

2022-2023

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## I. Executive Summary

In accordance with Washington Utilities and Transportation Commission’s requirements, Northwest Natural, dba NW Natural (“NW Natural” or the “Company”) presents this 2022-2023 Biennial Energy Efficiency Plan. This Plan outlines the Company’s energy efficiency efforts and goals for its Washington service territory for the 2022-2023 program years.

2022-2023 EE Plan Summary		Biennial Therm Savings Goal	Biennial Budget
Incentive Program	Commercial Programs	351,447	\$ 2,709,748
	Residential Programs	255,905	\$ 3,182,266
Low Income	WA-LIEE	13,563	\$ 302,163
Market Transformation	NEEA	TBD	\$ 176,296
Regional Collaboration	RTF	N/A	\$ 21,400
Pilot & Trial Programs	Pilot & Trial Programs	TBD	\$ -
Evaluation	Evaluation	N/A	\$ -
<b>EE Plan Total</b>		620,915	\$ 6,391,873
<b>CPA Savings Target</b>		619,200	N/A

### 1.1 2022-2023 Goal Development

In accordance with RCW 80.28.380, NW Natural has established a two-year savings acquisition target that is based on a conservation potential assessment (“CPA”) conducted by a third party. The CPA developed 30-year projections for technical potential, achievable technical potential, and achievable economic potential.

Using the achievable economic potential, NW Natural used the first two years of savings to determine the biennial savings goal. The CPA identified several savings opportunities that NW Natural does not currently have a way to offer. Among those are a residential behavioral program<sup>1</sup> and several industrial measures<sup>2</sup>. To address the industrial potential, NW Natural will work with stakeholders in 2022 to launch a new offering to serve this customer class. Since the development of a residential behavioral program may take a year or longer, the savings potential identified in the CPA for this measure was excluded from the CPA target. Instead, NW Natural plans to evaluate and set-up systems in 2022-23 to claim associated savings in the next biennium. This decision was presented and discussed with the Energy Efficiency Advisory Group.

In addition to the current forecasted savings from the incentive and low-income programs, the Company plans to achieve savings through the Northwest Energy Efficiency Alliance (“NEEA”) and new pilot and trial programs. NEEA is anticipating having gas savings in 2022-23, but due to the volatile nature of the savings they have been excluded from the plan forecast.

<sup>1</sup> See Section 4.1.1 CPA Residential

<sup>2</sup> See Section 4.1.3 CPA Industrial

## 1.2 Cost Effectiveness

The Company continues to monitor its energy efficiency programs through cost effectiveness tests and levelized costs. In the upcoming 2022-23 program years, the introduction of new programs will drive up levelized costs from previous program years.

Anticipated Program Performance		
	2022	2023
Incentive Program UCT <sup>3</sup>	2.06	1.83
Incentive Program TRC <sup>4</sup>	1.73	1.56
Levelized Cost <sup>5</sup>	\$0.89	\$0.82

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<sup>3</sup> See Section 2.5.1 Utility Cost Test

<sup>4</sup> See Section 2.5.2 Total Resource Cost Test

<sup>5</sup> See Section 2.5.4 Levelized Cost Metric

## II. Background

NW Natural began offering its current energy efficiency programs to Washington customers on October 1, 2009. The Washington Utilities and Transportation Commission’s (“WUTC’s”) Order No. 04 in the Company’s 2008 rate case, docketed as UG-080546, directed the Company to create and begin offering a program.

Since the inception of the Company’s energy efficiency programs, the programs have continued to develop and evolve under the direction and oversight of the Energy Efficiency Advisory Group (“EEAG”) which is comprised of interested parties to the Company’s 2008 rate case.

### 2.1 History

#### 2.1.1 Program Implementation

The Company began using Energy Trust of Oregon (“Energy Trust”) as the delivery arm for its Oregon energy efficiency incentive program in 2003. Since the Company’s Washington service territory is contiguous with its Oregon territory, it made sense in 2009 to have Energy Trust extend the boundaries of the Oregon incentive program offerings into Washington.

As agreed to in UG-080546, Energy Trust implemented the Company’s incentive program for one pilot year. During this time, the EEAG monitored the program’s performance and assessed whether Energy Trust should be the ongoing incentive program implementer. On May 25, 2011, NW Natural made a compliance filing in UG-080546 wherein it stated the EEAG’s opinion to allow Energy Trust to continue delivering the Company’s energy efficiency incentive programs in Washington. On June 8, 2011, Public Counsel separately filed a letter supporting this decision.

#### 2.1.2 Performance History

Historically, the Company’s Washington service territory has had a large appetite for energy efficiency. In 2020, the impacts of COVID-19 shutdowns caused programs to lag resulting in savings that fell short of the annual goal. Despite the downturn in 2020, current 2021 uptake has been strong, and the Company is anticipating exceeding the planned savings goal.

<b>Historical EE Incentive Program Therm Savings</b>			
Program Year	Goal	Actual	Percent of Goal
2016	263,184	330,866	126%
2017	282,539	391,606	139%
2018	359,880	372,005	103%
2019	369,195	372,948	101%
2020	339,331	320,170	94%
2021	399,957	In Progress	N/A

#### 2.1.3 Reporting and Cost Recovery Timeline

The WUTC’s Order No. 06 in the Company’s 2018 rate case, docketed as UG-181053, amended the reporting requirements and review timelines related to the program. Program funds are now forecasted and collected for the current program year in which the costs are incurred.

Order 06 also addressed the Company’s cumulative deferral balance which will be amortized over a four-year period, November 1, 2019, through October 31, 2023.

Historically, the Company filed an annual conservation plan December 1 of each year that described anticipated conservation efforts for the upcoming calendar year. In 2019, House Bill 1257 was passed, which modified conservation planning for gas utilities, taking effect in 2022. The law requires a CPA to be conducted by an independent third party to establish a two-year savings acquisition target based on estimated savings from the CPA.

## 2.2 Oversight

The EEAG includes representatives from NW Natural, WUTC Staff, Public Counsel, Alliance of Western Energy Consumers (“AWEC”) (formerly Northwest Industrial Gas Users), The Energy Project, and the NW Energy Coalition. The Company will consult with the EEAG prior to making any significant program changes and provides drafts of annual reports, conservation plans, and tariff adjustments to the EEAG for review.

## 2.3 Program Delivery

The Company’s programs are currently delivered to customers through partnerships and contracts with third parties.

The Residential and Commercial incentive program is offered through Energy Trust. Energy Trust is an independent, nonprofit organization dedicated to helping utility customers save electric and gas energy. Energy Trust was formed in 2002 in response to Oregon legislation that restructured electric utilities<sup>6</sup> for multiple reasons, including allowing non-residential customers to purchase their electricity from providers other than the utility and reassigning the responsibility for demand side management from utility operations to Energy Trust.

The Washington Low Income program (“WA-LIEE”) including outreach and delivery is provided through local community action agencies. The local community action agencies are Clark County Community Action Agency serving Clark County and Washington Gorge Action Programs and Community Action Council of Lewis, Mason and Thurston Counties serving Klickitat and Skamania Counties.

Regional collaborative efforts funded from multiple utilities include Market Transformation administered by NEEA and technical collaborative efforts through the Northwest Power & Conservation Council’s Regional Technical Forum (“RTF”).

## 2.4 Energy Efficiency Programs Offered

NW Natural supports energy efficiency through several different channels to promote widespread uptake and encourage market transformation in the region. The following subsections outline these various programs and offerings.

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<sup>6</sup> Oregon’s SB 1149, codified as ORS 757.612, mandated the creation of an independent entity capable of providing demand side management services to utility customers.

## 2.4.1 Incentive Program

### *Residential Program Description*

Residential programs in southwest Washington acquire cost-effective gas savings by engaging with builders and homeowners. This program engages with builders to increase energy efficiency of newly constructed, single-family homes through incentives, education, trade ally and program support and quality assurance.

For existing single-family and small multifamily homeowners and landlords, incentives and services are available for the following energy saving efforts:

- Efficient space heating and controls
- Water heating
- Insulation
- Windows
- Water conservation and behavioral actions
- Education
- Trade ally support
- Financing with repayment through utility bills
- Market interventions

Specific measure offerings and details are listed in Appendix 1 and Appendix 2.

There are four tracks within the Residential Incentive Program: Standard Home Retrofit, Standard Multifamily, Mid-stream (distributor), and new homes.

#### *2.4.1.1 Residential Standard Track (Existing Home Retrofit)*

Residential customers with gas heated homes are offered incentives for cost-effective weatherization measures and certain efficient gas appliances. Customers are encouraged to work with trade allies to ensure they are being provided accurate energy efficiency information and access to the most efficient equipment and services. On-line home energy reviews are also available wherein an energy use estimation tool identifies incentives and qualifying insulation and weatherization measures that could be installed to improve the efficiency of customers' homes.

#### *2.4.1.2 Residential Multifamily Track*

Residential customers in multifamily buildings are offered a specialized subset of the Residential Standard Track incentives. Due to the usage profile of Multifamily buildings, there are unique measures within this sub sector. Condos, townhomes, duplexes, triplexes and fourplexes and stacked (2-4) units qualify for incentives for the approved measures. Multifamily properties that are served with commercial rate schedule gas service are served through the NWN WA Commercial Program.

#### *2.4.1.3 Residential Mid-stream (Supply Chain) and Products Track*

Mid-stream focuses efforts and incentives toward distributors to encourage them to stock and promote the sale of efficient equipment to contractors and residential customers. The Retail Products strategy focuses on retail engagement to promote

efficient natural gas appliances and fixtures. Technologies that are included in the mid-stream efforts include gas fireplaces and gas tank water heaters.

#### *2.4.1.4 New Homes Track*

The New Homes track consists of three different offerings: EPS New Homes, Code Credits, and stand-alone measures. EPS New Homes is a whole-home, performance-based offering which encourages builders to construct homes to an energy efficiency standard that is at least 55% better than Washington building code. EPS is a trademarked name of an energy performance scoring tool that aims to highlight the benefits of energy-efficient newly built homes. The Company offers an energy performance score that rates the efficiency of a home and measures it against similar-sized homes built to 2018 Washington State Residential Energy Code (2018 WSEC-R). Qualifying new homes must also meet new construction Best Practice criteria established by the EPS New Construction (homes) Program. The compliance of all new homes is verified through an inspection process and homes are issued a score, called an EPS, upon completion.

The new homes track will also offer a new Code Credits pathway for 2022 and 2023 engagement. The Code Credits offering uses the 2018 WSEC-R energy credits structure (which went into effect February 2021) to award incentives to builders who earn more credits beyond what is required by code. This prescriptive offering provides incentives to builders based on implementation of practices as described in section R406 of the 2018 WSEC-R code. Compliance with this path is audited by independent, third-party verifiers, who provide a report of a home's code credit total to the efficiency Program. To qualify for program incentives, all builders must comply with the 95 AFUE furnace credit, and the 0.91 UEF water heater credit if using gas water heat. The Code Points engagement strategy will award standard incentives for every half point a home achieves greater than code. Since builders can meet credit requirements through a mix of measures, including solar, we will monitor and report on this occurrence.

#### *2.4.1.5 Community Partner Funding*

Community Partner Funding (CPF) is a pathway that provides increased incentive offers exclusively for community-based organizations to serve underserved populations living in single-family homes. This offering was introduced in 2021 and will be expanded over the biennium as more partnerships are developed in SW Washington.

#### *Commercial Program Description*

The Commercial Program provides natural gas energy-efficiency solutions for new and existing commercial buildings. Commercial customers of NW Natural in Washington can receive incentives for qualifying energy-efficient upgrades and retrofits. The program incentivizes select measures in existing and new commercial buildings, including office buildings, restaurants and other foodservice buildings, dormitory and assisted living facilities, greenhouses, and multifamily structures. Specific measure offerings and details are as listed in Appendix 1 and Appendix 2. The Washington Existing Buildings program consists of two tracks - custom and standard. The program will also be

launching a new offering of Strategic Energy Management in 2022 that will not realize savings until 2023.

#### *2.4.1.6 Commercial Custom Track*

The Commercial Custom Track acquires gas savings through incentivizing energy efficient capital projects and operations and maintenance upgrades in complex and non-standard situation. The Program Management Contractor account managers and engineering firms identify and promote customer opportunities. The custom track also pursues opportunities in retro-commissioning, which features targeted incentives for operations and maintenance improvements such as controls or HVAC adjustments.

#### *2.4.1.7 Commercial Standard Track*

The Commercial Standard Track provides incentives for standard measures with predetermined (deemed) savings for buildings of all sizes and across all commercial market sectors. The program promotes measures through customer outreach and cultivation of trade ally contractors.

#### *2.4.1.8 Commercial New Construction Tract*

The Commercial Program provides standard, prescriptive measure offerings for new commercial buildings along with a custom modeled approach for some projects as appropriate. New construction has continued to be an important market segment for savings acquisition. Through this work the program has expanded its effort to work directly with development design teams to ensure efficiency is being considered with equipment selection and design elements. A custom approach will allow for smaller building features and elements to be considered in the overall efficiency plan for a newly built structure. The program team will work with new construction design teams to determine the best efficiency options as well as the best program approach to influence and capture all efficiency opportunities.

#### *2.4.1.8 Commercial Strategic Energy Management (“SEM”)*

The Commercial Program will be launching a SEM offering in 2022 in collaboration with Clark Public Utility District (Clark PUD). SEM is an offering that provides tools and education to businesses and building managers to save energy through operation management that can be implemented into the future as well. SEM participants will learn how their business uses energy and identify where waste is happening. They will have the opportunity to share best practices with a cohort of peers, learn to increase employee engagement and monitor the progress of their energy savings work. In this collaboration, Energy Trust will be providing SEM gas services to a cohort of Clark PUD participants. The first year of the offering in 2022 will largely be focused on initial outreach to participants as well as providing analysis of gas savings opportunities. The savings acquisition will begin in late 2022 and will start being fully realized in 2023.

## **2.4.2 Low Income**

Under NW Natural’s low-income energy efficiency program, agencies administering the program provide free services and leverage other funding sources with WA-LIEE dollars to provide equipment repairs, upgrades, and whole-house weatherization services to qualifying customers.

Program details are available in the Company’s Schedule I, [“Washington Low Income Energy Efficiency Program \(WA-LIEE\).”](#)

### 2.4.3 Market Transformation

The Company views the regional gas market transformation initiative led by NEEA as a necessary investment in the future of gas demand side management (“DSM”) and as an enduring component of regional power planning. NEEA’s primary work, as it pertains to gas energy efficiency, on behalf of the Pacific Northwest is focused on two strategic goals: 1) bring energy efficient emerging gas technologies to market, and 2) create the market conditions that will accelerate and sustain the market adoption of energy efficient emerging gas technologies. NEEA uses a stage-gate approach to manage its work. Below are the six phases that a technology would go through to fully achieve the two goals and result in a sustained market change that provides gas savings.



Prior to the market development phase, NEEA works on:

- Scanning for new technologies (shown in the graphic above as “scanning and concept identifications”)
- Researching and assessing both the market and technology conditions and savings potential (through the concept opportunity assessment and market product assessment stages)
- Developing and testing the market intervention strategy for the technology and developing cost effectiveness models which produce long term cost effectiveness metrics and energy savings forecasts (both part of strategy testing and finalization)

The purpose of these phases is to develop additional efficiency measures and strategies over the long-term that will further the cost-effectiveness and reliability of savings and programs by acquiring savings at market scale. At each stage, the assessment of the potential for long-term cost-effective savings is refined. NEEA does not typically forecast savings associated with these earlier phases. These first four phases are where most of the activity has been in the early years of the NEEA gas collaborative. Significant savings begin in the fifth stage, Market Development.

### 2.4.4 Pilots & Trial Programs

The company offers pilots from time to time to test and evaluate new program or measure opportunities. Pilots should have defined objectives or purposes and will be limited in duration. The company may also pursue trial programs in an effort to take advantage of time sensitive opportunities, drive program uptake or to adaptively manage existing programs.

In 2022, the Company plans to work with the EEAG to develop a pilot for non-residential customers. The CPA identified a small potential for cost effective savings within the industrial sector. Since the Company does not have an established program serve these customers, this pilot will serve those customers and help inform future program decisions.

## 2.5 Cost Effectiveness Standards

Cost effectiveness is measured by comparing the benefits of an investment with the costs. It is an important metric used to show that energy efficiency is a responsible use of rate-payer funding.

### 2.5.1 UCT: Utility Cost Test

The Company utilizes the Utility Cost Test (“UCT”) to evaluate the cost effectiveness of the incentive program. The UCT measures the present value of the energy savings in relation to the net costs incurred by the incentive program, including incentive costs and excluding any net costs incurred by the participant. The UCT measures utility benefits divided by utility costs where each is defined as follows:

**Utility Benefits are:**

The total system value of gas energy saved based on the Company’s avoided costs. The Company’s avoided costs include the following values:

- Gas Price Forecasts
- Supply and Distribution Capacity Infrastructure Costs
- Washington State Carbon Policy Adder (Social Cost of Carbon as directed by House B1257)
- Risk Reduction Value
- 10% Power Act Credit

**Utility Costs are:**

- Incentives paid to, or for the benefit of, the participant
- Administrative costs
- Evaluation, verification, and monitoring

### 2.5.2 TRC: Total Resource Cost Test

The Company will continue to monitor and report how the portfolio fares using the Total Resource Cost (TRC) Test. The TRC includes all quantifiable costs and benefits regardless of who accrues them. This includes participant and others’ costs. The TRC Test is a calculation of total present value of total resource benefits divided by total resource costs when each is defined as follows:

**Total Resource Benefits include:**

- The total system value of gas energy saved based on the Company’s avoided costs. The Company’s avoided costs include the following values:
  - Gas Price Forecasts
  - Supply and Distribution Capacity infrastructure Costs
  - Washington State Carbon Policy Adder (Social Cost of Carbon as directed by House Bill (HB) 1257)
  - Risk Reduction Value
  - 10% Power Act Credit

- Non-energy benefits as quantified by a reasonable and practical method

**Total Resource Costs are:**

- Administrative costs
- Evaluation, verification, and monitoring
- The participant’s remaining out-of-pocket costs for the installed cost of the measures after incentives and Federal tax credits

### 2.5.3 NSPM: National Standard Practice Manual

The Company may investigate the opportunities provided by the National Standard Practice Manual (“NSPM”) methodology, such as the Resource Value Test (RVT), which is “intended to provide a comprehensive framework for assessing the cost-effectiveness of energy efficiency resources.” Any change to the Cost Effectiveness test will be vetted through the EEAG process.

### 2.5.4 Levelized Cost Metric

The levelized cost is the present value of the total net cost of a measure over its economic life, converted to equal annual payments. The levelized cost calculation starts with the incremental capital cost of a given measure or package of measures. The total cost is amortized over an estimated measure lifetime using the after tax real discount rate established from the Company’s most recent rate case. The annual net measure cost is then divided by the annual net energy savings (therms) from the measure application (again relative to a standard technology) to produce the levelized cost estimate in dollars per therm saved, as illustrated in the following formula.

$$\text{Levelized Cost} = \frac{\text{Net Annual Cost}(\$)}{\text{Net Annual Savings}}$$

The levelized cost of an energy efficiency measure is cost-effective if it is less than the average levelized costs of other supply-side options represented by the avoided costs. Avoided costs are presented and established in the Company’s most current IRP or IRP update. Cost effectiveness is further refined for measures and the programs through the benefit-cost ratio (BCR) tests that use avoided costs as defined below.

### 2.5.5 Avoided Costs

Avoided costs were updated at the beginning of the 2020 calendar year for use in 2021 measure and program planning and these same values have carried into planning for 2021. The general methodology for calculating avoided costs is described in chapter four of the 2018 IRP and the values were updated in early 2020.<sup>7</sup>

Avoided cost values are based on assumptions including the natural gas price and risk reduction value associated with offsetting gas purchases on the spot market. Also included in these avoided costs are supply capacity costs based on peak-day coincident factors developed by NW Natural distribution capacity costs based on peak-hour coincident factors developed by NW

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<sup>7</sup> <https://www.nwnatural.com/about-us/rates-and-regulations/resource-planning>.

Natural. Avoided costs also include values for the social cost of carbon as required by WA HB 1257 and posted on WUTC's website.<sup>8</sup>

The most recent avoided costs were used to retroactively review the cost-effectiveness of the 2020 program year. Moving forward, new avoided cost values will be calculated for 2023 measure planning. These updated values will also be used to retroactively to screen 2022 program results because these values will best represent the current value of 2022 savings to the Company.

The Company will adaptively manage and make improvements to the avoided cost calculation methodology as necessary. Continuing work on the avoided cost calculation further refines the true avoided cost for Washington customers by identifying how energy savings on peak help avoid or delay investment in capacity resources.

## 2.6 Program Evaluation, Monitoring and Verification

### 2.6.1 Impact Evaluations

Annual savings reported by the Company are based on the assumed gross savings for each measure. The assumed savings is consistent with the most current impact studies performed on the programs and measures. The Company or third parties perform impact studies used to validate the engineering assumptions used in setting biennial conservation targets. Impact evaluations of residential measures typically include analysis of a group of customers' energy usage data before and after a measure is installed (i.e., billing analysis). Non-residential measures receive a combination of engineering review of key algorithms and parameters, a document review of project files and specific building-level model inputs, and site visits to verify operational patterns and installation practices that affect savings estimates.

Savings from all measures are evaluated on a regular basis by the program implementer based on accepted practice, program activity, staff resources and evaluation priorities (unless sample sizes based on participation rates are not statistically significant). From the impact evaluation, a determination is made by the Company if evaluated savings are consistent with assumed savings. If they are not, the deemed savings values are "adjusted" by the program implementer to reflect the relevant evaluation findings. The adjustment of savings is accomplished through a combination of savings realization adjustment factors ("SRAF") and through updating the deemed savings values expressed in the measure approval documents ("MADs"). A link to the Impact Evaluation as well as a short summary of the results will be provided in the Annual report.

### 2.6.2 Process Evaluations

The Company or program delivery contractor may, as appropriate, contract with a third-party evaluation contractor to perform process evaluations on a subset or on all energy efficiency programs, WA-LIEE, pilots, and other efforts offered. The third-party evaluation contractor studies the programs and reports on the processes employed for each program with

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<sup>8</sup> <https://www.utc.wa.gov/regulated-industries/utilities/energy/conservation-and-renewable-energy-overview/clean-energy-transformation-act/social-cost-carbon>

recommendations for improvement. A link to process evaluations, as well as short summaries of the results, will be provided in annual reports following the Process Evaluation Report's release.

## 2.7 Process for Program Changes

The Company considers if incentive program year changes are needed when reviewing Unit Energy Savings ("UES") Measure List (Appendix 1) prior to filing the Plan. If the UES Measure List needs an offering added, changed, or removed, the Company will revise this Plan to make requested program modifications when it makes its tariff advice filing, to revise the performance metrics and budget that are also included in this Plan. This does not preclude the Company from filing to revise Schedule G or its EE Plan or Appendices at any time during the year.

Tariff advice filings revising or adding measures will include:

- 1) A measure-level BCR calculation as outlined in Section 2.5 "Cost Effectiveness".
- 2) For new measures, a summary of the vetting of a measure before it is introduced as a program offering.
- 3) New program proposed mid-cycle will include a program-specific plan addressing the possible need for program-specific metrics.
- 4) For pilots previously budgeted or with no additional budget impact, no filing will be required. The EEAG will be given the opportunity to review the offering before implementation if not previously outlined in the "Pilot Program" section. The Company will include summary notes in the appropriate report following the completion of any pilots.

Not all advice filings must include the Biennial EE Plan. The EE Plan will only be included when it is being revised.

The Company will work to resolve issues with EEAG members before filing. If the EEAG cannot agree and recommend approval of a filing, the Company may still choose to make the filing with the WUTC with the understanding that EEAG members may intervene in that public proceeding.

The Company will give the EEAG twenty days to review a draft filing.

## 2.8 Schedule for Program Planning

The Company will provide the EEAG with the following proposals for the next two program years, which will subsequently be filed with the WUTC in a new docket. The Company will file to this docket all the required reporting for the program years, except for program cost recovery through tariff Schedule 215, which is filed annually as part of the Purchased Gas Adjustment (PGA) filing. This annual filing included with the PGA will only cover the first program year and prior period true-up deferral balance, as specified in tariff Schedule G.

### **Budget**

The Company provides in this plan a total estimated budget for the 2022-2023 program years. The budget presents expected expenditures by program and customer class. The budget component comprised of incentives and direct customer benefit shall be considered a soft cap and may be exceeded in order to acquire all available cost-effective savings or facilitate low-income projects. Notification should be made to the EEAG prior to exceeding incentive targets.

The budget forecast is based on the best information available at the time of filing. As the year progresses, budgeted dollars may be reallocated among the various programs and/or measures and/or new offerings that are submitted to the WUTC.

The Company may provide the necessary funding for program administration and delivery as appropriate, including reserves. The amounts dispersed in one year are the sum of all funds forecasted to be needed for the program year, adjusting for any unspent or uncommitted funds previously dispersed.

**Performance Metrics**

The Company proposes performance metrics that will address the following:

- Total program costs
- Projected therm savings consistent with most recent IRP
- Average levelized cost for measures
- Projected homes to be weatherized in the WA-LIEE program

The Company expects that UCT at the portfolio level should be greater than 1.0 and will report compliance to this in the Annual Report.

The Company will present the EEAG with the biennial budget and performance metrics before making a tariff filing with the WUTC to modify this plan so that it incorporates the projected costs and performance metrics accordingly. If performance varies greatly from the Biennial EE Plan, the Company will establish adjustments with the EEAG and file an update. Otherwise, this filing will be made biennially no later than November 1 for a January 1 effective date.

**Quarterly**

The Company will report on its program on a calendar year basis. Quarterly calls will be hosted by the Company to discuss progress towards its Biennial EE Plan goals.

**Annual**

An annual report will be due by the following June 1<sup>st</sup> after the end of the program year.

**EEAG Review**

The EEAG will meet either in person, virtually or by teleconference to review the annual report and will be invited to participate in quarterly calls.

<i>2022 Program Year Schedule</i>	
January 1 <sup>st</sup>	Start of program year
March 22 <sup>nd</sup>	1 <sup>st</sup> Quarter check in with EEAG
May 24 <sup>th</sup>	2 <sup>nd</sup> Quarter check in with EEAG
June 1 <sup>st</sup>	Annual report for previous program year is filed
August 16 <sup>th</sup>	3 <sup>rd</sup> Quarter check in with EEAG
October 18 <sup>th</sup>	4 <sup>th</sup> Quarter check in with EEAG
November 1 <sup>st</sup>	File any EE Plan Updates
November 1 <sup>st</sup>	Requested effective date of program cost filing
January 1 <sup>st</sup>	Start of next program year

<i>2023 Program Year Schedule</i>	
January 1 <sup>st</sup>	Start of program year
March	1 <sup>st</sup> Quarter check in with EEAG
May	2 <sup>nd</sup> Quarter check in with EEAG
June 1 <sup>st</sup>	Annual report for previous program year is filed
August	3 <sup>rd</sup> Quarter check in with EEAG
October	4 <sup>th</sup> Quarter check in with EEAG
November 1 <sup>st</sup>	File 2024-2025 Biennial EE Plan
November 1 <sup>st</sup>	Requested effective date of program cost filing
January 1 <sup>st</sup>	Start of next program year

## 2.9 Annual Reporting

**The annual report will include the following:**

1. The biennial conservation target
2. Planned and claimed gas savings
3. Budget compared to actual results by program
4. Cost-effectiveness calculations results as defined in Section 2.5 and outlined by program
5. Measure level participation (units installed and savings) under the incentive program
6. Reporting on achievement of metrics
7. Discussion of steps taken to adaptively manage conservation programs
8. A status report on NEEA market transformation efforts, spending, and activity
9. An overview of the Company's year-end review of program delivery expenses and transactions
10. All program evaluations completed in the preceding year
11. Pilot results/metrics
12. WA-LIEE program results including:
  - Total program year costs
  - Homes served
  - Estimated total therm savings
  - Average therms saved per home

## 2.10 Program Budget Guidelines

Forecasted program costs for the next calendar year will continue to be reviewed annually. If major variances from the budget are identified in 2022, updates to the Biennial EE Plan will be filed for the 2023 program year. Otherwise, the proposed forecasts for the 2024-2025 Biennial EE Plan will be presented and filed in 2023 in accordance with WUTC staff conditions and EEAG guidance.

Each year, the Company will file its annual report by June 1 which will detail costs and acquisitions for the previous program year. This filing will trigger the EEAG's review of the energy efficiency programs. Any changes to the reporting timeline will be coordinated with the EEAG.

## 2.11 Cost Recovery

Incentive program, Market Transformation, Regional Technical Forum, Evaluation, Pilots, Evaluation, and all other Energy Efficiency expenses related to Schedule 215 are forecasted for the twelve-month period beginning each November 1<sup>st</sup>. Any differences between the forecast and actual dollars spent during the twelve months will be deferred and either credited or surcharged to customers based on over or under collection through rates. Schedule 230 costs will be deferred and later amortized for recovery from applicable customers on an equal percent of margin basis as established annually in the temporary rate adjustments. The Company will annually submit a stand-alone filing concurrent with its PGA filing, for cost recovery of its energy efficiency program forecast under Schedule 215 and historical expenses for the prior calendar year on Schedule 230.

## III. 2022–2023 Energy Efficiency Plan

### 3.1 Current Year Program Drivers

The Company's 2021 incentive program efforts have been extremely successful, largely due to efforts related to combating COVID setbacks and delays. Strategy for 2022 and 2023 will continue to capitalize on lessons learned during COVID and adjust program offerings for new energy legislation.

#### 3.1.1 Residential

##### **Overview**

Energy Trust helps single-family and small multifamily homeowners served by NW Natural in Washington achieve gas energy savings by offering cash incentives for efficient space heating and controls, water heating, insulation, windows, water conservation, behavioral actions, education, trade ally support, financing with repayment through utility bills and market interventions. The program also influences new residential construction by engaging with builders to increase gas energy efficiency of newly constructed homes through incentives, education, trade and program ally support and quality assurance. As the Southwest Washington housing stock matures, and existing HVAC systems need replacement, gas furnaces are expected to continue as a large savings opportunity.

##### **Residential Strategic Focus**

- Expand participation
- Work effectively across the supply chain to support more targeted approaches to cost effective measure adoption
- Identify opportunities for program design changes, operational efficiencies in incentive processing, trade ally management, quality assurance, consolidated measure analysis and submissions processes across multiple sectors
- Continue to work with NW Natural to ensure alignment on goals of program delivery, outreach tactics and marketing strategies

##### **2022 Residential Key Activities**

- Expand the installed base of smart thermostats through instant coupon promotions, downstream incentives, and direct ship
- Work with residential weatherization market actors to promote incentives for insulation in single family, small multifamily, and rental markets
- Identify and engage with single-family housing rental property owners for installations of weatherization, DHW, and HVAC efficiency upgrades
- Promote and support do it yourself (DIY) participation through technical support, promotions, and marketing
- Continue to develop targeted marketing and communications strategies to drive leads to contractors
- Promote low-cost smart thermostats to low-to-moderate-income residents
- Find new distribution channels to reach non-participants by reintroducing Energy Saver Kits
- Continue to solicit Manufactured Home retailer participants for participation and new home submissions where homes are sold in NW Natural WA service territories

- Expand collaboration with community-based organizations (CBOs) to deliver capital measures to new customer segments through the Community Partner Funding (CPF) pathway
- Coordinate with NW Natural to research opportunities for the implementation of a behavioral program for single family homeowners
- Implement new offerings for residential home builders that allow for incremental and single measure incentives
  - One offering will leverage the 2018 WA energy code point structure
  - Stand-alone single measures will be offered for smart thermostats and efficient gas fireplaces
- Encourage cross program collaboration between the two program implementers in Washington and external stakeholders to support DEI and other shared strategies

#### **Residential Activities—Ongoing**

- Advance the viability, relevance, and performance of programs
- Utilize the five-year measure savings tool to continually inform 2-year forecast and support strategic planning
- Work with NW Natural to ensure compliance to Washington Utilities and Transportation Commission regulatory requirements
- Provide robust and accurate reporting
- Increase customer participation and awareness of energy efficiency and renewable energy benefits
- Increase savings from emerging savings opportunities such as smart thermostats through instant coupon and direct installation offers
- Continue to support the trade ally experience through customized in-person and on-line/virtual engagements
- Engage and participate in trade industry associations including Clark County HVAC Trade Association, Clark County Rental Association and Building Industry Association of Clark County
- Collaborate with Clark PUD on direct install of smart thermostats for low-income customers
- Continue to increase customer participation and awareness of multifamily incentive through trade ally and property management engagement
- Continue to coordinate with NW Natural to facilitate stakeholder and trade ally relationships that drive participation and awareness
- Across the supply chain, expand the use of customized program designs and promotional tactics for heating and water heating system replacements (i.e., lead generation marketing)
- Program to lead, and conduct EPS New Construction field quality assurance, including coordination with verifiers to maintain quality assurance and quality control procedures

#### **2023 Expected Changes**

- A residential RFP in 2022 for implementation in 2023 could mean a change in implementer which may influence savings acquisition strategies and tactics
- Savings, incentives, and project volume are currently forecasted to remain stable for the majority of Home Retrofit, Midstream and Multifamily measures

- Residential new construction savings acquisition may need to shift focus to upstream and distributor strategies to acquire small incremental savings on products sold to the entire new homes market

### 3.1.2 Commercial

Energy Trust provides standard and custom capital, operations and maintenance and retrocommissioning incentives for Washington State business customers on qualifying NW Natural commercial firm or interruptible rate schedules. These include upgrades and retrofits for existing buildings; energy-efficient equipment for new construction; energy-efficient equipment and retrofits at existing and new multifamily properties with two or more units; and measures for natural gas-heated production greenhouses.

The robust building market coupled with ongoing construction labor shortages continue to divert commercial customers' attention away from energy efficiency projects. Tariffs are increasing costs and have led to projects being rebid leading to delays. Many projects have also been delayed because of halts to construction due to COVID-19. At the same time, the passage of Washington school bond measures has led to significant retrofit and new construction activity expected to continue for the next few years. Working with design and construction teams has allowed the program to explore custom modeled savings approaches to ensure no savings opportunities are left behind. Washington HB 1444 and HB 1257 will begin to impact Energy Trust's ability to offer certain measures including commercial fryers, dishwashers, steam cookers, and showerheads beginning in 2022.

#### **Commercial Savings Realization Adjustment Factors (SRAFs)**

Starting with the 2019 EE Plan, Savings Realization Adjustment Factors or SRAFs have been applied to the commercial savings as a means of adjusting the deemed, gross (or working) savings to reflect the findings of recent program impact evaluations more accurately. SRAFs will again be applied to 2022-23 working savings to provide reportable savings. The commercial program will be applying the following SRAFs to the associated program track; Existing Buildings (standard/custom), 0.9090/0.7979; Existing Buildings Multifamily, 0.9090; New Buildings (standard and custom), 0.90; and Strategic Energy Management, 0.89. The application of SRAFs helps to ensure that savings are reported in alignment with what utilities should expect in terms of a reduction of load. This is meant to provide a conservative savings value to support IRP goals. This EE Plan represents savings goals in reportable savings in which the SRAFs have already been applied.

The program also updates engineering assumptions associated with measures as the Measure Approval Documents or MADs expire. Not all MADs are updated every year, so the application of SRAFs is meant to provide program savings adjustment that might be outside of the scheduled MAD update process. With this 'belt and suspenders' approach, the program is helping to ensure that savings are not over-reported.

The impact of the SRAFs and measure engineering updates is noteworthy. Between 2010 and 2018 the Washington efficiency programs reported gross, working savings. The commercial program has been experiencing a steady incline of customer participation and savings acquisition with 2017 Commercial goal at 156,525 and therms saved at 154,866, in 2018 Commercial goal at 160,000 therms and saved at 161,632. In 2019, the working savings goal

was 170,016 therms, however with the application of the SRAF is reduced to 147,481. In 2019, engineering assumptions on 19 commercial Measure Approval Documents were updated for 2020 delivery. Amongst these was a roughly 65% reduction in deemed savings for commercial boilers which has been a prominent measure for the WA portfolio. For 2022-2023 Commercial working savings are forecasted at 433,955 therms. With the application of the SRAFs, the Reportable Savings is 351,447 therms.

### **Mega Project – Vancouver Innovation Center**

Overall Commercial annual savings goals have increased since 2019 because of a large mega project being introduced into the project pipeline. The project is expected to bring in large amounts of savings over the next two years. Savings are expected to be realized in three phases, the first of which started in 2020. The project's third phase is expected to be completed in 2023.

### **Forecasted Commercial Project Pipeline**

The Program has developed a pipeline of projects that is used for tracking and forecasting. Tracking information of the pipeline is updated monthly as details change; completion dates are shifted, projects complete, and new projects are identified. The pipeline consists of multiple school projects in the various SW WA school districts, Clark College, WSU campus buildings, libraries, county buildings, malls, and other commercial projects. Smaller capital measures such as restaurant equipment and steam traps are not typically included in the forecasted pipeline as they are typically identified just before completion. However, through outreach, many projects are identified as "prospects." Custom Studies are also indicators of future prospects and projects. Studies typically need to be completed and the building manager is asked to provide some level of commitment before a studied project is included in the forecasted pipeline. Some studies never materialize into projects.

### **Commercial Strategic Focus**

Increase the flexibility and adaptability of Efficiency Programs

- Identifying custom measures that can be converted to prescriptive measures allowing for adaptability of frequently used measures
- Identify new opportunities to increase savings for 2022 and beyond
- Advance the viability, relevance, and performance of programs
- Organize trade ally outreach to effectively reach all prospective and eligible small business customers
- Perform market analysis to identify remaining market potential available to all tracks of the program
- Explore new approach to direct install that can support Existing Buildings in Washington
- Explore and utilize other market channels such as buy-down programs to more effectively deliver program elements such as restaurant equipment
- Increase customer participation and awareness of energy efficiency. Identify additional ways to serve minority and underserved markets such as rural communities and tribes
- Diversify program participation through increased outreach to small- to medium-sized businesses and trade allies
- Continue collaboration with like-minded organizations such as NEEA, Bonneville Power Administration ("BPA") and the Regional Technical Forum ("RTF") to identify opportunities for new measures, strategies, and delivery channels

- Increasing the portfolio of measures that are delivered midstream
- Work with outreach and trade ally staff to create more tailored pieces for specific offerings, customer segments and contractor trades
- Continue trade ally segmentation efforts, optimizing support depending on trade, program knowledge and participation and regional services
- Provide sales support to trade allies to help them build program incentives into their business models to further energy efficiency
- Build the technical knowledge of outreach staff on the value proposition of energy-efficient equipment choices
- Increase activity of delivery contractor's market channel subject matter experts and trade ally coordinators to provide focused support for delivery contractor's account managers working in Washington
- Form an outreach subgroup focused on small business market penetration to coordinate with trade allies to identify and serve appropriate target-market small businesses
- Utilize utility and project tracking data to improve forecasting methodologies to achieve higher confidence factors for savings and budget

#### **2022 Commercial Key Activities**

- Coordinate with Clark Public Utilities to launch a Strategic Energy Management offering which will be a new offering in the WA portfolio
- Conduct a program equity assessment and develop action plan to implement changes
- Expand collaboration with Clark Public Utilities on co-funded facility studies
- Identify new gas savings opportunities through market research, measure development and implementing bundled measures
- Work with Vancouver Housing Authority and other local agencies to reduce the energy burden of customers in low-income housing
- Help schools, universities and other customers build capacity for energy efficiency by increasing scholarships for operators to receive Building Operator Certification
- Expand regional involvement and cross-program collaboration in rural areas; support Clark County's Green Business program activities; increase event sponsorships, training and outreach with local chambers and business organizations; and increase collaboration with the Washington Green Schools program
- Implement new marketing guidelines for NW Natural Washington delivery territory
- Work with the Vancouver Innovation Center project to ensure all savings opportunities are realized for existing custom, existing standard, and new buildings projects

#### **2022 - 2023 Expected Changes**

- Washington's passage of WA HB 1444 "Concerning Appliance Efficiency Standards" which established efficiency standards for equipment such as foodservice and showerheads went into effect in 2021. As a result, some Energy Trust incentives will be discontinued in 2022 and 2023. Washington HB 1257 "Concerning Energy Efficiency" which establishes building performance standards that go into effect beginning 2026-2028, could drive shorter term participation in programs.
- Implement a new savings goal and budget process as defined through WUTC rulemaking which integrates a Conservation Potential Assessment that has been developed by a third

party (other than Energy Trust). The new Conservation Potential Assessment will influence savings goals for 2022 and 2023.

### 3.2 Incentive Program Metrics and Budget

#### 3.2.1 Them Savings by Incentive Program

Incentive Program	Savings Pathway	2022 Therm Goal	2023 Therm Goal	2022-23 Therm Goal
Commercial	Existing Buildings - Standard	29,722	27,742	57,464
	Existing Buildings - Custom	124,155	76,000	200,155
	New Buildings - Standard	12,177	19,350	31,527
	New Buildings - Custom	0	2,693	2,693
	Strategic Energy Management	19,595	40,013	59,608
	<b>Commercial Total</b>	<b>185,649</b>	<b>165,798</b>	<b>351,447</b>
Residential	Existing Homes - Retrofit	106,599	105,495	212,094
	Mid-stream - Distributor	12,525	12,525	25,050
	New Home Construction	13,949	4,812	18,761
	<b>Residential Total</b>	<b>133,073</b>	<b>122,832</b>	<b>255,905</b>
	<b>Total Savings</b>	<b>318,722</b>	<b>288,630</b>	<b>607,352</b>

- Commercial Training Track included with Existing Buildings – Standard
- Residential Multifamily included with Existing Homes Retrofit

#### 3.2.2 Expenses by Incentive Program

2022-23 Efficiency Program	Budgeted Expenditures	2022	2023	2022-23 Total
		Commercial	Programs	\$ 1,311,293
	Commercial Administration	\$ 75,994	\$ 72,659	\$ 148,653
	<b>Commercial Total</b>	<b>\$ 1,387,287</b>	<b>\$ 1,322,461</b>	<b>\$ 2,709,748</b>
Residential	Programs	\$ 1,498,885	\$ 1,495,834	\$ 2,994,719
	Residential Administration	\$ 95,581	\$ 91,966	\$ 187,547
	<b>Residential Total</b>	<b>\$ 1,594,466</b>	<b>\$ 1,587,800</b>	<b>\$ 3,182,266</b>
	<b>Total Expenditures</b>	<b>\$ 2,981,753</b>	<b>\$ 2,910,261</b>	<b>\$ 5,892,014</b>

- Expenditures include Incentives and Delivery
- Program expenditures not available or calculated by track

### 3.2.3 Incentives by Incentive Program

Incentive Budget By Program		2022	2023	2022-23 Total
Commercial Programs	Existing Buildings - Standard	\$ 85,984	\$ 80,476	\$ 166,460
	Existing Buildings - Custom*	\$ 476,500	\$ 335,000	\$ 811,500
	New Buildings - Standard	\$ 36,204	\$ 67,510	\$ 103,714
	New Buildings - Custom*	\$ 10,000	\$ 18,467	\$ 28,467
	Strategic Energy Management	\$ 126,703	\$ 155,092	\$ 281,795
	<b>Commercial Total</b>	<b>\$ 735,391</b>	<b>\$ 656,545</b>	<b>\$ 1,391,936</b>
Residential Programs	Existing Homes Retrofit	\$ 591,218	\$ 635,762	\$ 1,226,980
	Mid-stream: Distributor	\$ 49,900	\$ 49,900	\$ 99,800
	New Home Construction	\$ 237,490	\$ 171,625	\$ 409,115
	<b>Residential Total</b>	<b>\$ 878,608</b>	<b>\$ 857,287</b>	<b>\$ 1,735,895</b>
	<b>Total Incentive</b>	<b>\$ 1,613,999</b>	<b>\$ 1,513,832</b>	<b>\$ 3,127,831</b>

\* Commercial Custom Studies included in Custom Track

### 3.3 Low Income Metrics and Budget

The WA-LIEE program will strive to weatherize 25 homes in the 2022-2023 program years. Delays and reduced outreach due to COVID-19 have limited the number of low-income projects. The WA-LIEE 2022-2023 biennial goal has been adjusted to reflect the impacts of COVID-19. A breakout of costs and therm savings estimates are reflected below.

Targets below assume a change in Schedule I to incorporate previously temporary adjustments that were first implemented in 2018. After the change, the measure funding cap per home will be \$10,000 with a \$1,000 cap on heat/safety work. Furnace repairs, tune-ups and replacements will also become standard practice to serve eligible customers in a timely manner. Program providers may recover agency administrative costs up to 25% of project costs. The Company is allowed up to 5% for processing administration.

#### 3.3.1 Low Income Performance Targets

WA-LIEE	2022 Goal	2023 Goal	Biennial Goal
Number of Homes Weatherized	10	15	25
Furnace Only	10	10	20
Therm Savings	5,425	8,138	13,563

### 3.3.2 Low Income Budget

WA-LIEE		Budget	
WA-LIEE	WA-LIEE Measures	\$	185,219
	Health / Safety	\$	25,000
	Furnace Only	\$	20,000
	WA-LIEE Agency Administration (25%)	\$	57,555
	WA-LIEE application processing admin (5% cap)	\$	14,389
	<b>WA-LIEE Total</b>	<b>\$</b>	<b>302,162</b>

### 3.3.3 Low Income Cost Effectiveness

The goal of the low-income program is primarily to address underserved markets and customers that do not have access to the energy efficiency incentive programs. For whole home efforts, WA-LIEE leverages funds provided by other state, federal and local agencies. Those leverage funds also utilize Savings to Investment Ratio (SIR) tests or approved measure lists.

## 3.4 Gas Market Transformation Metrics and Budget

The Company will continue its participation with NEEA. The NEEA budget is on track and in line with the 5-year business plan spanning 2020-2024. Actual expenditures are based on invoiced total arising from the actual progress of NEEA during the year.

NEEA Budget	2022	2023	Biennial Budget
NEEA	\$ 88,148	\$ 88,148	\$ 176,296

## 3.5 Pilots & Trial Programs Metrics and Budgets

The Company plans to investigate and initiate opportunities to further strengthen the suite of offerings through pilot projects and temporary or test programs. These programs and offerings are often referred to as “Pilots” but some may be temporary program structures or supporting efforts to enhance and drive existing offerings. The Company’s EEAG will be briefed as progress is made and budgets are provided in Section 3.5.1 to outline expected expenditures.

### 3.5.1 Enhanced Energy Services

The CPA conducted for the Biennial EE Plan identified cost-effective potential from Sales customers in the industrial sector. Since NW Natural’s Washington EE programs have not historically served this sector, the Company plans to set up a new offering to address these customers. NW Natural will work with its advisory group to identify program activities, assessments, and energy efficiency opportunities that may be included in this pilot offering. Given the uncertainties in this offering the budget is to be determined. Cost recovery for this offering was not included in the forecast and will use a different recovery mechanism.

Enhanced Energy Services	2022	2023	Biennial
Budget	TBD	TBD	TBD

### 3.5.2 Gas Heat Pump Water Heaters

For the last couple of years, the Company has been collaborating with NEEA, the North American Gas Heat Pump Collaborative, and various manufactures to promote commercialization of gas heat pump technology. Gas heat pump water heaters have the potential to be twice as efficient as baseline products, providing high long-term savings for our gas customers.

To increase demand and bring down cost barriers, the Company plans to promote this technology starting in 2023. Work in 2022 will continue collaboration with stakeholders and refine saving analysis and any potential incentives.

## 3.6 Northwest Power and Conservation Council Regional Technical Forum (RTF)

The Company has agreed to support the work of the Regional Technical Forum’s 2020-2024 Business Plan. The work of the RTF will assist the Company in developing and acquiring cost-effective conservation through research and evaluation of conservation investments.

### 3.6.1 RTF Budget

RTF	2022	2023	Biennial Budget
RTF – NWN WA Funding	\$10,600	\$10,800	\$21,400

## 3.7 Conservation Potential Assessment

The acquisition targets of this Biennial Plan were established through a conservation potential assessment (CPA) conducted by Applied Energy Group (AEG). As a requirement of RCW 80.28, gas utilities must set an acquisition target every two years. The conservation potential assessment (“CPA”) will be updated every two years to ensure targets are based on the most current and reliable data.

During 2023, the Company will work with an independent third party to update the CPA. Costs for the CPA will be recovered through general rates.

## 3.8 Loans and On-the-bill Repayment Services

The Company will continue to provide access to a low-interest, unsecured financing offer to residential homeowners who heat their homes with natural gas. The program lender will originate loans granted for the purposes of purchasing and installing conservation and energy efficiency measures incented by the existing homes program, and the Company will provide billing and remittance services to the program lender by placing the loan repayment fee on the participating customers’ monthly gas bill. Customers who obtain a loan with on-the-bill repayment services will receive a loan repayment charge itemized as “Energy Upgrade Loan” on their monthly bill for natural gas service. This will be reflected for the term of the loan or until the loan has been paid off, transferred, or otherwise discharged or removed from the bill in accordance with the terms and conditions of the Company’s service agreement. The Company will lead and manage the coordination of activities between the program lender, the program management contractor, and the Company. More information can be found in Appendix 3.

### 3.9 Evaluation Activities and Budget

In 2010 the Company hired Navigant for a two-part study on the Company's Washington Energy Efficiency program. The first part was a benchmark study to evaluate how the pilot program compared to other programs in Washington and the second part was an evaluation of how the Company should proceed with turning the pilot into a full-fledged program. The Company has no plans for Program level outside evaluation work in 2022 or 2023.

## IV. Development Considerations

Targets for the biennial incentive program targets were set based on the 2021 Conservation Potential Assessment<sup>9</sup> ("CPA") provided by Applied Energy Group ("AEG"). The CPA developed independent and credible estimates of energy efficiency potential for NW Natural's Washington service territory using measure assumptions consistent with 2021 Power Plan supply curves, Regional Technical Forum ("RTF") measure workbooks, and information from Northwest Energy Efficiency Alliance's ("NEEA's") market research initiatives. AEG customized its LoadMAP end-use planning tool with data specific to NW Natural's Washington territory to develop an estimate of achievable cost-effective energy efficiency potential between 2022 and 2051.

Transportation customers were excluded from consideration in the CPA as they have not previously been included in the energy efficiency program tariffs. Additional data and clarification on the appropriate avoided costs, how these customers use natural gas, and their view on energy savings would be required to assess the cost-effective potential for transportation customers. Since transportation customers were excluded from the CPA, WUTC staff has stipulated that energy audits be offered as a way to serve these customers and help assess the cost-effective potential of this sector.

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<sup>9</sup> <https://www.utc.wa.gov/casedocket/2021/210773/docsets>

#### 4.1 Conservation Potential Assessment

<b>Summary of Energy Efficiency Potential (mTherms)</b>							
<b>Scenario</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2026</b>	<b>2031</b>	<b>2040</b>	<b>2050</b>
<b>Baseline Load Projection (mTherms)</b>	80,831	82,581	84,282	87,530	95,229	109,312	125,747
<b>Cumulative Savings (mTherms)</b>							
<b>TRC Achievable Economic Potential</b>	354	725	1,036	1,827	4,390	9,345	11,392
<b>UCT Achievable Economic Potential</b>	477	992	1,470	2,671	6,523	13,936	16,818
<b>Achievable Technical Potential</b>	874	1,799	2,702	4,808	10,350	19,102	22,321
<b>Technical Potential</b>	2,033	4,189	6,160	10,491	20,957	35,383	42,373
<b>Cumulative Savings (% of Baseline)</b>							
<b>TRC Achievable Economic Potential</b>	0.4%	0.9%	1.2%	2.1%	4.6%	8.5%	9.1%
<b>UCT Achievable Economic Potential</b>	0.6%	1.2%	1.7%	3.1%	6.8%	12.7%	13.4%
<b>Achievable Technical Potential</b>	1.1%	2.2%	3.2%	5.5%	10.9%	17.5%	17.8%
<b>Technical Potential</b>	2.5%	5.1%	7.3%	12.0%	22.0%	32.4%	33.7%

<b>Cumulative TRC Achievable Economic Potential by Sector (mTherms)</b>							
<b>Sector</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2026</b>	<b>2031</b>	<b>2040</b>	<b>2050</b>
Residential	182	369	478	837	2,250	5,380	6,612
Commercial	155	323	509	908	1,979	3,713	4,526
Industrial	16	33	49	82	162	253	254
<b>Total</b>	<b>354</b>	<b>725</b>	<b>1,036</b>	<b>1,827</b>	<b>4,390</b>	<b>9,345</b>	<b>11,392</b>

#### 4.1.1 CPA Residential

In 2022 and 2023, the achievable economic potential for the residential sector is 183 and 187 mTherms respectively. The identified savings potential for the two program years represents 0.7% of the residential baseline projection. Behavioral programs, which are not currently part of the Company's portfolio show up in these first two years with a large amount of savings potential.

<b>Residential Top Measures in 2022 and 2023 (mTherms)</b>			
<b>Rank</b>	<b>Measure</b>	<b>Cumulative Savings (mTherms)</b>	<b>% of Total Savings</b>
1	Furnace - AFUE 98%	129.4	35.0%
2	Behavioral Programs - HER-style customer awareness program	105.8	28.7%
3	ENERGY STAR - Connected Thermostat - Interactive/learning thermostat (i.e., NEST)	78.9	21.4%
4	ENERGY STAR Clothes Washers - ENERGY STAR unit	24.9	6.7%
5	Insulation - Ceiling, Installation - R-49 (Retro only)	6.0	1.6%
6	Water Heater - Low Flow Showerhead - 1.5 GPM showerhead	5.3	1.4%
7	Boiler - AFUE 95%	4.0	1.1%
8	Water Heater - Pipe Insulation - Insulated 5' of pipe between unit and conditioned space	3.1	0.9%
9	Ducting - Repair and Sealing - 50% reduction in duct leakage	2.6	0.7%
10	Insulation - Wall Cavity, Installation - R-11	2.0	0.5%
11	Water Heater - Temperature Setback - Setback to 120° F	1.9	0.5%
12	Insulation - Ducting - duct thermal losses reduced 50%	1.6	0.4%
13	Water Heater - Faucet Aerator - 1.5 GPM aerator	1.5	0.4%
14	Gas Boiler - Pipe Insulation - Pipe insulated throughout home	1.0	0.3%
15	Insulation - Basement Sidewall - R-15	0.8	0.2%
16	Insulation - Slab Foundation - R-11 (NC Only)	0.2	0.0%
17	Thermostatic Radiator Valves - Thermostatic Restriction Valve	0.1	0.0%
18	Insulation - Ceiling, Upgrade - R-49	0.1	0.0%
19	Water Heater - Drainwater Heat Recovery - Drain equipped with heat recovery system	0.0	0.0%
20	Building Shell - Whole-Home Aerosol Sealing - 20% reduction in ACH50	0.0	0.0%
	<b>Total</b>	<b>369.3</b>	<b>100.0%</b>

#### 4.1.2 CPA Commercial

In 2022 and 2023, the achievable economic potential for the commercial sector is 155 and 168 mTherms respectively. The identified savings potential for these two years represents 1.4% of the commercial baseline projection. Space heating measure make up a majority of the potential in the next two program years.

<b>Commercial Top Measures in 2022 and 2023 (mTherms)</b>			
<b>Rank</b>	<b>Measure</b>	<b>Cumulative Savings (mTherms)</b>	<b>% of Total Savings</b>
1	Water Heater - TE 96% Condensing	11	3.4%
2	Boiler - AFUE 97%	58	18.0%
3	Insulation - Roof/Ceiling - R-38	94	29.0%
4	Broiler - Infrared Burners	6	1.9%
5	Insulation - Wall Cavity - R-21	28	8.8%
6	Furnace - AFUE 96%	2	0.6%
7	Range - High Efficiency	3	0.8%
8	HVAC - Demand Controlled Ventilation - DCV enabled	3	1.0%
9	Gas Boiler - Insulate Hot Water Lines - Insulated water lines	15	4.7%
10	ENERGY STAR Connected Thermostat - Wi-Fi/interactive thermostat installed	32	10.1%
11	Double Rack Oven - FTSC Qualified (>50% Cooking Efficiency)	2	0.5%
12	Hydronic Heating Radiator Replacement -	9	2.7%
13	Building Automation System - Automation system installed and programmed	1	0.2%
14	Kitchen Hood - DCV/MUA - vent hood	5	1.6%
15	Water Heater - Efficient Dishwasher - ESTAR unit	1	0.2%
16	Gas Boiler - Insulate Steam Lines/Condensate Tank - Lines and condensate tank insulated	6	1.8%
17	Space Heating - Heat Recovery Ventilator - HRV installed	5	1.6%
18	Gas Boiler - Hot Water Reset - Reset control installed	4	1.4%
19	Unit Heater - Infrared Radiant	0	0.1%
20	Gas Boiler - Burner Control Optimization - Optimized burner controls	1	0.2%
	<b>Subtotal</b>	<b>286</b>	<b>88.7%</b>
	<b>Total Savings in Year</b>	<b>323</b>	<b>100.0%</b>

### 4.1.3 CPA Industrial

In 2022 and 2023, the achievable economic potential for the industrial sector is 16 and 17 mTherms respectively. The identified savings potential for these two years represents 0.7% of the projected industrial baseline. While large, custom process optimization and control measures are present in the potential these are not applicable to all applications. For this reason, the long term potential for industrial is a lower percentage of the overall baseline compared to the residential and commercial sectors.

<b>Industrial Top Measures in 2022 and 2023 (mTherms)</b>			
Rank	Measure	Cumulative Savings (mTherms)	% of Total Savings
1	Strategic Energy Management - Energy management system installed and programmed	10	31.7%
2	Gas Boiler - Insulate Hot Water Lines - Insulated water lines	5	14.4%
3	Building Automation System - Automation system installed and programmed	0	0.6%
4	Gas Boiler - Stack Economizer - Economizer installed	4	12.6%
5	Gas Boiler - Hot Water Reset - Reset control installed	2	4.9%
6	Insulation - Roof/Ceiling - R-38	3	8.6%
7	Gas Boiler - Burner Control Optimization - Optimized burner controls	0	0.5%
8	Gas Boiler - Insulate Steam Lines/Condensate Tank - Lines and Condensate Tank insulated	1	3.4%
9	Process - Insulate Heated Process Fluids - Insulated process fluid lines	2	6.5%
10	Boiler - AFUE 97%	1	2.5%
	<b>Subtotal</b>	<b>28</b>	<b>85.9%</b>
	<b>Total Savings in Year</b>	<b>33</b>	<b>100.0%</b>

## V. Appendices

### Appendix 1: On-the-Bill Repayment

#### Residential Loans and On-The-Bill Repayment Services: Description of On-the-Bill Repayment Services

The Company assists in marketing a low-interest financing offer to residential homeowners who heat their homes with gas heat. The program lender will originate loans granted for the purposes of installing conservation and energy efficiency measures incented by the existing homes program, and the Company will provide billing and remittance services to the program lender by placing the loan repayment fee on the customers' monthly gas bill. Customers who obtain a loan with On-the-Bill Repayment Services will receive a loan repayment charge separately itemized as "Energy Upgrade Loan" on their monthly bill for natural gas service. This will be reflected for the term of the loan or until the loan has been paid off, transferred, or otherwise discharged or removed from the bill in accordance with the terms and conditions of the Company's service agreement.

#### Program Lender

Craft3, a non-profit community development financial institution ("CDFI") lender, will act as the program lender under the terms and conditions of a service agreement with Energy Trust. Craft3 received a grant from the State of Washington's Clean Energy Revolving Loan Fund<sup>10</sup> for the purpose of providing financing to Washington residents for installing energy efficiency measures. The intent of this offering is to facilitate the acquisition of cost-effective natural gas savings while extending the benefit of the State of Washington's Clean Energy Revolving Loan Fund to natural gas ratepayers in Southwest Washington.

#### Loan

The loan offerings through Craft3 that will qualify for On-the-Bill Repayment Services must fit the following parameters:

- Loans must be granted to residential homeowners who use natural gas as their primary heating fuel
- Loan amounts must be used to install conservation and energy efficient measures incented under NW Natural's existing homes program
- Loan Amount:
  - Loan amounts must be no less than \$2,500 and no more than \$15,000.
- Term of loan:
  - Loans up to \$7,500 to have a max term of 7 years,
  - Loans between \$7,500-\$15,000 up to 15 years.
- The program has a fixed interest rate at 4.99%. Contingent on market conditions, Craft3 may at a later date revise the interest rate offer for future customers, not to exceed 5.49%. Under all circumstances rates will be fixed and consistent for any qualifying customer
- Loans will be unsecured
- No penalty for early repayment

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<sup>10</sup> <https://www.commerce.wa.gov/growing-the-economy/energy/clean-energy-fund/energy-revolving-loan-fund/>

- Craft3 may assess a financing fee of \$100 for loans between \$2,500-\$7,500, \$200 for loans between \$7,500-\$15,000
  - Fees may be financed as an addition to the loan balance
- At least 51% of the loan must be for costs that are directly attributable to the commissioning and installation of the qualifying measure(s), costs incurred to comply with applicable building code, mechanical code, or other pertinent regulations, or costs incurred to meet any technical specifications established by the Energy Trust. Whereas 49% of the loan may be allocated toward non-qualifying energy measures such as cooling

## Terms and Conditions

1. The Company will directly bill Energy Trust or Craft3 for ongoing administrative costs, including costs associated with loan setup, loan termination and other incremental activities related to accounting and processing of bill payments.
2. The business relationship and the services exchanged between Energy Trust and the Company shall be in accordance with an executed Service Agreement. The Energy Trust will act as the program manager of this offering.
3. The provision of On-the-Bill Repayment Services will in no way conflict with the Company's compliance to WAC 480-90, Washington Administrative Code (WAC).
4. A Customer's decision to enter into a loan agreement with Craft3 will not affect his/her ability to establish credit with the Company; it will have no impact on the amount that a Customer may be required to pay on deposit for Natural Gas utility service; and it will have no effect on a Customer's ability to receive reliable natural gas service. The Company will communicate this in writing to customers who participate in this loan program.
5. By entering into a loan agreement with Craft3, the customer will be responsible to remit the monthly loan repayment amount to NW Natural with his/her monthly bill payment for natural gas services.
6. NW Natural is not a party to the loan agreements and has no financial interest in these loans.
7. Monthly payments received from customers participating in this program will be allocated to the customers' account in accordance with Rule 4 of this the Company's Tariff.
8. The Company will not disconnect gas service to a customer for non-payment of loan repayment charges.
9. NW Natural is solely a billing agent for Craft3. Participating Customers must acknowledge that the Company shall be held harmless for any liability resulting from contractors' actions with regard to installation of energy efficiency measures resulting from this program.
10. NW Natural has no responsibility to collect charges, penalties, or fees beyond the remitting to Craft3 the loan repayment collections the Company receives from Customers in accordance with the services described herein.
11. Craft3 is responsible to tell the Company how much to bill per month for each loan and how many months each customer should be billed. The Company is not responsible for any information provided by Craft3.
12. The Company will not a) accept loan payoffs, b) issue refunds on loan payments, c) offer payment arrangements on loan amounts due, or d) allow energy assistance to be applied to loan balances.
13. Craft3 must obtain a signed consent form from participating Customers that states that the Customer agrees to allow the Company to provide Craft3 with Customer-specific bill payment information.

14. Craft3 must obtain signed documentation from the Customer that certifies that the Customer has been made aware of the Company's limited role in the loan repayment process.
15. Craft3 must provide the Company with a toll-free customer service phone number to which the Company will refer Customers who have questions or concerns about their loan. The Company is not responsible for Customer questions and disputes related to the loan or the Customer's perceived or real experience related to any portion of the loan or energy efficiency measures.
16. The Company will provide Customers with an overview of the loan product. Specific terms and conditions of the loan will be provided by Craft3.
17. A Customer with a loan open at the time he/she sells his/her home may either pay the loan off at the time of the sale; or if the new homeowner is willing to assume the loan and is able to pass the Craft3's credit requirements, the new homeowner may assume the remaining balance of the loan.
18. If a Customer with a loan refinances his/her mortgage, Craft3 will work with the Customer. A fee may be assessed if Craft3 subordinates its lien to the new mortgage lender.

## Appendix 2: UES Measure Lists

Commercial Measure Description	Incremental (TRC) Cost per Quantity	Savings (Therms) per Quantity	Annual NEBs	UCT BCR	TRC BCR	MAD #
Multifamily - Condensing Tank WH	\$3.39	0.723	\$0.00	1.50	1.33	21
All Commercial - Condensing Tank WH	\$3.35	1.395	\$0.00	2.89	2.59	21
Steam Trap - Multifamily Space Heating- Operating Pressure 5 psig	\$427.83	116.68	\$0.00	5.19	1.21	40
Steam Trap - Commercial Space Heating - Operating Pressure < 30 psig	\$477.46	331.79	\$0.00	16.13	3.38	42
Steam Trap - Commercial Space Heating - Operating Pressure 30 psig and 50 psig	\$500.96	679.8	\$0.00	33.05	6.60	42
Steam Trap - Dry Cleaners (no test report required) - Operating Pressure 75 psig and 125 psig	\$329.92	211.14	\$0.00	4.94	1.50	42
Steam Trap - Commercial Space Heating (High Use) - Operating Pressure < 30 psig	\$477.46	654.86	\$0.00	31.84	6.67	42
Steam Trap - Commercial Space Heating (High Use) - Operating Pressure 30 psig and 50 psig	\$500.96	1377.23	\$0.00	66.97	13.37	42
Multifamily Buildings - Thermostatic Radiator Valve	\$215.00	42	\$0.00	4.47	2.08	45
High-Rise Apartment - CTWH 200kBtu/h	\$1.52	0.13	\$0.00	1.03	0.68	72
All Commercial - CTWH 200kBtu/h	\$1.51	0.18	\$0.00	1.42	0.94	72
Rack Oven – Gas - Double	\$1,860.27	218.44	\$0.00	0.80	0.80	101
ES v2.2 Convection Oven - Gas - Full-size	\$995.88	92.67	\$0.00	1.99	0.63	101
ES v2.2 Combination Oven - Gas	\$3,063.53	296.48	\$0.00	2.68	0.66	101
Steam Cookers - Gas	\$1.00	555.32	\$238.28	1.88	5797.95	101
Conveyor Broilers with belt width < 20"	\$2,523.03	1,145.29	\$550.09	3.88	4.94	101

Conveyor Broilers with belt width 20" - 26"	\$3,145.87	1,932.84	\$493.03	5.24	5.50	101
Conveyor Broilers with belt width > 26"	\$3,658.65	3,161.26	\$1,836.00	7.14	10.14	101
MF WA Clothes Washer - Gas DHW	\$65	5.53	\$20.64	0.46	3.45	152
MF WA Laundry Center Washer/Dryer - Gas DHW	\$88	5.46	\$24.56	0.28	2.65	152
Restaurant - CTWH 199 kBtu/h	\$201	44.28	\$0.00	2.12	1.74	212
Motel - CTWH 199 kBtu/h	\$201	16.70	\$0.00	0.80	0.66	212
Coin-op Laundry - CTWH 199 kBtu/h	\$201	103.93	\$0.00	4.98	4.10	212
Gym/Fitness Center- CTWH 199 kBtu/h	\$201	21.71	\$0.00	1.04	0.86	212
Schools- CTWH 199 kBtu/h	\$201	14.99	\$0.00	0.72	0.59	212
Furnace >=95% AFUE in existing commercial buildings	\$8.44	0.82	\$0.07	1.91	1.51	270
Furnace >=95% AFUE in new commercial buildings	\$8.44	0.51	\$0.06	1.19	0.96	270
Gas Fryers	\$1,290.00	431	\$0.00	1.55	1.50	272
Gas Fryers	\$1,290.00	431	\$0.00	1.55	1.50	272

Residential Measure Description	Incremental Cost per Quantity	Savings (Therms) per Quantity	Other NEB (Annual \$)	UCT BCR	TRC BCR	MAD #
Community Partner Funded Gas Furnace 90%+, Gas-only	\$1607	91.81	\$2.16	2.30	0.81	23
Gas Furnace- Rentals 90%+ AFUE WA	\$1607	91.81	\$2.16	2.30	0.81	23
Gas Furnace SW WA 95%+ AFUE	\$1607	91.81	\$2.16	2.30	0.81	23
Community Partner Funded Gas Furnace 90%+, Gas-only	\$1607	91.81	\$2.16	2.30	0.81	23
Gas Furnace- Rentals 90%+ AFUE WA	\$1607	91.81	\$2.16	2.30	0.81	23
Gas Furnace SW WA 95%+ AFUE	\$1607	91.81	\$2.16	2.30	0.81	23
Build Your Own Kit, 1.5 gpm Showerhead Gas	\$13	3.9	\$7.74	20.70	11.65	27
Build Your Own Kit, 1.5 gpm Shower wand Gas	\$22	12.1	\$23.92	12.69	7.82	27

Build Your Own Kit, Low Flow Thermostatic Shower Valve	\$5	4.4	\$8.58	3.21	12.44	27
Community Partner Funded Windows - GAS Only - U .28-.30	\$1	0.13	\$0.01	1.72	4.24	28
Windows - GAS - U .28 - .30 Gas only	\$1	0.13	\$0.01	2.86	7.96	28
Windows - GAS - U .28 - .30 Gas only	\$1	0.13	\$0.01	2.86	7.96	28
Windows - GAS- U .25-.27 Gas only	\$2	0.27	\$0.02	2.60	7.37	28
Windows - GAS- U .25-.27 Gas only	\$2	0.27	\$0.02	2.60	7.37	28
Windows - GAS - U <=.24 Gas only	\$3	0.46	\$0.03	2.96	7.15	28
Windows - GAS - U <=.24 Gas only	\$3	0.46	\$0.03	2.96	7.15	28
Gas Hearth 75+ FE w/ ele ignition	\$	60.51	\$0.00	5.60	139,982.86	29
Gas Hearth 75+ FE w/ ele ignition	\$	60.51	\$0.00	5.60	139,982.86	29
Gas Hearth 70-74 FE w/ ele ignition	\$	48.54	\$0.00	7.49	112,291.66	29
Gas Hearth 70-74 FE w/ ele ignition	\$	48.54	\$0.00	7.49	112,291.66	29
Gas hearth-Electronic Ignition \$25, retailer/distributor incent	\$105	7.41	\$0.00	11.00	4.18	29
Gas hearth-Electronic Ignition \$30, retailer/distributor incent	\$105	7.41	\$0.00	9.17	3.51	29
Attic Insulation/SQFT, Gas Heat	\$1	0.07	\$0.03	N/A	N/A	58
Community Partner Funded Attic Insulation, Gas Heat, Zone 1 GO	\$1	0.07	\$0.03	2.14	36.85	58
Attic Insulation/SQFT, Gas Heat	\$1	0.07	\$0.03	3.60	26.62	58
Community Partner Funded Attic Insulation, Gas Heat, Zone 1 GO	\$1	0.07	\$0.03	1.98	57.54	58
Community Partner Funded Wall Insulation, Gas Heat, Zone 1 GO	\$3	0.05	\$0.03	0.96	0.29	58
Wall Insulation/SQFT, Gas Heat	\$3	0.05	\$0.03	0.96	(9.82)	58

Wall Insulation/SQFT, Gas Heat	\$3	0.05	\$0.03	0.10	1.51	58
Community Partner Funded Floor Insulation, Gas Heat, Zone 1 GO	\$2	0.04	\$0.00	0.74	7.97	58
Floor Insulation/SQFT, Gas Heat	\$2	0.04	\$0.00	2.06	0.85	58
Floor Insulation/SQFT, Gas Heat	\$2	0.04	\$0.00	2.06	0.85	58
Midstream Gas Tank WH, Energy Star, Distributor	\$	15.05	\$0.52	3.48	34,816.43	102
Energy Star Mfg Home Customer Incentive	\$	0	\$0.00	-	N/A	109
Neem+ Mfg Home Customer Incentive	\$	0	\$0.00	-	N/A	109
Energy Star Mfg Home SPIF, Gas Zone 1	\$3097	105.91	\$1.99	5.08	0.49	109
Neem+ Mfg Home SPIF, Gas Zone 1	\$5063	123.77	\$17.98	0.59	0.04	109
CustomEPSVerf-GAS	\$		\$0.00	-	N/A	145
EPS: New Single Family, Gas - Path 1 GHGW	\$699	22.98	\$2.41	0.90	1.32	145
EPS: New Single Family, Gas - Path 1 GHEW	\$588	16.86	\$1.69	0.77	1.15	145
EPS: New Single Family, Gas - Path 2 GHGW	\$1271	35.93	\$4.14	0.90	1.08	145
EPS: New Single Family, Gas - Path 2 GHEW	\$713	29.98	\$4.37	0.89	1.68	145
EPS: New Single Family, Gas - Path 3 GHGW	\$2177	53.01	\$5.29	1.05	0.94	145
EPS: New Single Family, Gas - Path 3 GHEW	\$1472	42.33	\$4.02	0.95	1.18	145
EPS: New Single Family, Gas - Path 4 GHGW	\$2463	66.41	\$7.96	1.15	1.04	145
EPS: New Single Family, Gas - Path 4 GHEW	\$2197	52.8	\$4.52	N/A	N/A	145
Smart Thermostat Contractor Installed - Gas Only Territory	\$170	39.7	\$4.17	15.31	9.01	153
Smart Thermostat - Gas Only Territory	\$170	39.7	\$4.17	19.13	9.00	153
Smart Thermostat Instant Coupon - Gas Only Territory	\$170	39.7	\$4.17	19.13	9.00	153
Smart Thermostat Contractor Installed - Gas Only Territory	\$170	39.7	\$4.17	15.31	9.00	153
Smart Thermostat - Gas Only Territory	\$170	39.7	\$4.17	5.03	2.40	153

Smart Thermostat Instant Coupon - Gas Only Territory	\$170	39.7	\$4.17	-	-	153
Gas Tankless Water Heater	\$450	76	\$0.00	7.33	6.61	197
Gas Tankless Water Heater	\$1838	76	\$0.00	7.33	1.59	197
Gas Tankless Water Heater w gas line upgrade	\$1650	60.69	-\$1.84	5.85	1.42	197
Resideo Winter Thermostat Optimization Winter gFAF WA	\$8	15.5	\$3.87	-	-	217
Resideo Annual Thermostat Optimization gFAF + AC Gas Only	\$12	15.23	\$6.25	48.94	81.01	217
Resideo Annual Thermostat Optimization gFAF Gas Only	\$12	15.23	\$3.81	47.11	54.01	217
Resideo Annual Thermostat Optimization Control Group GO	\$12	0	\$0.00	-	0.58	217
Resideo Winter Thermostat Optimization Winter Control Group GO	\$8	0	\$0.00	-	-	217
Community Partner DI SmartStat - Gas Only Territory	\$595	41.37	\$3.60	0.59	0.11	222
Community Partner DI SmartStat - Gas Only Territory	\$482	33.87	\$2.30	-	-	222
Direct Ship Smart Thermostat Gas Only	\$249	39.7	\$1.80	6.35	6.07	250
Direct Ship Smart Thermostat Gas Only	\$249	39.7	\$1.80	6.43	6.21	250
CPF DI R0-R11 Ceiling Insulation- Gas Heat GOT	\$4	0.09	\$0.01	-	-	252
CPF DI R0-R11 Ceiling Insulation- Gas Heat GOT	\$4	0.09	\$0.01	0.55	9.07	252
CPF DI R12-R18 Ceiling Insulation- Gas Heat GOT	\$3	0.06	\$0.01	0.47	8.31	252
CPF DI R12-R18 Ceiling Insulation- Gas Heat GOT	\$3	0.06	\$0.01	0.47	6.58	252
WA Code Credits: Half Credit Above Code	\$1104	34.28	\$0.00	0.60	0.43	267
WA Code Credits: Efficient Fireplace	\$1	18.3	\$0.00	1.26	259.15	267
WA Code Credits: Smart Thermostat	\$125	14.1	\$0.78	2.09	2.09	267
WA New Homes Smart thermostat	\$125	14.1	\$0.78	N/A	N/A	274

## Appendix 3: Measure Approval Documents