



In the Community to Serve®

2022-2023 Biennial Conservation Report



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Cascade Natural Gas Corporation Biennial Conservation Achievement Report Calendar Year 2022-2023

Background

Cascade Natural Gas Corporation's (CNGC, Cascade, or the Company) Energy Efficiency Department presents this Biennial Conservation Achievement Report of 2022-2023 Energy Efficiency Program accomplishments and activities, satisfying the commitment made by the Company in Docket UG-210838 Attachment A Biennial Conservation Plan (BCP) Conditions. This report contains the 2023 Annual Report and the Biennial report for years 2022-2023. Per the commitment made by CNGC this report shall be submitted to the Washington Utilities and Transportation Commission (WUTC) by June 15 each year, with advance copies provided to the Company's Conservation Advisory Group (CAG) 30 days prior to Commission filing. The report contains the following:

- Planned and claimed gas savings from conservation, including a description of the key sources of variance between the planned and actual savings
- Budgeted and actual expenditures made to acquire conservation through the conservation cost recovery adjustment described in Condition 12
- The portfolio- and program-level cost-effectiveness of the actual gas savings from conservation
- The biennial conservation target
- A discussion of the steps taken to adaptively manage conservation programs throughout the preceding year
- All program evaluations completed in the preceding year
- Program outreach in 2022-2023

Annual Report Acronyms

AEG	Applied Energy Group
BCP	Biennial Conservation Plan
C/I	Commercial/ Industrial
CAG	Conservation Advisory Group
CNGC	Cascade Natural Gas Corporation
CO₂e	Carbon Dioxide Equivalent
CPA	Conservation Potential Assessment
DBtC	Direct Benefit to Customer
DSM	Demand Side Management
EE	Energy Efficiency
EEIP	Energy Efficiency Incentive Program
EM&V	Evaluation Measurement & Verification
ESK	Energy Saving Kit
EWIP	Enhanced Weatherization Incentive Program
HE	High Efficiency
IRP	Integrated Resource Plan
LIW	Low Income Weatherization
MOU	Memorandum of Understanding
NEEA	Northwest Energy Efficiency Alliance
NEI	Non-Energy Impact
PIV	Post Installation Verification
POS	Point of Sale
PUX	Public User Experience
QC	Quality Control
RCW	Revised Code of Washington
RFP	Request for Proposal
RTF	Regional Technical Forum
SCC	Social Cost of Carbon
SEM	Strategic Energy Management
TA	Trade Ally
TRC	Total Resource Cost Test
UCT	Utility Cost Test
UEF	Uniform Energy Factor
WAP	Weatherization Assistance Program
WIP	Weatherization Incentive Program
WSEC	Washington State Energy Code
WUTC	Washington Utilities and Transportation Commission

Cost-Effectiveness Inputs

Avoided Costs for calculating annual achievements coincide with the tariffs in effect at the time of Program participation. For 2022-2023, the Residential and Commercial/Industrial (C/I) cost-effectiveness is calculated based on the Avoided Costs in the 2020 Integrated Resource Plan (IRP). As required by Revised Code of Washington (RCW) 80.28.380 this set of Avoided Costs includes the Social Cost of Carbon (SCC)¹.

Demand Side Management (DSM) inputs include a 3.4% long-term discount rate and an inflation rate of 2.0% for the Avoided Costs from the 2020 IRP; these inputs are applicable to the Residential, C/I, and Low-Income Weatherization Programs. Please note these rates were used to develop the 2022-2023 BCP in 2021 and do not reflect updates that may have taken place since 2021.

Discrete non-energy impacts (NEI) are calculated per measure for the Residential and C/I Programs. Cascade revised the NEIs included in its cost-effectiveness calculations for the Residential and C/I Programs as part of Phase Two of its 2021 Conservation Potential Assessment (CPA). Further information on Program NEIs can be referenced in UG-210838 CNGC 2022-2023 BCP². These non-energy impacts traditionally have the greatest influence on the Total Resource Cost (TRC) test which is included in this report. However, for the purposes of Program evaluation Cascade applies the modified Utility Cost Test (UCT) as required by the BCP conditions document under UG-210838³.

In compliance with House Bill-1257 the Company completed Phase two of its CPA update in the first half of 2021; Phase One was completed in the summer of 2020. This CPA, performed by Applied Energy Group (AEG), used the Avoided Costs from the Company's 2020 IRP. The findings of this CPA were used in the 2022-2023 BCP submitted by the Company in Q4 of 2021.

Goal Setting

The Company's Energy Efficiency (EE) portfolios are periodically reevaluated and updated to balance cost-effectiveness (using current Avoided Costs), participation outcomes, new legislation, and updated building codes. The Company confers with its Conservation Advisory Group (CAG) when alterations to the Program portfolios are necessary.

The Company has used the LoadMAP forecasting tool as the end use planning software for the DSM section of the IRP and Program planning since Q2 2018. One of the primary benefits of this forecasting tool is alignment with regional standard practices per the Northwest Power and Conservation Council and its ability to run the forecast based on a methodology consistent with the National Action Plan for Energy Efficiency *Guide for Conducting Energy Efficiency Potential Studies*⁴. In alignment with the

¹ RCW 80.28.280 Gas Companies-Conservation Targets | [RCW 80.28.380 \(wa.gov\)](https://leg.wa.gov/RCW/default.aspx?cite=80.28.380)

² Docket UG-210838-CNGC-2022-2023-BCP-Plan-11-01-21.pdf pgs. 31-33 November 3, 2021. | [UTC \(wa.gov\)](https://www.wa.gov/UTC)

³ Docket UG-210838 Attachment A.pdf January 18, 2022 | [UTC \(wa.gov\)](https://www.wa.gov/UTC)

⁴ [Guide for Conducting Energy Efficiency Potential Studies | Climate and Energy Resources for State, Local, and Tribal Governments | US EPA](https://www.epa.gov/energy-efficiency-potential-studies)

Environmental Protection Agency guide, “Three types of potential were developed as part of this effort: technical potential, achievable technical potential, and achievable economic potential”⁵. During Phase Two of the 2020 CPA, AEG adapted the 2021 ramp rates from the Northwest Power and Conservation Council for use with each measure included in the CPA⁶.

As goal setting is only an estimate, the achievable economic level of potential savings identified by a model is unable to fully account for industry changes which can also have a large impact on Program performance, such as the implementation of the 2018 Washington State Energy Code (WSEC) or changing market conditions that affect supply chains or consumer willingness to invest in energy efficient upgrades. For more information on how the Company adapts to these challenges please reference the [Quality Management System](#) section of this report.

Summary of 2022-2023 Program Achievements

2022-2023 required the Company’s Energy Efficiency Incentive Programs (EEIP) to fully embrace adaptive management practices to maintain Program momentum and customer support. In 2022-2023, Cascade focused on increasing participation levels in the face of high inflation and a decrease in New Home Program rebates as a result of the 2018 WSEC. In both 2022 and 2023, the Residential Program received a record number of applications, largely as a result of increased participation in the Point-of-Sale (PoS) program. This adaptive management strategy increased partnership between the Company and its Trade Ally (TA) contractors through the intensified promotion of the Point of Sale (POS) offering, which provides up-front Energy Efficiency incentives to home owners. 2023 saw significant uptake in POS rebate applications which comprised approximately 51% of applications paid.

The C/I Program experienced supply chain slowdowns in 2022-2023, pushing project completion dates later than anticipated. Additionally, the impacts of pending energy code changes and territory specific gas restrictions caused confusion related to gas service in commercial spaces. This confusion resulted in hesitation to invest in energy upgrades related to natural gas equipment. To address the concerns surrounding the suitability of gas in commercial spaces the Program focused on in-person outreach to engage in conversations about high-efficiency gas use and what opportunities are available to C/I customers under current codes and local legislation.

Table 1 represents the Company’s 2022-2023 EEIP achievements.

⁵ “2020 Cascade Natural Gas Conservation Potential Assessment” pg. 15 AEG, Applied Energy Group, June 16, 2021.

⁶ “2020 Cascade Natural Gas Conservation Potential Assessment” pg. 16 AEG, Applied Energy Group, June 16, 2021.

Table 1: Program Achievements

2022 Program Achievements

	Residential	Commercial	Low-Income	Total
2022 Targets	429,213	419,461	17,859	866,533
Therms Achieved	330,768	289,919	7,254	627,941
NEEA Savings**	70,862	10,535	N/A	81,397
Measures Installed	5,054	284	137	5,475
Carbon Offset*	1,822	1,597	40	3,459

2023 Program Achievements

	Residential	Commercial	Low-Income	Total
2023 Targets	507,695	537,858	19,665	1,065,218
Therms Achieved	605,104	290,154	17,524	912,782
NEEA Savings**	62,085	15,042	N/A	77,127
Measures Installed	9,468	197	276	9,941
Carbon Offset*	3,333	1,598	97	5,028

*Tons of Carbon Dioxide Equivalent (CO₂e) avoided, based on carbon offset of 0.0055086 metric tons CO₂e per therm from 2023 IRP which includes end use & upstream emissions.

**Savings reported by NEEA not included in portfolio.

In 2022 and 2023, the Company achieved deemed **Residential** therm savings of **330,768** and **605,104**, respectively. This represents 100% of the biennial **Residential** therm savings goal. In 2022 and 2023, the Company achieved deemed **C/I** therm savings of **289,919** and **290,154**, respectively. This represents 61% of the **C/I** Program’s biennial therm savings goal.

At a portfolio level, the savings for Residential, C/I Programs, and Low-Income equated to **1,540,723** therms, **achieving 80% of the 2022-2023 goal**. This story echoed across the region as other utilities struggled to meet their EE goals in the 2022-2023 Biennium. Cascade saw success in 2023 as a result of increased participation in the PoS program, which greatly contributed to the 119% achievement of the 2023 savings goal for the **Residential** program.

Program cost-effectiveness is shown in Table 2. The UCT Ratio goals forecasted in the 2022-2023 BCP for the **Residential** and **C/I** Programs were **1.67** and **2.65** respectively and **2.16** combined⁷. Ideally, each Program operates above a 1.0 cost effectiveness ratio. Cost effectiveness for the C/I Program was close to its projected cost effectiveness while the Residential Program was 21.5% more cost effective than the BCP forecast in both 2022 and 2023. The measure composition for the Residential Program diverged from the projected measure composition with weatherization measures, a measure on the more cost-effective side, making up a larger portion of therms saved than was

⁷ Docket UG-210838-CNGC-2022-2023-BCP-Plan-11-01-21.pdf | [UTC \(wa.gov\)](https://www.wa.gov)

forecasted in both 2022 and 2023. The weighted average measure life also increased due to an increase of weatherization measures, which positively impacted UCT cost effectiveness compared to plan.

Table 2: Program Cost-effectiveness

2022 Program Achievements

<i>Cost Effectiveness*</i>	UCT	TRC
Residential	2.03	1.53
Commercial	2.68	1.75
Portfolio	2.25	1.62

2023 Program Achievements

<i>Cost Effectiveness*</i>	UCT	TRC
Residential	2.03	2.00
Commercial	2.77	2.30
Portfolio	2.24	2.13

2022-2023 Biennium Achievements

<i>Cost Effectiveness*</i>	UCT	TRC
Residential	2.00	1.79
Commercial	2.72	2.01
Portfolio	2.20	1.88

*Cost-effectiveness excludes Northwest Energy Efficiency Alliance and Regional Technical Forum membership.

Programmatic Spending

Table 3 represents the Program expenditures for incentives, Programmatic delivery and administrative costs associated with implementation of the Company’s Washington EE Programs compared to estimated budgets. Note at a portfolio level, 2022 paid incentives were \$3,332,122 less than the budget and 2023 paid incentives were \$593,149 higher than budget. The 2022 incentive spend was a result of lower than expected participation in the C/I and Low-Income Weatherization (LIW) programs. Programmatic administrative costs were \$416,065 and \$600,684 less than the estimated administrative budget in 2022 and 2023, respectively. This variance is largely due to Pay for Performance forfeited as a result of missed on C/I therm goals in 2022 and 2023. Additionally, there were several open staff positions in 2023 that resulted in lower administrative expenditures.

Table 3: Programmatic Expenses and Paid Rebates

2022 Programmatic Expenses and Paid Rebates					
	Incentive Budget Estimates	Actual Incentives Paid	Administrative Budget Estimates	Actual Administrative Expenditures	Actual Totals
Residential	\$3,983,311	\$3,367,120	\$1,257,715	\$1,139,998	\$4,507,118
Commercial	\$2,453,847	\$897,307	\$1,394,623	\$1,129,225	\$2,026,532
Low-Income	\$1,654,829	\$495,438	\$63,252	\$30,302	\$525,740
Program Totals	\$8,091,987	\$4,759,865	\$2,715,590	\$2,299,525	\$7,059,391
	Direct Benefit to Customers (DBtC)*		Program Delivery		Total Program Costs
Expenses	\$4,797,377		\$2,262,013		\$7,059,391
Ratio	68%		32%		
NEEA Gas Market Transformation & Regional Technical Forum					\$224,375

2023 Programmatic Expenses and Paid Rebates					
	Incentive Budget Estimates	Actual Incentives Paid	Administrative Budget Estimates	Actual Administrative Expenditures	Actual Totals
Residential	\$4,711,663	\$7,816,948	\$1,404,670	\$1,271,376	\$9,088,324
Commercial	\$3,146,469	\$1,340,580	\$1,609,349	\$1,134,854	\$2,475,434
Low-Income	\$1,858,614	\$1,152,367	\$67,296	\$74,400	\$1,226,767
Program Totals	\$9,716,746	\$10,309,895	\$3,081,314	\$2,480,630	\$12,790,525
	Direct Benefit to Customers (DBtC)*		Program Delivery		Total Program Costs
Expenses	\$10,348,050		\$2,823,585		\$13,171,635
Ratio	79%		21%		
NEEA Gas Market Transformation & Regional Technical Forum					\$381,108

*Note DBtC includes all rebates paid through the Residential, Commercial/Industrial and Low-Income Program in addition to some expenses recorded under the "Programmatic expenditures category" like bonus coupon payments to customers, Quality Control Inspections, and partnership agreements with community organizations collaborating directly with customers to assist with rebate eligibility and installation.

Costs associated with the Northwest Energy Efficiency Alliance (NEEA) Gas Market Transformation efforts and Regional Technical Forum (RTF) participation are separated from general Programmatic expenditures for the purposes of assessing Program cost-effectiveness. Market transformation investments in these groups create conditions for future energy savings. NEEA estimates cost-effectiveness on a longer time horizon for its initiatives, in lieu of annualized cost-effectiveness calculations. A second set of UCT and TRC benefit cost ratios in *UG-210838, CNGC-2022-2023 Biennial-Conservation-Arpt-WP-1, 6.15.24.xlsx* are available to assess cost-effectiveness of the Program portfolio including the NEEA and Regional Technical Forum expenses. Note that 2023 marks the 9th

year of Cascade’s participation with NEEA and 2023 reflects the full membership dues for Cycle 6 funding. 2022 dues paid were temporarily reduced to accommodate a credit from Cycle 5.

For the third year NEEA is reporting savings estimates for their New Homes Program. As seen in [Table 1: Program Achievements](#), NEEA estimates that **81,397 and 77,127 therms** were saved from Residential and Commercial code and standards updates in 2022 and 2023, respectively. This savings is a fraction of the total amount NEEA believes will be saved through their code update efforts and is proportional to the funding provided by the Company to NEEA in support of code updates and market transformation efforts. These savings are represented outside other Program accomplishments, see *UG-210838, CNGC-2023-NEEA-Arpt-for-CNGC-WP-5, 6.15.24.pdf* for details on NEEA’s efforts in 2023.

The Company includes a Direct Benefit to Customer (DBtC) ratio per Docket UG-161253 with a target of 60% expenses attributed as a direct customer benefit. The portfolio of Programs in 2022 exceeded the target by 8%, achieving a DBtC of 68%. The portfolio of Programs in 2023 exceeded the target by 19%, achieving a DBtC of 79%. The combined program DBtC for the 2022-2023 Biennium was 75%, exceeding the target by 15%. The increase in DBtC is attributable to higher incentive payouts due to the success of adaptive management within the residential program and resulting record quantity of residential applications paid. Additionally, lower administrative costs as a result of open positions on the EE team contributed to the higher DBtC. Initial estimates of DBtC in the 2022-2023 Conservation Plan were 70% of total Program costs which is in line with expectations for the 2024-2025 Biennium.

Progress To Biennial Goals

2022 signified the first year for the Company’s EEIP under the new Biennial planning horizon. Pursuant to RCW 80.28.380 the “Company must establish an acquisition target every two years and must demonstrate that the target will result in the acquisition of all resources identified as available and cost-effective”⁸. Cascade filed its first BCP in the fall of 2021 for Program Years 2022 and 2023; these targets are shown in Table 4.

⁸ RCW 80.28.280 Gas Companies-Conservation Targets | [RCW 80.28.380 \(wa.gov\)](http://www.wa.gov)

Table 4: Biennial Targets for Spending and Savings

	Calendar Year 2022				Calendar Year 2023				Biennial Totals
	Residential	C/I	Low Income	1st year Total	Residential	C/I	Low Income	2nd year Totals	
Cascade Incentive Budget	\$3,983,311	\$2,453,847	\$1,654,829	\$8,091,987	\$4,711,663	\$3,146,469	\$1,858,614	\$9,716,746	\$17,808,733
Cascade Admin Budget*	\$1,257,715	\$1,394,623	\$63,252	\$2,715,591	\$1,404,670	\$1,609,349	\$67,296	\$3,081,314	\$5,796,905
Therm Targets**	429,213	419,461	17,859	866,533	507,695	537,858	19,665	1,065,218	1,931,751
NEEA Natural Gas Market Transformation				\$182,975				\$348,908	\$531,883
Regional Technical Forum				\$31,300				\$31,300	\$62,600
Evaluation, Measurement & Verification				\$70,000				\$70,000	\$140,000
Conservation Potential Assessment								\$160,000	\$160,000

*Includes 15% project coordination payment and 10% indirect rate paid as part of a total rebate for a qualified project. The updated 20% project coordination fee was not in place at the time of this BCP filing.

**Represents Cascade staff salary, and outreach costs associated with weatherization program delivery that are not part of payments to agencies.

In 2022-2023 Biennium Cascade saved a total of **1,540,723 therms** or **80%** of the **1,931,751** therm portfolio level biennial goal. Spending was in line with per-therm expectations at **\$19,849,916** or **84%** of the allotted Biennial budget.

Biennium Highlights

Residential

Despite lower overall participation in the New Home program, both 2022 and 2023 Existing Home weatherization measures had higher participation than prior years. The measures which saw the most growth were ceiling/attic insulation and air sealing measures. Updates to the ceiling insulation measures in 2022 removed the lower R value offering of insulation at R-38+, encouraging customers to pursue R-49+ ceiling insulation. In conjunction with a new focus from TA POS contractors, ceiling/attic insulation installs increased by 106% in 2022 and 724% in 2023 when compared to 2021. Ceiling/attic insulation accounted for 24% of total therm savings for the biennium. Prescriptive air sealing, a new measure first offered in 2022, accounted for 20% of biennial therm savings. While this measure does not save as much energy as whole house air sealing on a per home basis, it is a more accessible offering which requires air sealing of the attic and crawl space thermal and pressure boundaries in accordance with Bonneville Power Administration weatherization manual standards. Additionally, this measure rebate is only available when installed concurrently with ceiling, wall, or floor insulation and was completed with a majority of POS projects.

Equipment measures saw a decrease in participation across the board with 44% fewer measures in 2022 vs. 2021, and 37% fewer in 2023 vs. 2021. Cascade understands that there were several primary drivers behind the decrease in equipment measure applications. First, there has been a continued decrease in New Home rebate applications. Secondly, market forces related to inflation and supply

chain issues discouraged homeowners from seeking out upgrades to their gas equipment. Additionally, rebates for equipment measures may only incentivize a small portion of installation costs to remain cost effective, compared to envelope measures which can often be incentivized to a low-cost for the customer.

Figure 2 displays the downward trend in New Home rebate applications from 2021-2023. This downturn was an expected result from the adoption of the 2018 WSEC and anticipated adoption of 2021 WSEC. Many builders, especially large builders, are turning to electric appliances in new homes to meet the updated Energy Efficiency Credit requirement from section R406 of the WSEC. As builders install fewer gas appliances, the savings available in the new home market is trending sharply downwards for natural gas energy efficiency Programs. CNGC anticipates New Homes will comprise very little of the program therm savings in the upcoming biennium.

For more details on measure performance for 2022-2023 refer to Table 5.

Table 5: Residential Program Highlights

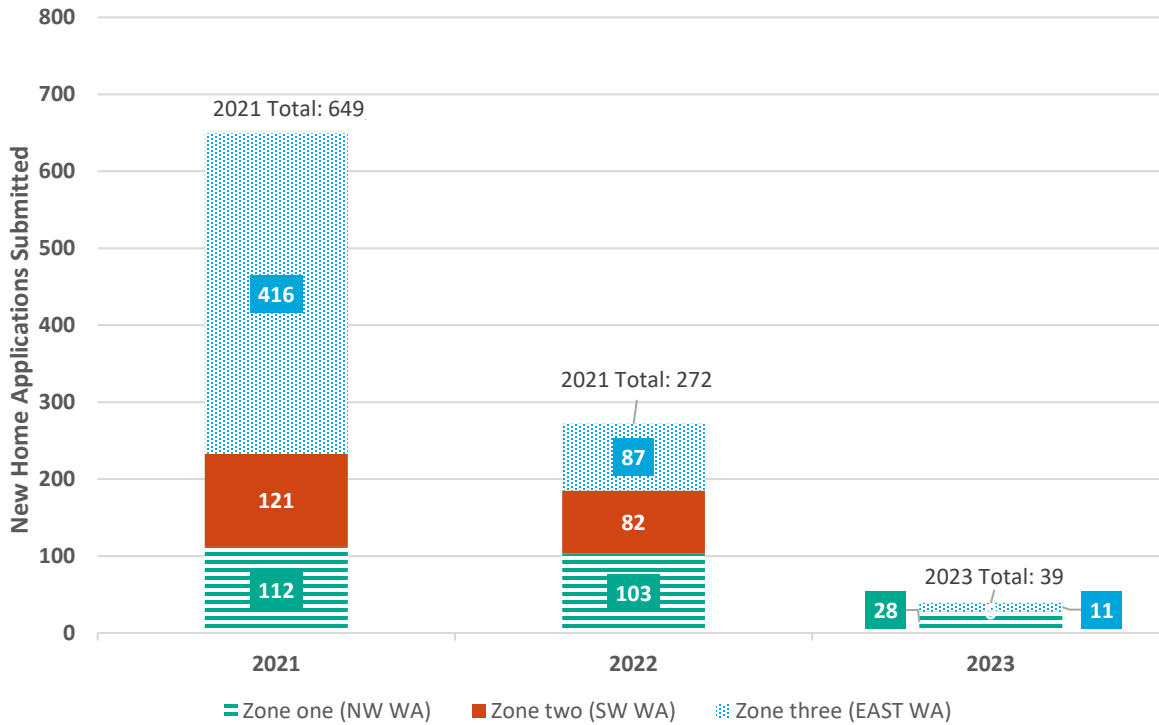
New and Existing Residential Equipment & Weatherization Measures						
Existing Home Weatherization		Measures installed			Therms	
<i>Insulation measures (in sq. ft.)</i>		2022	2023	2022	2023	% Biennial Therm Savings
Ceiling or Attic Insulation:	5,021,450	706	2484	38,333	182,806	24%
Floor Insulation:	1,091,775	399	478	21,917	21,841	5%
Wall Insulation:	184,811	100	102	6,228	6,928	1%
***Duct Insulation:	69,661	156	209	3,371	5,450	1%
Windows:	35,547	117	154	4,479	6,000	1%
Other Weatherization						
Duct Sealing:		143	200	7,193	13,561	2%
Whole Home Air Sealing:		19	18	1,434	1,359	0%
Prescriptive Air Sealing		458	2230	32,564	154,946	20%
Weatherization Bundle A*:		176	297	N/A	N/A	N/A
Weatherization Bundle B*:		11	13	N/A	N/A	N/A
Subtotals		2,285	6,185	115,520	392,890	54%
New Home Measures**						
Built Green Certified:		136	1	31,144	29	3%
ENERGY STAR® Certified:		22	33	4,510	1,757	1%
Subtotals		158	34	35,654	1,786.43	4%
New & Existing Equipment Measures						
ENERGY STAR® Clothes Washer:		38	90	294	696	0%
HE Tankless Water Heater		301	244	18,811	15,681	4%
HE Combination Domestic Hot Water & Hydronic Space Heating:		27	32	4,153	4,734	1%
HE Boiler:		18	24	1,609	2,692	0%
HE Exterior Door:		48	34	650	481	0%
HE Natural Gas Furnace:		1,428	1,605	127,884	148,472	30%
HE Natural Gas Hearth:		92	91	5,276	5,276	1%
ENERGY STAR® Smart Thermostat:		257	566	8,466	19,053	3%
Programmable Thermostat:		549	481	12,340	13,342	3%
Subtotals		2,758	3,167	179,483	210,427	42%
Residential Totals		5,201	9,386	330,657	605,104	100%

*Weatherization Bundle Measures are non-energy saving measures. These bundles encourage multi-measure weatherization projects.

**New Home (or Builder) Program excludes all weatherization measures except for High Efficiency (HE) Exterior Doors.

*** Duct insulation is reported in linear feet.

Figure 1: New Home Applications per Year by Climate Zone

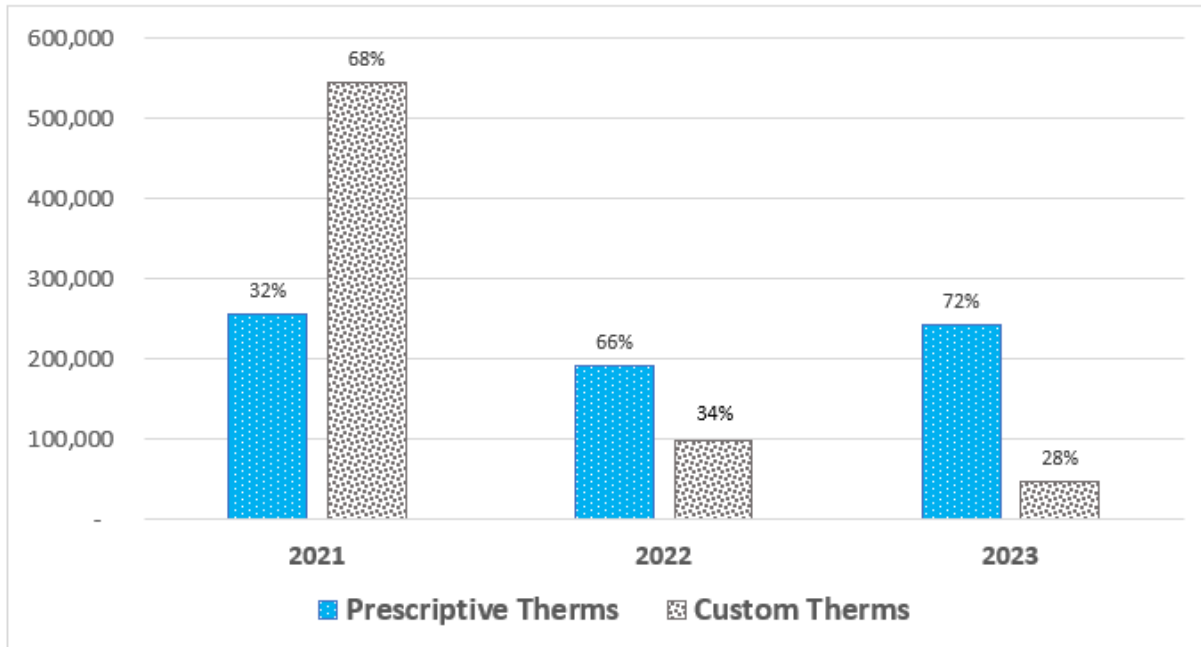


Commercial/Industrial

The CNGC C/I Program finished 2022 saving customers 289,919 therms, or 69% of the overall goal for 2022. The Program saw significant drop-offs in several measures in 2022 due to changing market conditions and supply chain challenges delaying project delivery. These headwinds continued to affect both Prescriptive and Custom projects throughout 2023. In 2023, the CNGC C/I program saved customers 290,154 therms, or 54% of the overall goal for 2023.

Custom projects achieved 98,789 therms in 2022 and 47,666 therms in 2023. This a drop from 544,080 custom project therms in 2021, which is consistent with the cyclical nature of custom C/I therm savings. Large one-off projects tend to allow the C/I program to intermittently meet or exceed goal as the development of these projects often spans multiple years and it is difficult to predict the timing in which they will be completed. CNGC is expecting to pay at least one such project in 2024 – the Naval Air Station Whidbey Island Project, which is estimated to achieve at least 700,000 in therm savings.

Figure 2: Prescriptive vs Custom C/I Therm Savings 2021-2023



Another challenge which, while not new, was much more pervasive in 2022-2023. Many customers indicated a belief that adding new gas equipment was either not allowed or could become prohibited in the future due to changes in state codes. This uncertainty in the industry created a cooling effect, in some cases discouraging customers from upgrading as they were not clear on what the impact would be for their return on investment. To combat this, the team adapted to more in-person outreach and having conversations more directly with customers so they could be assured of their investment in high efficiency natural gas equipment. In addition, the team reinstated key account management approaches in the final quarter of 2022. These customers were identified as most likely to expand their efficient gas use and/or complete a custom project to increase their efficiency.

Further C/I program highlights for prescriptive measures can be found in Table 6, including changes in participation levels, therms achieved per measure, and total prescriptive therms for 2022-2023.

Table 6: Program Prescriptive Measure Highlights C/I

Commercial Equipment & Weatherization Measure						
Weatherization		Measures Installed			Therms	
<i>Insulation Measures (in sq. ft.)</i>		2022	2023	2022	2023	% of Biennial Therm savings
Insulation - Attic - Tier 1	116,953	3	5	3,990	32,265	8%
Insulation - Attic - Tier 2	165,302	7	9	14,718	38,178	12%
Insulation - Floor	7,449	1	2	87	330	0%
Insulation - Roof - Tier 1	45,348	3	0	15,871	-	4%
Insulation - Roof - Tier 2	37,190	2	2	2,700	10,688	3%
Insulation - Wall - Tier 2	34,100	4	5	3,921	6,479	2%
Windows	3,738	5	11	2,804	1,962	1%
*Pipe insulation	782	-	1	-	4,692	1%
Subtotal		25	35	44,092	94,594	32%
Foodservice						
Convection Oven (All)		9	3	9,954	1,087	3%
Fryer (All)		6	-	10,960	-	3%
Gas Conveyor Oven		1	-	154	-	0%
Double rack Oven		-	4	-	7,224	2%
Low Temp Door Dishwasher		1	-	448	-	0%
Subtotal		17	7	21,516	8,311	7%
Space and Water Heating Measures						
Boiler		15	30	56,518	93,067	34%
Radiant Heating		26	42	19,269	17,970	9%
Warm-Air Furnace		29	24	4,482	2,545	2%
HVAC Unit Heater - Condensing		12	3	3,644	433	1%
DCV		2	-	182	-	0%
Domestic Hot Water Tanks - Condensing		40	21	27,210	21,222	11%
Tankless Water Heater - Tier 1		3	1	1,153	106	0%
Tankless Water Heater - Tier 2		16	18	7,351	4,241	3%
Motion Faucet Controls		1	-	5,712	-	1%
Subtotal		144	139	125,520	139,583	61%
Prescriptive Program Totals		186	181	191,129	242,488	100%

*Pipe insulation is reported in linear feet.

Low-Income Weatherization Program

The Company has offered its Schedule 301, Low-Income Weatherization Incentive Program (WIP), since 2008. The WIP offers rebates for weatherization measures to qualified Agencies delivering whole-home energy improvements through the Weatherization Assistance Program (WAP) to income-eligible customers in the CNGC service territory. In addition to the rebate offering in the WIP, the Company also offers an Enhanced Weatherization Incentive Program (E-WIP) aimed at removing barriers for the Agencies delivering home improvements through the WAP. The project coordination fee and indirect rate (20% and 10%, respectively) are periodically revisited to reduce financial barriers to Agencies when performing whole-home energy improvements. The Company supports Low-Income Weatherization; it reduces the customer energy burden, improves indoor air quality, and increases building durability. CNGC is committed to ensuring as many low-income natural gas customers receive weatherization services as possible and believes it can achieve this through the WIP and E-WIP.

As noted, the Company periodically revisits program structure in order to ensure financial barriers are reduced for Agencies and therefore directly benefiting the customers participating in the WIP. In 2023 the Company, with help from Agencies, proposed some administrative changes to Schedule 301 to be implemented in Program Year 2024. The changes are as follows:

- The Availability section is revised to clarify that the program is available to qualifying Cascade customers.
- A Program Administration section is added to state the program is administered by Department of Commerce-approved Low-Income Weatherization providers and other Low-Income Agencies providing weatherization services.
- Under Program Description, the language is revised to clarify that rebates are for Cascade customers.
- Information regarding program rebates is given the header, WIP Rebates, separating rebate information from eligibility information.
- References to the Enhanced Weatherization Program (E-WIP) and E-WIP rebates is removed as the offering, which was piloted and is now a standard part of WIP. E-WIP is being consolidated by reference as WIP. As previously drafted, Schedule 301 paid the cost-effective job costs through the WIP rebate and any remaining job costs through the E-WIP rebate. For ease of communicating the program as well as for simplified program administrations, both rebates will be offered simultaneously through WIP.
- Language requiring a memorandum of understanding (“MOU”) with agencies is moved to Sheet 300-B under General Provisions.
- In the Energy Efficiency section, references to efficiency standards are removed as they are apt to change. Instead, a reference to high efficiency measures is included.
- The Energy Efficiency Measures section in the following manner:
 - The reference to the Weatherization Priority List is revised to Deemed Measure Priority List (DMPL), which is the correct, current title of this document.

- Language is added allowing agencies to demonstrate that a measure is cost effective by using the Department of Energy (DOE) Priority List.
- The Company’s avoided cost is removed as a means for demonstrating a measure’s cost effectiveness as the DMPL and the DOE Priority List are inclusive resources and should be more efficient to use.
- The Rebate Calculation and Payment section is renamed simply Rebate Calculation and the information in this section is revised to consolidate the WIP and E-WIP offerings, which means the two-step process of calculating the cost-effective portion and the remaining portion of the project cost is no longer required. Currently, WIP and E-WIP, in combination, cover total project costs. As modified, WIP rebates will cover total project costs.
- A section header is added for information on Agency Fees.
- The project coordination fee is increased from 20% of the total project cost to the 30%. The agencies expressed concern that WIP program funding is not sufficient to pay labor costs associated with audits, inspections, intakes, rebate applications, and managerial review of project paperwork. The Company believes this change is necessary to enable qualifying customers to access weatherization services.

The Company believes the changes referenced above will not negatively impact program delivery and instead continue to help reduce barriers for participating Agencies serving energy justice communities.

As seen in Table 7, CNGC works with eleven Agencies across Washington, of which ten Agencies actively participate. In 2023 the Company did not receive projects from the following Agencies: Community Action Council of Lewis, Mason, and Thurston Counties, Chelan Douglas Community Action Council, Lower Columbia Community Action Council and the Snohomish Office of Energy and Sustainability.

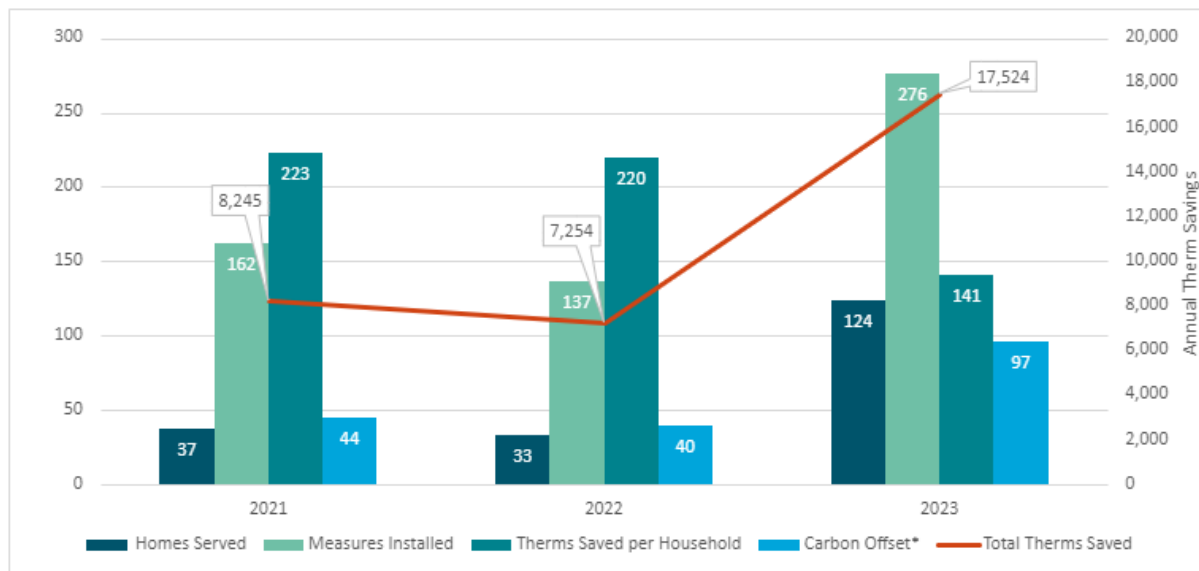
Table 7: Community Action Agencies

COMMUNITY ACTION AGENCY	COUNTY SERVED WITH CNGC CUSTOMERS
Blue Mountain Action Council	Walla Walla
Chelan-Douglas Community Action Council	Chelan
Coastal Community Action Program	Grays Harbor, and Pacific
Community Action Council Benton, Franklin	Benton, and Franklin
Community Action Council of Lewis, Mason, Thurston	Lewis, Mason, Thurston
Housing Authority of Skagit County	Skagit
Kitsap Community Resources	Kitsap
Lower Columbia Community Action Council	Cowlitz
Opportunities Industrialization Center of Washington	Adams, Grant, Yakima N of Union Gap
Opportunity Council	Island, Whatcom
Snohomish Office of Energy and Sustainability	Snohomish
Yakima Valley Farm Workers Clinic DBA NWCAC	Yakima, South of Union Gap

CNGC requires a Memorandum of Understanding (MOU) for Agencies to access the E-WIP. The MOU describes Program qualifications, the obligations of the Agency and CNGC, and specifies insurance requirements, indemnification, and confidentiality/non-disclosure agreements. The MOU also serves as an opportunity for the Agency to supply an estimated number of project completions in the coming year. All participating Agencies delivered their MOU in 2023 which grants eligibility for the E-WIP portion of the rebate.

In their MOUs with the Company, the Agencies preliminarily committed to serving 65 homes through the WIP/E-WIP Program in 2023, which represented a 34% reduction to prior estimates in the 2022-2023 BCP. This MOU count is an estimate of projects each Agency believes they may be able to complete based on Agency resources and bandwidth. The Company served 124 homes in 2023, ninety-one (91) more than the previous year resulting in an increase to all measurements as shown in Figure 3.

Figure 3: Low-Income Incentive Program Participation Levels since 2021



*Based on carbon offset of 0.0055086 metric tons CO₂e per therm from 2023 IRP which includes end use and upstream emissions, calculated as metric tons of CO₂e avoided.

There are many challenges associated with providing weatherization services to a vulnerable population in energy justice communities. The Agencies continue to face staffing shortages due to high turnover, increased administration cost, limited contractor availability and lack of an experienced workforce. Without experienced labor, the Agencies face bandwidth issues and limits in the number of projects they can commit to. The Washington State Department of Commerce recognizes these challenges and brought on a workforce development manager in late 2023.

Cascade enhanced communication networks and convened an all-Agency meeting during the fall of 2023 to better understand the challenges faced by the Agencies. These meetings and ongoing communication networks are the foundation of understanding between CNGC and the Agencies and

are a primary avenue to learning about the burdens facing the agencies, how the WIP and E-WIP programs are currently performing for them, and what other improvements Cascade can support to increase program participation.

Table 8 shows the total spending for the WIP and E-WIP in 2023.

Table 8: Low-Income Programmatic Costs

<i>Total Costs</i> *	2022	2023	Biennium
Total WIP Incentives	\$155,299	\$436,728	\$592,027
Total EWIP Incentives	\$236,143	\$449,716	\$685,859
20% Project Coordination	\$24,548	\$177,289	\$201,836
15% Project Coordination	\$40,305	N/A	\$40,305
10% Indirect Rate	\$39,144	\$88,645	\$127,789
Total Project Costs with Agency Admin	\$495,438	\$1,152,378	\$1,647,816
Cascade Admin (Including Program Outreach) **	\$30,302	\$74,400	\$104,702

*Totals rounded to the nearest dollar. The Low-Income Program does not fall under the same cost-effectiveness criteria as the rest of the portfolio, and while both the UCT and TRC are provided in UG-210838, CNGC-2022-2023 Biennial-Conservation-Arpt-WP-4, 6.1.24.xlsx, they are not included in the full portfolio cost-effectiveness calculation.

** Reflects Cascade staff time and funding for weatherization outreach support. Does not include the Project Coordination and Indirect rate, which are funded as part of the tariffed EWIP rebate and accounted for in a separate line item for the purposes of Program reporting.

Total therm savings for the 2023 Program Year were 17,524 therms. The Company’s 2022-2023 BCP initially estimated 19,664 therms would be saved through the WIP and E-WIP during this time period.

The 2023 incentive spending of \$886,444 was 48% of budget and actual homes served represented 191% of estimates provided by the Agencies. The 2023 incentive budget forecasted in the 2022-2023 BCP of \$1,858,614⁹ assumed a per home cost of \$18,965, whereas actual spending in 2023 saw a per home cost of \$9,239.28. This divergence in cost per home was primarily the result of an increase in additional funding sources for Agencies to leverage and the completion of a large multi-family project. The multi-family project contributed to a decrease in cost per unit and average measure count per unit, reflecting Agencies’ decisions to prioritize smaller projects with lower cost and shorter timelines to make the most of scarce contractor availability.

Table 9 outlines measure level highlights for the WIP and EWIP programs. This table provides a breakdown of achievements by measure, changes vs previous Program Year, and the portion of Weatherization therm savings in the 2022-2023 Biennium.

⁹ Docket UG-210838-CNGC-2022-2023-BCP-Plan-11-01-21.pdf pg. 11 | | [UTC \(wa.gov\)](http://UTC.wa.gov)

Table 9: WIP & EWIP Measure Highlights

Low Income Weatherization Program Measures					
Weatherization	Measures Installed		Therms		
<i>Biennial Insulation Projects:</i>	2022	2023	2022	2023	% Biennial Therm Savings
Ceiling or Attic Insulation:	22	65	2,276	6,039	34%
Floor Insulation:	19	29	908	1,398	9%
Wall Insulation:	19	37	1,269	1,301	10%
Duct Insulation:	18	17	318	265	2%
Other Weatherization					
Duct Sealing:	13	22	1,001	1,617	11%
Infiltration Reduction:	28	30	364	390	3%
<i>Subtotals</i>	119	200	6,135	11,010	69%
Equipment Upgrades					
95%+ Furnace	7	55	777	6,105	28%
Furnace Tune Up	2	6	42	126	1%
90%+ Direct Vent Space Heater	-	1	-	43	0%
91+ UEF Tankless Water Heater	4	2	216	108	1%
64+ UEF Storage Water Heater	2	2	66	66	1%
Water Heater Insulation	2	8	13	51	0%
Low Flow Faucet Aerator	1	1	5	5	0%
Low Flow Showerhead	-	1	-	10	0%
<i>Subtotals</i>	18	76	1,119	6,514	31%
Residential Totals	137	276	7,254	17,524	100%

Cascade is in the community to serve. The cost to deliver weatherization services to those who need it most is increasing. When other funding sources become unavailable, Cascade has poised itself to help the agencies continue their work. The expansion of funding available through the WIP & EWIP were the result of Cascade’s drive to deliver equitable support to its customers. The Low-Income Weatherization Program is crucial to the Company’s mission to assist the historically disadvantaged communities within its territory.

Quality Management System – Quality Control, Review and Evaluation, Process Improvements

The 2022-23 biennium presented many opportunities for the Company’s EEIP to strengthen and improve the EE Quality Management System. Through regular reporting of Key Performance Indicators (KPI), the program observes challenges in real time and uses projections to understand the EEIPs trajectory. Corrective action through adaptive management is taken when KPIs indicate the

program is likely to deviate from budgets and goals set in the Company's BCP. Facing its highest goal to date while seeing applications from new construction dwindle, the residential program had to adaptively manage its approach to overcome these burdens. Through significant resource investment in the Point of Sale Program and continual processing efficiency gains, the Company was able to set an all-time program record for both quantity of therm savings and applications processed in the second half of the biennium.

Pilots

New Home Air Sealing

In 2022 Cascade, in coordination with its CAG, launched the development of two Residential Pilots. The first, a New Home Air Sealing Pilot, is the Company's response to the increasing efficiency of the energy code over the past two code cycles. As options for high efficiency equipment have become standard practice in new homes in Washington state, the Company saw an opportunity to focus on an area which had not been updated in the WSEC for over a decade.

The New Home Air Sealing Pilot focused on understanding how viable a rebate would be for the product AeroBarrier, an atomized air sealing technology which can reliably produce tight building envelopes with less hands-on labor than traditional methods. The reduction in labor and improvement in air sealing can reduce energy and help builders meet the energy code air sealing requirements with little to no guess work. The Pilot Program had one contractor participate who used the AeroBarrier solution on three new construction residential homes. The pilot was a success in this instance with each home receiving a minimum of 1.5 credits per the WSEC's air leakage rate requirements. Contractors commented on the minimally invasive nature of AeroBarrier which did not require any modifications to the construction process.

Cascade will further evaluate air sealing opportunities in the 2025 Conservation Potential Assessment and monitor the market impact of WSEC 2021 on this offering.

Home Energy Reports

The second pilot the Residential Program began development on is focused on encouraging behavioral changes for its customers through Home Energy Reports. These reports inform customers about their energy use and provide personalized, accurate reports outlining specific opportunities for households to save energy in their home. The platform leverages artificial intelligence and publicly available information to provide this reporting independent of advanced metering infrastructure, which is frequently not used for natural gas grids. The pilot has focused these reports on a subset of the Company's residential customers and evaluate the results against a control group of residential customers.

A key point in the development of this pilot has been Cascade's focus on ensuring the report will be suitable for all its customers. Reviewing the language, layout, and data visualizations for ease of comprehension was integral to this process. Moreover, the report is presented in a format suitable

for customers with color blindness. This focus on equity ensures that the Company's diverse demographic of customers get the most out of the Energy Efficiency programs.

Approximately 9,000 residential customers were selected to receive a home energy report every other month for a period of 12 months beginning in the fall of 2023. These reports were delivered via either physical or electronic delivery, depending on the preferred delivery method of the customer. Results for this pilot including estimated impact and energy savings are anticipated to be shared with the CAG in the fall of 2024. Further investment in this pilot, adoption into the residential program, and discontinuation are all options to be considered and evaluated once results are known.

Radiant Heating Focus

This pilot had two aspects: A partnership with a manufacturer, Space-Ray, and a new, higher incentive for bundling radiant heaters with insulation in the C/I space. The partnership with Space-Ray led to more awareness in the marketplace and involvement in at least two projects which have yet to come to fruition. The radiant heating/insulation bundle was successful for awareness of both measures, though no projects in 2022 actually received the incentive. One customer was motivated to do both because of the incentive.

Midstream Tankless Program

This program was a carryover from the previous biennium. Though the distributors participating increased in 2022, there were zero projects attributed to this pilot. Part of the challenge was related to supply chain, where customers were electing to install anything that was available, and tankless units were less stocked with distributors than standard efficiency water heaters. This program did not continue in 2023 due to lack of participation.

Demand Control for Kitchen Hood Makeup Air Units

This measure was explored as a potential option for future uptake and whether it made sense to add to the prescriptive offerings. After evaluating savings potential and known opportunities in the service territory, this program was added to the prescriptive portfolio in the 2024-2025 biennium.

Strategic Energy Management (SEM)

The opportunity for a gas-only utility to offer an SEM program was explored beginning in 2022. Through discussions with other utilities, the program explored how best to position SEM for C/I customers. It was determined that stronger promotion of retro commissioning for the program would be the best route for the future of the program. The program continued in 2023, through promotion of walkthroughs and staff expertise on potential opportunities to help drive these projects through the custom program. Two participants had completed an SEM walkthrough as of December 2023 and this offering is anticipated to expand in the upcoming biennium.

Evaluation, Measurement & Verification

In August of 2022, Cascade distributed a Request for Proposal (RFP) for third-party measure level Evaluation, Measurement, and Verification (EM&V) of the program to build on historic internal evaluation efforts as outlined in section 9c of the condition's documents for docket UG-210838¹⁰:

“Cascade must perform EM&V annually on a maximum four-year schedule of selected programs such that, over the EM&V cycle, all major programs are covered. The EM&V function includes impact, process, market, and cost test analyses. The results must verify the level at which claimed energy savings have occurred, evaluate the existing internal review processes, and suggest improvements to the program and ongoing EM&V processes.”

Following an RFP, the contract for this work was awarded to ADM Associates, Inc. on December 1st, 2022. Collaborations with ADM in the month of December centered around specifying the goals and timelines for EM&V activities, expediting a thorough vendor security review, and outlining datasets and required supplementary files.

The C/I program was selected to be reviewed in the first-year schedule of impact EM&V activities. Research areas for the commercial program included space heating, water heating, building envelope, food service, custom projects, and participant surveying. A final report was filed on September 15th, 2023 in docket UG-210838 showing an overall realization rate of 95% for these measures which meets the typical realization rate of 80% to 110% for similar measures. Additionally, 93% of responding customers were satisfied or very satisfied with the program overall and 95% were satisfied with CNGC as their natural gas provider. Updated deemed therm savings estimates, program offering suggestions, and enhanced data capturing have all resulted from this work.

Cascade has continued EM&V efforts through the end of 2023 and into the upcoming biennium. An impact review of residential equipment measures is underway, evaluating both realization rates and program offerings. Additionally, Cascade began a biennial process review, per requirements in section 9d of the conditions document for docket UG-210838, which involves thorough participant and non-participant surveying, program partner interviews, as well as document and process reviews to improve future program implementation. Cascade intends to file final reports for both of these EM&V processes in the summer of 2024.

Continual Process Improvements

The program experienced many continual process improvements to maintain Program momentum and build interest in Energy Efficiency throughout the 2022-2023 Biennium.

- The POS Program continued working with current POS TAs and onboarded additional TAs to facilitate POS rebates for Cascade's customers. These efforts increased rebate submissions year over year

¹⁰ Docket UG-210838 Attachment A.pdf January 18, 2022 | [UTC \(wa.gov\)](https://www.wa.gov)

- The Residential Program delivered a streamlined version of its online application portal, now called the Public User eXperience (PUX), facilitating an increase in POS application submissions in the 2022-2023 biennium compared to 2021
- The program worked closely with a new POS TA to enhance the door-to-door model the contractor uses and ensure the TA followed all industry best practices. This relationship has proven to be extremely strong and is one of the key drivers for the residential program success in 2023
- Cascade has worked closely with other POS TAs looking to emulate the success of the door-to-door model and ensure a consistent approach to managing the POS program across its vast service territory. This model continued to work in 2023 and additional POS TA's are indicating interest in executing this effective strategy in 2024
- The EE Department implemented a tariff change on April 1, 2022, which involved updating rebates based on phase two of the 2020-2021 CPA
 - Window rebates were revised to adapt the two efficiency levels. For windows installed after April 1, 2022, two efficiency levels were available at U-Factor 0.22 and U-factor 0.3. U-Factor 0.22 had little uptake. The Company expects the U-Factor 0.22 efficiency level to see increased uptake under the new ENERGY STAR® northern zone window requirements which require 0.22 U-Factor to qualify for the certification
 - Tankless water heater incentives were revised from a two-level approach (0.87 and 0.93 Uniform Energy Factor models) to a single efficiency (0.91 UEF) to drive customers purchasing 0.87 UEF units towards a more efficient option
 - Cascade removed the lower efficiency (R-38) offering for Ceiling Insulation to drive higher-efficiency upgrades. Customers could no longer qualify for R-38 insulation rebates. This efficiency level accounted for a small portion of weatherization incentives. The simplification of this measure to one tier reduces administrative burden while pushing customers towards a more efficient option
 - The C/I Program removed incentives for fryers, steamers, and dishwashers to align with WSEC and Appliance Standard updates enacted in 2022
- Outreach for the Residential and C/I Program leveraged digital resources to increase participation. This included:
 - A new live action 30 second ad delivered to customers through a variety of Connected TV streaming platforms including Direct TV, Pluto TV, Roku, and Tubi
 - Increased presence at in-person events, signifying a resurgence of pre-pandemic outreach methods
 - Please reference the outreach section of this report for more detailed information regarding outreach efforts in 2022 and 2023
- The EE department ensures incentives are distributed prudently and that applications which do not meet program requirements are addressed appropriately or denied
 - Cascade denied 289 measures across 214 applications in 2023; 139 of these were fully denied applications
 - Fully denied projects accounted for 2.5% of all applications processed in 2023, down from 5.1% of applications in 2022

Software Customization

Throughout the Biennium, the Company focused on improving the PUX so POS TAs and residential customers could utilize the efficiencies provided by it. This online portal, originally launched at the end of 2021, enabled participating TAs to submit POS applications online and provide assignment of funds signatures from the customers to facilitate rebate payments. A major benefit of the portal was increased communication between the Company and its TAs. Contractors can log into the portal and see the status of projects they have submitted and confirm if there are rebates with missing information to resolve. This improvement reduces the resources that Cascade must commit to facilitating a POS rebate program and minimizes the turnaround time for TAs to receive reimbursement for POS rebates.

Quality Control Inspections

Cascade’s EE Program tracks customer installations by Climate Zone. Within these Climate Zones, Cascade performs Quality Control (QC) activities through both the C/I and Residential Programs.

Residential Sector

See Table 10 for QC activity totals. In July 2023, CNGC EE contracted with three low-income weatherization Agencies to provide Inspection Services for the standard income rebate program. CNGC already works extensively with each Agency and the inspectors employed at the Agency level are very well versed in all program requirements. A contract has been in place for Inspection Services with Sustainable Living Center since 2014. The total number of inspections completed increased substantially due to having contracts in place with four (4) Inspection Service providers. Projects are selected for inspection two ways: when rebate funds to payee exceed \$5,000 as well as randomly based on geography. CNGC EE staff deliver an “Inspection Pool” to each inspection provider via encrypted message, the inspection provider then handles all scheduling and reporting. If the inspection did not occur, the reason is noted and entered into the project packet. It should be noted that there were no QC inspections performed in Zone Two in 2023. This was due to a variety of factors, including the comparatively low program participation in the region, as well as the lack of inspectors available through Community Action Agencies. CNGC plans to pursue partnerships with Community Action Agencies in 2024 to ensure that a proportionate share of inspections are performed in each region.

Table 10: Residential Program

Climate Zone	2022	2023
Zone One	18	77
Zone Two	6	0
Zone Three	53	123
Total	77	200

Residential inspections verify that applications match the installed measures, the measures meet Program minimum efficiency requirements, all health and safety requirements are addressed, and industry best practices are demonstrated. The inspector verifies the efficiency of the equipment, and in the case of insulation/windows, the R-values / U-factors to confirm deemed savings. If an issue is noted as part of an inspection the customer and contractor are notified and the contractor is required to correct the issue. Cascade also uses QC inspections to confirm the quality of installations performed by CNGC Trade Allies and to vet contractors seeking enrollment to the Trade Ally program.

Commercial/Industrial Sector

All C/I inspections are performed by the Company’s C/I vendor as part of their Program delivery. The C/I inspection includes one of four elements: (1) pre-installation inspection, (2) post-installation verification, study review, and/or general project review. The reviewer verifies all measures listed on the application were installed, are operational, meet the Program requirements, include startup reports and invoices, and often includes photos of the installed equipment for verification. The reviewer then confirms their approval and signs and dates the form.

Table 11: C/I inspections by Zone

Climate Zone	2022	2023
Zone One	10	13
Zone Two	6	6
Zone Three	8	18
Total	24	37

Outreach

Executive Summary

In 2022-2023, Cascade Natural Gas (CNGC) expanded its Energy Efficiency (EE) outreach with a focus on residential and commercial customer awareness and participation in the EE program. This section summarizes the methods of our various campaigns including print and digital advertising, promotional events, and collaborative efforts with trade allies.

Residential Outreach Initiatives

Streaming & Digital Campaigns

New commercials launched in late 2022, achieving a combined 424,357 impressions across Connected TV and pre-roll formats. These efforts aimed to promote smart thermostat upgrades and insulation packages among other EE measures.

Figure 4: Home Tips Ad 2022



Climate Zone	Impressions	Start Rate	Starts	Video Complete: 25%	Video Complete: 50%	Video Complete: 75%	Video Complete: 100%	Completion Rate
Connected TV	81,915	100.0%	81,889	81,146	80,904	80,528	80,088	97.8%
Preroll	342,442	92.5%	316,879	254,961	239,831	227,610	218,979	69.1%

Over 420,000 digital impressions were completed throughout the service territory. These commercials were targeted to both English and Spanish speaking audiences to educate on benefits of energy efficiency and offerings available to them through the Cascade Energy Efficiency Program. This digital impression campaign had highly successful listen through and completion rates, indicating successful messaging and audience targeting. Because of this, the campaign was repeated in 2023 with similar results. It should be noted energy efficiency outreach aims to educate and influence behavior over a long period of time, the results of this campaign and similar campaigns in the future will be felt throughout the upcoming biennium.

Radio and Print Campaigns

Radio campaigns and strategic placements in local print media continued to be an effective method for reaching broader audiences, creating a strong and consistent form of messaging. Myriad messaging styles, tactics, colorways and themes were utilized to capture the attention of our customers.

Figure 5: Cascadia Daily 2023

Get Your Ducts In a Row
Maybe your home's ductwork has never crossed your mind . . .

Out of sight, out of mind.

Why Duct Sealing?

- Improves indoor air quality - unsealed ductwork allows particulates into your air duct system, this is then dispersed throughout your home.
- Better airflow** - leaky ducts unevenly distribute heat throughout the home. By sealing your ducts, air goes where it's needed, and your furnace isn't working overtime.
- Energy and money savings** - uninsulated ducts can increase heating costs up to 20%.
- Earn a rebate - **earn a \$150 duct sealing rebate from Cascade!**

Now that you know, it's time to put this knowledge to good use! Contact an energy efficiency representative for more energy saving tips and additional incentive offerings.

866-626-4479 | www.cngc.com/energy-efficiency/

Is Your Home "Winter Ready"?

Live comfortably and affordably by upgrading the efficiency of your natural gas fireplace.

Install a fireplace with a 70% EnerGuide FE or higher for a **\$300 rebate from Cascade.**

USE \$100 PROMO CODE : MBT
Terms and conditions apply. Promo can not be combined with other promotions or coupons.

Serving in the community since 1953

CASCADE NATURAL GAS
In the Community to Serve

Include Promo Code with application submittal to claim additional \$100 incentive with qualifying upgrade.
www.cngc.com/energy-efficiency

Figure 6: Mount Baker Theater Showing 2022

CASCADE NATURAL GAS
In the Community to Serve

SET YOURSELF UP FOR SUCCESS

Energy efficient installs lead to lower energy bills, which means savings year-round for you, and a smaller carbon footprint for the environment.

Whether you're making space or water heat upgrades for your home or business, Cascade is here to bridge the gap between standard and high-efficiency installs with cash back incentives.

Visit us online for a complete list of rebate offerings.

APPLY TODAY:
www.cngc.com/energy-efficiency/

CASCADE NATURAL GAS
In the Community to Serve

"Go Get 'em!"

You can teach an old dog new tricks. When you install high-efficiency space and water heat equipment, improve your insulation, or replace single pane windows, you may be eligible to fetch some dollars back!

Applying for rebates is easy. Follow the steps below to retrieve your reward:
Terms and conditions apply

- Check our website for eligibility requirements (and additional rebates)
- Submit your application along with invoice either online or via mail
- Sit back and wait for a check in the mail!

For more information, call or visit www.cngc.com/energy-efficiency/ | 866-626-4479

Figure 7: Radio Messaging

Region	Impressions	CPM	LTR	Completed Listens
Oregon	66,523	\$ 31.57	99.3%	65,534
Washington	150,976	\$ 23.19	97.8%	146,372
Total	217,499	\$ 25.75	98.3%	211,906

Radio broadcasts plays a crucial role in how Cascade reaches rural and non-English speaking community members, with 211,906 completed listens and a 98.3% listen-through rate in the Biennium.

Promotional Materials

Various promotional tools like bill inserts and direct mailers were effectively used to communicate the benefits of EE programs to our customer base. Bill inserts have the unique opportunity of associating energy and monetary savings directly with the customer's bill. Cascade has placed an enhanced emphasis on bill inserts for all subsets of the program in the upcoming biennium.

Figure 8: September 2022 Bill Insert



The image shows a man and a young child sitting on a carpeted floor, playing with colorful toy blocks. The man is leaning over, and the child is reaching for a block. In the top left corner, there is a logo for Cascade Natural Gas Corporation, featuring a stylized flame icon and the text "CASCADE NATURAL GAS CORPORATION" and "In the Community to Serve".

**Choices you make today,
are the building blocks of tomorrow**

In fact, you can build value in your home through energy efficiency upgrades to improve its quality and comfort.

To top it off, you might earn an incentive check in the mail.

Visit:
www.cngc.com/energy-efficiency
for program offerings.

Terms and conditions apply.



Figure 9: February 2023 Bill Insert



The image shows a woman sitting on a bed, holding a large dog and kissing it on the cheek. In the top left corner, there is a logo for Cascade Natural Gas Corporation, featuring a stylized flame icon and the text "CASCADE NATURAL GAS CORPORATION" and "In the Community to Serve".

**Choose High-Efficiency
for Long Lasting Energy Savings**

Experience more than puppy love with an energy efficient heating system designed to use less energy for the same amount of comfort.

Installing standard equipment for lower install costs only provides a temporary relief when it comes to your energy bills.

For rebate opportunities, please visit: www.cngc.com/energy-efficiency

Local Community Engagement

Cascade has made a commitment to be in the community to serve. Participation in local events and collaborations with Bellingham, Yakima, and Walla Walla baseball teams continued, leveraging community sports to enhance outreach. Partnerships with small businesses were formed to produce local “swag” for distribution to people during community events to serve as a tangible reminder of Cascade’s energy efficiency program.

Figure 10: Locally Sourced Promotional Merchandise



Figure 11: CNGC Sponsored Baseball Ad



Commercial Outreach Initiatives

Cascade Natural Gas continued the long-standing partnership with TRC Companies to further expand outreach to commercial and industrial customers in 2022-2023. Outreach methods for these customers included:

- Targeted Campaigns
- Enhanced Regional Focus
- Case Studies

Targeted Campaigns

The 2022/2023 biennium marked a shift into a post-pandemic mindset for many commercial and industrial customers who had delayed energy efficient upgrades to their facilities. The “Rediscovery” campaign exemplified adaptive management with a focus on introducing energy-efficient solutions to business owners, using local ads, search ads, and direct mail to rekindle interest post-pandemic. This strategy aimed to showcase the cost and operational benefits of upgrading to more efficient prescriptive and custom efficient solutions.

Regional Focus

The southern part of Zone 2 has historically been underrepresented in the commercial and industrial energy efficiency program. Targeted marketing and partnerships with local chambers and business communities concentrated efforts on increased engagement in the southern parts of the service territory. Efforts included direct mailers that emphasized the benefits of radiant heating and insulation upgrades, resulting in enhanced local business involvement.

Figure 12: Commercial Digital Advertisements 2022

"We have 149 guest rooms and the biggest benefit is that we haven't had any hot water supply issues."

- Hanford House
Gustie Sandhu, Managing Member

BEING IN "HOT WATER" IS GOOD FOR BUSINESS

Commercial tankless water heaters provide hot water only when needed, eliminate waste and environmental impact, and cut down on greenhouse emissions.

Rebates are available for energy-efficient gas upgrades at commercial and industrial businesses. Call 866-450-0005 or visit www.cngc.com/energy-efficiency

CASCADE NATURAL GAS
In the Community to Serve®

SCORE SAVINGS WITH ENERGY UPGRADES

Rebates are available for educational facilities installing energy-efficient natural gas equipment.

New and expanded HVAC incentives include:

- Domestic hot water heaters
- Condensing and non-condensing boilers
- Radiant heating and insulation

Call 866-450-0005 or visit www.cngc.com/energy-efficiency to view available rebates.

CASCADE NATURAL GAS
In the Community to Serve®

BUNDLE AND SAVE

Rebates are available for energy-efficient natural gas upgrades at commercial and industrial businesses. Install both radiant heating and insulation to receive a 10% incentive increase!

Call 866-450-0005 or visit www.cngc.com/energy-efficiency to view available rebates.

CASCADE NATURAL GAS
In the Community to Serve®

Figure 13: Direct Mailer 2023

A NEW YEAR'S RESOLUTION WE'LL HELP YOU KEEP!

Become more energy-efficient and future-proof your business with rebates from Cascade Natural Gas Corporation (CNGC).

As you prepare your business to comply with the Clean Buildings Act, CNGC has rebates available for gas saving equipment.

Energy saving opportunities include:

- Replacing old, inefficient equipment like boilers and water heaters
- Optimizing existing equipment to save more energy
- Making building improvements like installing or replacing insulation

Our team of energy efficiency experts can help you understand the rebates available for your business.

Get started by calling 866-450-0005 or visit cngc.com/energy-efficiency.

CASCADE NATURAL GAS
In the Community to Serve®

CNGC Commercial/Industrial Incentive Program
1180 NW Maple St., Suite 310
Issaquah, WA 98027

Case Studies

Case studies are commonly utilized in the industry to exemplify energy and monetary savings. These studies typically involve large resource dedication for creating written and video media which captures the attention of business owners and facility managers. Cascade created multiple case studies in the 2022-2023 biennium to help businesses understand the benefits of energy efficiency upgrades, through third party experiences, with the intent to leverage these in ongoing outreach across our service areas.

Figure 14: 2023 Case Study

CASE STUDY
Orchard Terrace Condos invests in weatherization with hot water pipe insulation

Orchard Terrace Project At-A-Glance

Equipment Installed
Water Pipe Insulation

Cash Incentive
\$11,730

Energy Savings
4,692 therms annually

Find out how to save energy and money at your property.
Call 866.450.0005 or visit cngc.com/energy-efficiency

Scan for rebate offerings

CASCADE NATURAL GAS
In the Community to Serve®

Orchard Terrace Condos is investing in projects to weatherize the 72-year-old property and improve comfort for residents. With the installation of water pipe insulation, the condos are estimated to save more than 4,600 therms annually. The property received a total incentive of \$11,730 from the Cascade Natural Gas (CNGC) Commercial and Industrial Energy Efficiency program to offset the cost of the facility upgrades.

Tom Crawford, board member of Orchard Terrace Condos, is pleased with the outcome of the insulation project and said, "I am excited to show the improvements via the reduced gas use, but I can say I could not be happier with the outcome and how we got here."


The condos reduced energy use and improved efficiency by installing water pipe insulation in the basements where residents access storage and laundry rooms. Before the insulation project, the 150°F water traveling through pipes in these common areas made the rooms uncomfortably hot – up to 90°F. After the insulation project, these spaces are cool and comfortable for residents.

By leveraging CNGC incentives for this project, Crawford said the property is "saving on operational costs [that] can be diverted to other projects" to continue improving the property.

CNGC provides cash incentives for eligible commercial customers installing a wide variety of qualifying equipment such as new windows, insulation in flooring, attics, roofs, or walls, water heating equipment, and space heating equipment.

Figure 15: 2022 Case Study

FIREHOUSE CHIEF RADIANT OVER SAVINGS



Equipment Installed:



- 15 Radiant Heaters
- 2 Domestic Hot Water Units

Energy Savings:

- 5,726 Therms (estimated annually)

Cash Incentive:

- \$21,070

Watch on  FIRE STATIONS 83 & 84 

Bob Gear, fire chief in Pasco, WA worked with CNG and other partners to install radiant heating and hot water units at two new stations. "CNG has been a great partner in this building and construction phase, helping us with rebate programs and information about different alternatives to mechanical and electrical options that will make our buildings more energy efficient" said Gear.

It was important during the construction and planning phases that the architects and building partners consider eastern Washington winter weather. Pasco is at the perfect freezing temperature and that can make getting in and out of the station difficult as snow and ice can build up on fire trucks, ladders and hoses. This presents a problem if another call came in because the station would have to wait for everything to melt before they could leave. Installing radiant heating became the solution the station was looking for. "The ability to come back into the station with radiant heat and warm that mass of that ambulance or that mass of that fire truck and dry that off, was just great" said Gear.

The radiant heaters help warm up the station at a faster rate, helping thaw the equipment. Plus, the station doors open and close several times a day when the trucks go in and out so there is a large air exchange that the radiant heaters help with. This warming effect keeps firefighters and their equipment warm, even with large bay doors that frequently open in cooler months.

Trade Ally and Partner Collaborations

Training and Support: CNGC provided active Trade Allies with Training Scholarship funds to offset a portion of training and certification for workforce development relating to installation of natural gas high-efficiency upgrades and weatherization from recognized training and certification providers.

Throughout 2022 and 2023, Trade Allies received "Bonus Coupons", which were distributed to customers and redeemable for \$100 toward a qualifying energy efficiency project. Bonus coupons were created in order to persuade customers to complete an energy efficiency project if they were likely to decline that project without the enhanced funds. The impact of this program has decreased year over year with less than 10% of all Trade Allies utilizing one or more Bonus Coupon in 2023, and over 97% of coupons remaining unredeemed at the end of the year. Cascade will consider revisions and enhancements to this offering in the upcoming biennium, likely towards increased penetration in underrepresented communities.

Figure 16: Bonus Coupons

THANK YOU!

Many thanks from Cascade for taking steps toward energy efficiency! Our program is proud to team up with Trade Ally contractors to offer you a "rebate bonus" for completing energy efficient upgrades*. Please submit your bonus coupon with your application and invoice via mail, or online at www.cngc.com/energy-efficiency. Have questions? 866-626-4479.

TERMS AND CONDITIONS:

→

- * Limit 1 coupon per customer, per measure installed in 2022
- * Coupon must be attached to invoice for qualifying install
- * Coupon only valid if submitted online or postmarked by June 30th, 2022
- * Must be a Cascade customer on a qualifying rate schedule
- * Coupon applicable to rebates equal to or greater than \$100 coupon value
- * Non-transferable and is for distribution solely by designated Trade Ally
- * Funds will be issued following approval of rebate application
- * Coupon does not signify endorsement or warranty of work performed
- * Employees of Cascade Natural Gas are not eligible

Cascade Natural Gas Bonus Coupon

SUBMISSIONS VALID
SEPTEMBER 1ST - DECEMBER 31ST 2022

\$100

Trade Ally Name: _____




To redeem coupon online, scan QR code, apply and upload an image of coupon along with invoice. See back for terms and conditions.



CASCADE NATURAL GAS BONUS COUPON


SUBMISSIONS VALID FEBRUARY 1ST - JUNE 30TH 2022



← Scan here to apply! →

\$100

Trade Ally Name: _____



To redeem coupon online, scan QR code, apply and upload an image of coupon with your invoice. See back for **TERMS AND CONDITIONS**.

THANK YOU!

Many thanks from Cascade for taking steps toward energy efficiency! Our program is proud to team up with Trade Ally contractors to offer you a "rebate bonus" for completing energy efficient upgrades*. Please submit your bonus coupon with your application and invoice via mail, or online at www.cngc.com/energy-efficiency. Have questions? 866-626-4479.


TERMS AND CONDITIONS:

→

- * Limit 1 coupon per customer, per measure installed in 2022
- * Coupon must be attached to invoice for qualifying install
- * Coupon only valid if submitted online or postmarked by December 31st, 2022
- * Must be a Cascade customer on a qualifying rate schedule
- * Coupon applicable to rebates equal to or greater than \$100 coupon value
- * Non-transferable and is for distribution solely by designated Trade Ally
- * Funds will be issued following approval of rebate application
- * Coupon does not signify endorsement or warranty of work performed
- * Employees of Cascade Natural Gas are not eligible

CASCADE NATURAL GAS BONUS COUPON

SUBMISSIONS VALID
April 1ST - JULY 31ST



In the Community to Serve

Terms and Conditions:

- Coupon only valid if submitted online or postmarked by July 31st 2023
- Limit 1 coupon per customer, per measure installed in 2023
- Coupon must be attached to invoice for qualifying install
- Must be a Cascade customer on a qualifying rate schedule
- Coupon applicable to rebates equal to or greater than \$100 coupon value
- Non-transferable and is for distribution solely by designated Trade Ally
- Requires approval of rebate application
- Coupon does not signify endorsement or warranty of work performed
- Employees of Cascade Natural Gas are not eligible

\$100

Many thanks from Cascade for taking steps toward energy efficiency!

Our program is proud to team up with Trade Ally contractors to offer you a "rebate bonus" for completing energy efficient upgrades*. Please submit your bonus coupon with your application and invoice via mail, or online at: www.cngc.com/energy-efficiency. Have questions? Call 866-626-4479.



Strategies for 2024 and Beyond

CNGC's 2022-2023 outreach has solidified the foundation for ongoing customer engagement and participation in our energy efficiency program. The increased integration of digital strategies with traditional media and community engagement has broadened our reach and impact, setting the stage for continued growth in 2024 and beyond. As we move into the next biennium, Cascade Natural Gas is focusing on broad, scalable digital strategies to enhance our energy efficiency initiatives:

Digital Landscape

We will leverage digital tools to create personalized, engaging experiences that motivate customers toward taking energy efficient actions. This includes optimizing our digital platforms for ease of use and providing targeted content that encourages energy-saving actions.

Scalable Campaigns

Our outreach will emphasize modular and adaptable campaigns that can be efficiently scaled across different markets. This approach allows us to expand successful strategies quickly and cost-effectively to new areas.

Innovative Engagement Techniques

We plan to introduce innovative methods such as digital surveys and interactive social media campaigns to demonstrate the benefits of energy-efficient upgrades, making them more relatable and compelling.

In the Community to Serve

Cascade Natural Gas is in the community to serve. We will continue to foster our communities and provide a supportive presence through in-person outreach and engagement across our service territory.

These strategies are designed to not only maximize the adoption of energy-efficient practices but also to deepen customer engagement through multimodal approaches that are both impactful and sustainable throughout the upcoming biennium.

Participation Summary

A full breakdown of therm savings, Utility Costs, and Total Resource Costs by all measures and Programs for the 2022-23 Biennium can be found within the following documents filed in addition to this report with the WUTC:

- *UG-210838, CNGC-2022-2023 Biennium-Conservation-Arpt-WP-1, 6.15.24.xlsx* – Cost-effectiveness calculations for the entire portfolio.
- *UG-210838, CNGC-2022-2023 Biennium-Conservation-Arpt-WP-2, 6.15.24.xlsx* – Cost-effectiveness calculation for the C/I Program.
- *UG-210838, CNGC-2022-2023 Biennium-Conservation-Arpt-WP-3, 6.15.24.xlsx* – Cost-effectiveness calculation for the Residential Program.
- *UG-210838, CNGC-2022-2023 Biennium-Conservation-Arpt-WP-4, 6.15.24.xlsx* – Cost-effectiveness calculation for the Low-Income Weatherization Program.
- *UG-210838, CNGC-2022-2023 Biennium-NEEA-Arpt-for-CNGC-WP-5, 6.15.24.pdf* – Outlines NEEA’s efforts on behalf of CNGC.

Updates to 2022 Program Achievements

No 2022 true-up is provided as no material additional expenditures or rebates were submitted after the report was filed.