22%
2019	Free ridership	N/A	26%	N/A	27%

Table 4 and Table 5 describe the change in total electric and gas savings claimed for the Existing Buildings program as a result of the adjustments described above.

Table 4: Existing Buildings Savings Change—Electric

Year	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2018	104,420,906	140,169,271	35,748,365	34.20%
2019	105,984,228	112,142,360	6,158,133	5.81%

Table 5: Existing Buildings Savings Change—Gas

Year	Savings Pre-True Up (therms)	Trued Up Savings (therms)	Net Change in Savings (therms)	Change in Savings (%)
2018	911,855	1,042,610	130,754	14.34%
2019	1,020,196	1,014,846	-5,350	-0.52%

Existing Multifamily

There were two updates made to the Existing Multifamily program during the 2020 true up. The first was incorporation of the 2018 free-rider rate estimate. The second was incorporation of the 2019 free-rider rate estimate.

Table 6: Existing Multifamily Inputs to the 2020 True Up

Program	Year	Adjustment Source	Type of Adjustment	Notes
Existing Multifamily	2018	2018 Fast Feedback survey	Free ridership	Link to 2018 Fast Feedback report
Existing Multifamily	2019	2019 Fast Feedback survey	Free-ridership	Link to 2018 Fast Feedback report

Table 7 and Table 8 describe the evaluated components of the SRAF that have been applied to Reportable savings during this true up.

Table 7: Existing Multifamily Anticipated and Evaluated Results—Electric

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Electric Realization Rate	Electric Free Ridership	Electric Realization Rate	Electric Free Ridership
2018	Free ridership	N/A	17%	N/A	27%
2019	Free ridership	N/A	20%	N/A	31%

Table 8: Existing Multifamily Anticipated and Evaluated Results—Gas

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Gas Realization Rate	Gas Free ridership	Gas Realization Rate	Gas Free ridership
2018	Free ridership	N/A	32%	N/A	27%
2019	Free ridership	N/A	23%	N/A	33%

Table 9 and Table 10 describe the change in total electric and gas savings claimed for the Existing Multifamily program as a result of the adjustments described above in Table 6.

Table 9: Existing Multifamily Savings Change—Electric

Year	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2018	15,770,845	15,212,612	-558,233	-3.54%
2019	13,609,548	12,478,474	-1,131,074	-8.31%

Table 10: Existing Multifamily Savings Change—Gas

Year	Savings Pre-True Up (therms)	Trued Up Savings (therms)	Net Change in Savings (therms)	Change in Savings (%)
2018	118,955	118,868	-87	-0.07%
2019	183,629	169,194	-14,435	-7.86%

New Buildings

A program wide impact evaluation was completed for the New Buildings program in 2020 for program year 2017[3], which was included for the 2020 true up.

Additionally, a separate evaluation of 4 large New Buildings projects in 2017 and 2018 is included.

Table 11 and Table 12 show the components of the true up that have been applied to Reportable savings for 2017 and 2018 for the New Buildings program.

Table 11: New Buildings Anticipated and Evaluated Results—Electric

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Electric Realization Rate	Savings	Electric Realization Rate	Savings
2017	Impact evaluation	93%	N/A	98%	N/A
2017/2018	Large project evaluations	N/A	12,734,127	N/A	12,493,179

Table 12: New Buildings Anticipated and Evaluated Results—Gas

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Gas Realization Rate	Savings	Gas Realization Rate	Savings
2017	Impact evaluation	95%	N/A	92%	N/A
2017/2018	Large project evaluations	N/A	103,802	N/A	111,189

Table 13 and Table 14 describe the change in total Reportable savings claimed for the New Buildings program for the program years 2017 and 2018, for electric and gas savings, respectively.

Table 6: New Buildings Savings Change—Electric

Year	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2017	48,465,470	51,317,580	2,852,110	5.88%
2018	47,880,646	47,335,454	-545,192	-1.14%

Table 7: New Buildings Savings Change—Gas

Year	Savings Pre-True Up (therms)	Trued Up Savings (therms)	Net Change in Savings (therms)	Change in Savings (%)
2017	872,962	856,145	-16,818	-1.93%
2018	869,407	869,407	0	0%

[3] Available at https://www.energytrust.org/wp-content/uploads/2020/06/2017-New-Buildings-Program-Evaluation-FINAL-wSR.pdf

Production Efficiency

The 2020 true up made adjustments to Production Efficiency program savings based on results from an impact evaluation of the 2016 & 2017 program years[4], and findings from the 2018 and 2019 Fast Feedback surveys of program participants. Industrial Strategic Energy Management savings are not subject to free-ridership adjustments, and thus were not Trued Up this year.

For the free ridership adjustment, results were applied at the track level for electric and gas savings.

Table 15 and Table 16 show the components of the SRAF that have been applied to Reportable savings for 2016-2019 for the Production Efficiency program.

Table 8: Production Efficiency Anticipated and Evaluated Results—Electric

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Electric Realization Rate	Electric Free Ridership	Electric Realization Rate	Electric Free Ridership
2016	Impact evaluation	94%	N/A	75%	N/A
2017	Impact evaluation	94%	N/A	90%	N/A
2018	Free ridership - Standard + Lighting Ele	N/A	20%	N/A	19%
2018	Free ridership - Custom Ele	N/A	20%	N/A	16%
2019	Free ridership - Standard + Lighting Ele	N/A	16%	N/A	25%
2019	Free ridership - Custom Ele	N/A	16%	N/A	25%

Table 16: Production Efficiency Anticipated and Evaluated Results—Gas

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Gas Realization Rate	Gas Free Ridership	Gas Realization Rate	Gas Free Ridership
2016	Impact evaluation	97%	N/A	98%	N/A
2017	Impact evaluation	97%	N/A	94%	N/A
2018	Free ridership	N/A	20%	N/A	19%
2019	Free ridership	N/A	19%	N/A	25%

In addition to the impact evaluation and free rider adjustments, the 2020 true up also includes adjustment to the Production Efficiency program savings for two large project evaluations and an adjustment to large steam trap project savings.

- The evaluated savings from a mega-project, which found that savings were 25% higher than anticipated, were incorporated into true up.

[4] Available at https://www.energytrust.org/wp-content/uploads/2020/08/2016-2017-PE-Impact-Evaluation-Report_FINAL-w-SR.pdf

- An adjustment was made to a 2015 large gas savings project. Energy Trust did not perform an impact evaluation of the 2015 program year, but opted to include this project in the 2016-2017 Production Efficiency impact evaluation. This project accounted for approximately 65% of the program gas savings in 2015
- An adjustment was made to seven large gas steam trap projects in 2017 and 2018. The savings for steam trap measure are lower than expected on an individual project level, based on a few factors:
    - The incentive being strong enough to motivate customers to replace all traps, not just leaking traps, even when they have a survey identifying leaking traps.
    - The customer may have had a trap that is oversized for the actual condensate load.

Table 17 and Table 18 show the true up components from these additional sources.

Table 9: Additional Production Efficiency Adjustments—Electric

Year	Type of Adjustment	Anticipated Results	Evaluated Results
		Electric Realization Rate	Electric Realization Rate
2013	Mega-Project evaluation	100%	125%
2014	Mega-Project evaluation	100%	125%
2015	Large project evaluation	100%	63%

Table 18: Additional Production Efficiency Adjustments—Gas

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Gas Realization Rate	Savings	Gas Realization Rate	Savings
2015	Large project evaluation	100%	N/A	88%	N/A
2017/2018	Steam trap adjustment	N/A	405,288	N/A	64,347

Table 19 and Table 20 describe the change in total annual savings claimed for the Production Efficiency program as a result of 2020 true up adjustments, for electric and gas savings, respectively.

Table 19: Production Efficiency Savings Change—Electric

Year	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2013	145,781,617	152,890,550	7,108,933	4.88%
2014	144,385,863	150,162,747	5,776,884	4.00%
2015	102,806,086	102,211,184	-594,902	-0.58%
2016	117,058,773	93,397,683	-23,661,090	-20.21%
2017	160,100,907	153,288,614	-6,812,293	-4.25%
2018	146,490,183	149,492,360	3,002,177	2.05%
2019	166,578,950	153,071,097	-13,507,853	-8.11%

Table 20: Production Efficiency Savings Change—Gas

Year	Savings Pre-True Up (therms)	Trued Up Savings (therms)	Net Change in Savings (therms)	Change in Savings (%)
2013	993,963	993,963	0	0%
2014	976,563	976,563	0	0%
2015	2,065,834	1,911,872	-153,962	-7.45%
2016	1,447,294	1,462,214	14,920	1.03%
2017	1,332,024	1,288,242	-43,782	-3.29%
2018	2,036,307	1,718,835	-317,472	-15.59%
2019	891,566	839,413	-52,153	-5.85%

New and Existing Homes

The 2020 true up adjusted Existing Homes program savings based on free-rider rate findings from the 2018 and 2019 Fast Feedback surveys of program participants. In addition, the results from a completed analysis of savings in water saving devices included in Energy Saver Kits (ESKs) were incorporated into true up, as well as an adjustment to the New Manufactured Homes program savings to correct processing errors.

The analysis of ESK water saving devices (https://www.energytrust.org/wp-content/uploads/2021/01/ShowerheadAnalysisFinalwSR.pdf) indicated reductions in both electric and gas savings:

- Savings from showerheads and faucet aerators in kits from 2013-2016 were negligible.
- Savings from showerheads, shower wands and faucet aerators in kits in 2017-2018 were significantly less than was than originally reported (we retained 33% of energy savings from showerheads and 85% of energy savings from shower wands).

Table 21 describes the total changes to water device savings from 2013 to 2018.

Table 10: True up inputs—Water Saving Devices

Year	Type of Adjustment	Anticipated Results		Evaluated Results	
		Electric Savings (kWh)	Gas Savings (therms)	Electric Savings (kWh)	Gas Savings (therms)
2013	Impact Evaluation	9,676,791	237,549	0	0
2014	Impact Evaluation	12,843,377	387,570	0	0
2015	Impact Evaluation	16,800,266	398,326	0	0
2016	Impact Evaluation	16,002,687	416,834	0	0
2017	Impact Evaluation	4,971,722	217,812	1,058,626	217,812
2018	Impact Evaluation	4,493,417	128,330	1,396,508	128,330

Table 22 and Table 23 describe the change in total savings claimed for the Existing Homes and Products program for 2017, for electric and gas savings, respectively.

Table 11: New and Existing Homes Savings Change—Electric

Year	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2013	25,116,374	18,344,551	-6,771,823	-26.96%
2014	38,879,553	23,507,327	-15,372,226	-39.54%
2015	42,065,681	25,058,450	-17,007,231	-40.43%
2016	37,233,285	21,363,497	-15,869,788	-42.62%
2017	25,169,143	21,373,300	-3,795,843	-15.08%
2018	24,143,107	20,657,755	-3,485,352	-14.44%
2019	25,026,370	24,840,304	-186,066	-0.74%

Table 12: New and Existing Homes Savings Change—Gas

Year	Savings Pre-True Up (therms)	Trued Up Savings (therms)	Net Change in Savings (therms)	Change in Savings (%)
2013	551,798	397,737	-154,061	-27.92%
2014	867,811	417,056	-450,755	-51.94%
2015	868,400	474,806	-393,594	-45.32%
2016	1,004,098	594,242	-409,856	-40.82%
2017	1,013,194	865,054	-148,139	-14.62%
2018	1,000,843	907,550	-93,293	-9.32%
2019	1,118,208	1,108,483	-9,726	-0.87%

Northwest Energy Efficiency Alliance

2018 and 2019 savings for NEEA were revised in the 2020 true up as a result of updated savings estimates reported by NEEA. Savings for the industrial sector increased for 2020, while the commercial sector and the residential sector savings decreased.

According to NEEA internal savings reports, increases in savings for the industrial sector were primarily the result of allocating a larger proportion of units from the federal motor standard to the industrial sector than previously estimated anticipated.

The commercial sector decreases were the result of less new construction than estimated and fewer units allocated to the commercial sector for the federal motor standard. The residential sector's decrease in savings was primarily due to reductions in expected savings from NEEA's ductless heat-pump and efficient dryer initiatives.

NEEA's savings revisions for 2018-2019 also included, as always, updated savings estimates for other NEEA initiatives based on final market data and updated service-territory allocations.

Table 24 shows the change to total Reportable electric savings claimed for NEEA market transformation initiatives by sector for 2017.

Table 13: 2018 and 2019 NEEA Electric Savings Change

Year	Sector	Savings Pre-True Up (kWh)	Trued Up Savings (kWh)	Net Change in Savings (kWh)	Change in Savings (%)
2018/2019	Commercial	35,923,863	29,625,822	-6,298,041	-17.53%
2018/2019	Industrial	8,047,873	13,354,160	5,306,287	65.93%
2018/2019	Residential	70,702,668	68,123,850	-2,578,818	-3.65%

Results: Impacts by Sector and Utility

The following tables summarize the changes in total annual electric and gas savings for 2002-2019 as a result of 2020 true up adjustments. In the tables below, an average megawatt (aMW) means that loads are reduced by an average of one megawatt - or 8,760 MWh - during each year of a measure's estimated useful life. Where units are listed as million therms (MMTh), this reflects the annual gas savings achieved in each year of a measure's useful life, stated in millions of therms.

Tables 25 and 26 describe the change to total Reportable savings[5] claimed by Energy Trust for the years 2002-2019.

Table 14: Electric Savings Impact 2002-2019

Sector	Savings Pre-True Up (aMW)	Trued Up Savings (aMW)	Net Change in Savings (aMW)	Change in Savings (%)
Commercial	281.15	285.29	4.1	1.47%
Industrial	229.19	227.11	-2.1	-0.91%
Residential	247.85	240.39	-7.5	-3.01%
Total	758.20	752.79	-5.4	-0.71%

Table 15: Gas Savings Impact 2002-2019

Sector	Savings Pre-True Up (MMTh)	Trued Up Savings (MMTh)	Net Change in Savings (MMTh)	Change in Savings (%)
Commercial	28.65	28.74	0.09	0.31%
Industrial	12.34	11.79	-0.6	-4.46%
Residential	30.39	28.73	-1.7	-5.46%

The following tables show final Reportable annual savings and generation totals for each of the utilities in Energy Trust's service territory after the 2020 true up adjustments were implemented.

Table 16: PGE savings and generation (aMW), 2002-2019[6]

Year	Commercial	Industrial	Residential	Total
2002	3.95	1.81	3.61	9.37
2003	4.03	0.89	3.84	8.76
2004	4.24	1.17	5.32	10.73
2005	5.18	14.22	5.01	24.41
2006	3.93	2.85	6.94	13.72
2007	3.78	3.75	8.37	15.9
2008	5.57	2.86	8.22	16.65
2009	7.11	4.49	5.71	17.31
2010	10.47	8.77	7.31	26.55
2011	10.99	8.92	8.51	28.42
2012	13.81	10.74	10.46	35.01
2013	12.37	13.57	8.72	34.66
2014	12.59	11.59	11.24	35.42
2015	11.95	7.04	10.98	29.97
2016	15.1	6.59	13.16	34.85

[5] The savings here are total first-year annual savings only, and do not reflect the lifetime of savings.

[6] Historical utility savings differ from 2020 true-up report as savings are now derived from Energy Trust SSRS reports.

2017	17	12.27	13.16	42.43
2018	18.44	11.65	7.08	37.17
2019	15.29	10.69	6.03	32.01
Total	**175.8**	**133.87**	**143.67**	**453.34**

Table 28: Pacific Power savings and generation (aMW), 2002-2019

Year	Commercial	Industrial	Residential	Total
2002	1.94	1.62	2.11	5.67
2003	1.73	2.68	2.64	7.05
2004	3.14	8.66	3.61	15.41
2005	2.41	5.96	3.36	11.73
2006	1.69	4.98	4.61	11.28
2007	2.05	4	6.31	12.36
2008	2.74	3.83	5.51	12.08
2009	3.1	3.51	3.57	10.18
2010	7.86	7.06	5.29	20.21
2011	8.26	6.55	5.33	20.14
2012	10.77	5.67	6.43	22.87
2013	11.34	4.73	5.57	21.64
2014	6.81	5.92	7.77	20.5
2015	8.75	4.79	7.3	20.84
2016	9.63	4.21	8.55	22.39
2017	10.23	5.34	8.86	24.43
2018	9.36	6.24	5.36	20.96
2019	7.7	7.48	4.53	19.71
Total	**109.51**	**93.23**	**96.71**	**299.45**

Table 29: NW Natural savings (MMTh), 2002-2019

Year	Commercial	Industrial	Residential	Total
2002	0.00	0.00	0.00	0
2003	0.00	0.61	0.00	0.61
2004	0.08	0.92	0.00	1
2005	0.44	0.95	0.00	1.39
2006	1.29	0.95	0.00	2.24
2007	1.15	1.13	0.00	2.28
2008	1.1	1.34	0.01	2.45
2009	1.1	1.2	0.19	2.49
2010	2.01	1.39	0.54	3.94
2011	1.91	1.58	1.01	4.5

2012	2.05	2.51	0.57	5.13
2013	1.41	1.98	0.94	4.33
2014	2.22	1.53	0.94	4.69
2015	1.74	1.51	1.86	5.11
2016	2.62	1.84	1.45	5.91
2017	2.32	2.24	1.27	5.83
2018	2.11	2.41	1.67	6.19
2019	2.16	2.04	0.75	4.95
Total	**25.71**	**26.13**	**11.2**	**63.04**

Table 17: Cascade Natural Gas savings (MMTh) 2002-2019

Year	Commercial	Industrial	Residential	Total
2002	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00
2006	0.02	0.05	0.00	0.07
2007	0.13	0.02	0.00	0.15
2008	0.12	0.05	0.00	0.17
2009	0.13	0.07	0.05	0.25
2010	0.07	0.2	0.05	0.32
2011	0.11	0.22	0.09	0.42
2012	0.15	0.15	0.09	0.39
2013	0.11	0.13	0.06	0.3
2014	0.13	0.23	0.04	0.4
2015	0.13	0.3	0.05	0.48
2016	0.18	0.29	0.02	0.49
2017	0.21	0.29	0.02	0.52
2018	0.21	0.35	0.04	0.6
2019	0.18	0.25	0.07	0.5
Total	**1.88**	**2.6**	**0.58**	**5.06**

Table 18: Avista savings (MMTh) 2002-2019

Year	Commercial	Industrial	Residential	Total
2002	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00
2007	0.01	0.00	0.00	0.01

2008	0.01	0.00	0.00	0.01
2009	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00
2016	0.03	0.00	0.00	0.03
2017	0.23	0.1	0.01	0.34
2018	0.24	0.16	0.01	0.41
2019	0.19	0.17	0.02	0.38
Total	**0.71**	**0.43**	**0.04**	**1.18**