CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

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June 30, 2016

Steven V. King
Executive Director and Secretary
Washington Utilities & Transportation Commission
P.O. Box 47250
Olympia, WA 98504-7250

RE: Conservation Report for Calendar Year 2015

Dear Mr. King:

Cascade Natural Gas Corporation hereby submits an Annual Conservation Achievement Report for Calendar Year 2015. This report is an informational filing provided as a courtesy after the expiration of the Decoupling Mechanism and Annual Reporting requirement found in **Order No. 6** issued in **Docket UG-060256**. This report includes documentation of the Company's calendar year 2015 therm savings achievements and program expenditures as well as a update to the Company's calendar year 2014 cost effectiveness metrics.

Any questions regarding this document should be directed to Monica Cowlishaw, Manager of Energy Efficiency and Community Outreach, at (360)-788-2357 or monica.cowlishaw@cngc.com.

Sincerely,

Michael Parvinen
Director, Regulatory Affairs

Attachments

Cascade Natural Gas Corporation
Annual Conservation Achievement Report
Calendar Year 2015

Background

On October 1, 2007 the Washington Utilities and Transportation Commission (WUTC) approved an addendum to Cascade Natural Gas's Conservation Alliance Plan (CAP) and associated Decoupling Pilot, which was developed in compliance with the Commission's Order 06 in Docket UG-060256. As part of this addendum, the Company agreed to submit "an annual report to the Commission on the achievement of the Calendar Year (CY) therm savings target, along with its Commission Basis results of operations report". Following this order the Company submitted an annual report by March 31 of each year, to report prior years' conservation achievements and associated CAP deferrals. As of October 1, 2010, the Pilot Decoupling Mechanism and accompanying Conservation Plan, approved by the WUTC on October 1, 2007, were no longer in effect. Per its commitment in the 2010 Annual Conservation Report, the Company voluntarily continued this reporting with the WUTC, submitting its conservation achievements by July 1st of the following program year. At the completion of CY 2016 the Company will transition to submittal of the Annual Conservation Report by June 1.

The Annual Conservation Report is intended as a synopsis of Cascade's Energy Efficiency Department achievements and activities in the previous calendar year. Forecasting and program planning will be available for review as an executive summary within the Demand Side Management (DSM) section of our Integrated Resource Plan (IRP) as of the 2016 iteration of the IRP. As of 2015 we transitioned the full assessment of the Company's DSM/Conservation potential, development of targets and description of measures intended to achieve these potentials, as well as all additional data around program development, to a standalone Conservation Plan released in early December.

Please Note: Program achievements for 2015 have been assessed based on a long term discount rate of 4.17%. This is the standard that has consistently been used by Cascade for the purposes of program reporting. As occurred last year, this year's report includes discrete non-energy benefits in an attempt to approach the value of energy efficiency measures in a more nuanced manner for both our residential and commercial programs. The low income programs use a 10% across-the-board adder. These non-energy benefits traditionally have the greatest impact on the Total Resource Cost Test. For the purposes of program valuation and the continuation of robust, multi-faceted energy conservation programs, Cascade continues to utilize the Utility Cost/Program Administrator Cost test as is allowed under UG-121207 in accordance with guidance from our Conservation Advisory Group.

Summary of 2015 Program Achievements

Residential and Commercial

In Calendar Year 2015, Cascade Natural Gas Corporation achieved a deemed therm savings of **181,847** for its **Residential** program. While this is only 54% of the Company's projected goal of 334,011 therms as noted in the December 2014 Memo to the Commission, it is important to note the goals are extremely aggressive and far exceed previous program achievements. CY 2015 displays an increase of approximately 5,400 therms from the previous year as reflected for Calendar Year 2014 program savings and accomplishments (updated at the end of this report).

Cascade achieved a deemed therm savings of **637,930** in its **Commercial** program. This is 155% of the Company's projected savings (411,623 for CY 2015) and an increase of approximately 173,000 therms above the level from the prior year.

On a portfolio level the projected savings total between Residential, Commercial and Low Income for Calendar Year 2015 is **831,501** therms. While the Residential program did not meet the projected savings goal the portfolio as a whole exceeded the combined goal by **80,867** therms. The program's total portfolio also proved cost effective under the Utility Cost Test and the Total Resource Cost Test. The later achievement can be attributed to the Commercial/Industrial program's success in relation to its levelized cost per therm and the program therm savings exceeding the annual goal.

As holds true from past years, programmatic achievements in the Commercial and Industrial sectors are dependent upon a few critical deep therm-savings projects. The Company's conservation team has become adept at identifying key Commercial and Industrial project opportunities and aggressively aiding customers in reducing their energy consumption by pursuing conservation projects in partnership with local energy services companies and the Cascade Natural Gas Conservation Incentive Program (CIP). The Company also assists customers with capitalizing on other programs' offerings as available. At some point it is out of the program's hands and ultimately up to the customer as to whether or not he/she will move forward with a project. It is also common for commercial and industrial projects to stretch beyond the program year in which they were initiated. In such cases, the Company ends up building a queue, or pipeline of projects with deep energy savings potential in future years.

As was forecasted in last year's report, the 2015 program year yielded significantly higher savings in the C&I sector than in 2014 with several major projects concluding. These savings were achieved in addition to standard prescriptive projects throughout the course of the year. It is important to recognize the number and impact generated by custom conservation projects are variable from year to year, meaning the numbers achieved in following years will vary in an ebb and flow pattern. The Company remains committed to pursuing all possible opportunities for deeper energy savings throughout our service area and will continue to solicit projects from customers to drive rebate participation for promoting sustainable, efficient natural gas consumption through our conservation incentive programs.

Table A: 2015 Program Achievements

Totals	**Residential**	**Commercial**	**Total**
Therms Achieved	**181,847**	**637,930**	**819,778**
Measures Installed	2,002	306	2,308
Carbon Offset (pounds CO^2 avoided)	2,127,610	7,463,781	9,591,403

Table B: 2015 Residential/Commercial Programmatic Costs and Rebates

Total Costs	**Residential**	**Commercial**
Incentives Paid	$500,641	$719,713
Programmatic Costs	$388,548	$773,254
NEEA Gas Market Transformation	$145,848	

Costs associated with the NEEA Gas Market Transformation efforts have been separated out from Programmatic Costs for the purposes of assessing program cost-effectiveness for CY 2015. A second calculation in Appendix A can be viewed to assess cost-effectiveness of the program portfolio including the Northwest Energy Efficiency Alliance Gas Market Transformation Collaborative expenses for the first year of the Company's involvement in the five year pilot. Note - expenses associated with the NEEA Collaborative effort will increase throughout the five year pilot.

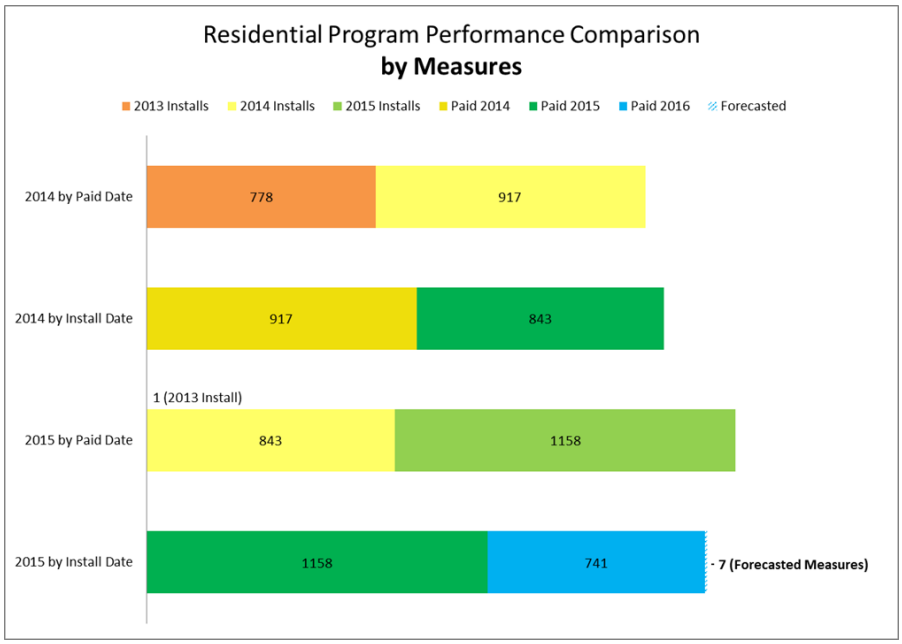
Reporting Format updates

In order to meet requests from our Conservation Advisory Group to provide closer to real-time tracking of program performance, CY 2015 marked the first year Cascade moved from measuring its Conservation Incentive Program annual performance based on measure install dates to tracking and recording rebate eligible upgrades based on the year in which they were paid.

Program guidelines previously allowed participants the flexibility to apply for a rebate up to 90 days after the end of the following calendar year. While this approach allowed the Company to accommodate customers who postponed submitting their paperwork, it was not uncommon for projects from a previous year to remain in the processing queue well into May, causing both a challenge and a delay in reporting these projects. Moving to the paid date methodology should help shorten the amount of time between the end of a calendar year and Cascade's ability to report on Conservation achievement in tandem with updating the program guidelines to require applicants submit their paperwork within 90 days of installation (as opposed to allowing all rebate applications be submitted up to March 1st of the following calendar year). As this is a transition year, it should be noted moving to a new methodology means some projects installed in 2014, but ultimately paid during the CY 2015, have been tracked and reported in both the 2014 Annual Report and this year's report.

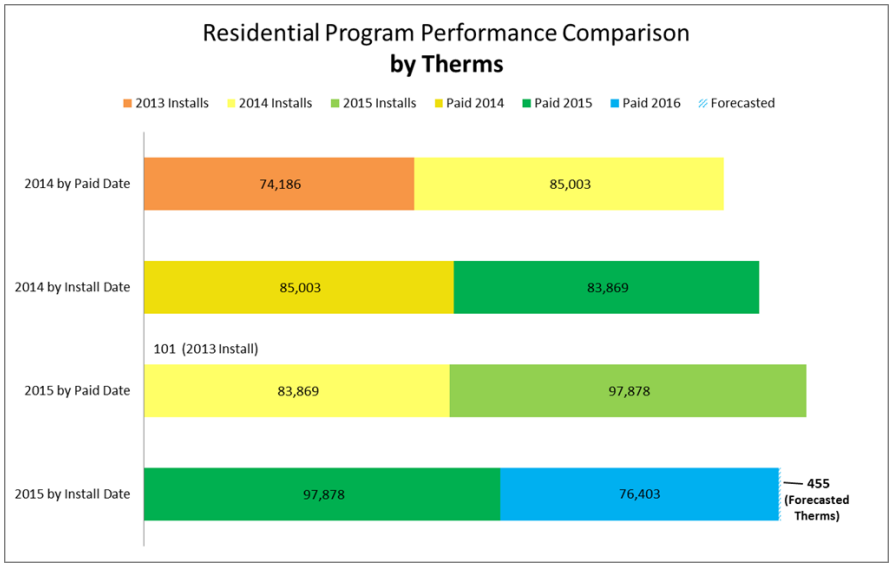
To illustrate the differences in reporting methodology, and aid with transparency for this year's report, we are providing a depiction of the Residential and Commercial program key metric overlaps due to the transition from reporting by install versus paid dates for 2015. We demonstrate how the totals differ under both the previous install date tracking and the current by paid date method. For the Residential program, we have also gone a step further to provide a snapshot of what 2014 would have looked like if it had been calculated using the new measurement style officially implemented as of 2015. We are providing this comparison between the 2014 and 2015 CYs for the Residential program only for the following reasons: 1) The Residential program is traditionally closer to the cost effectiveness boundary and is where we will be concentrating our efforts for the near future to aid with additional program uptake. 2) It impacts the largest number of customers and 3) This program required a true-up to include program savings from measure installs that occurred after the Annual Report was submitted last year.

Chart A: Residential Program Performance Comparison – by **Measures**



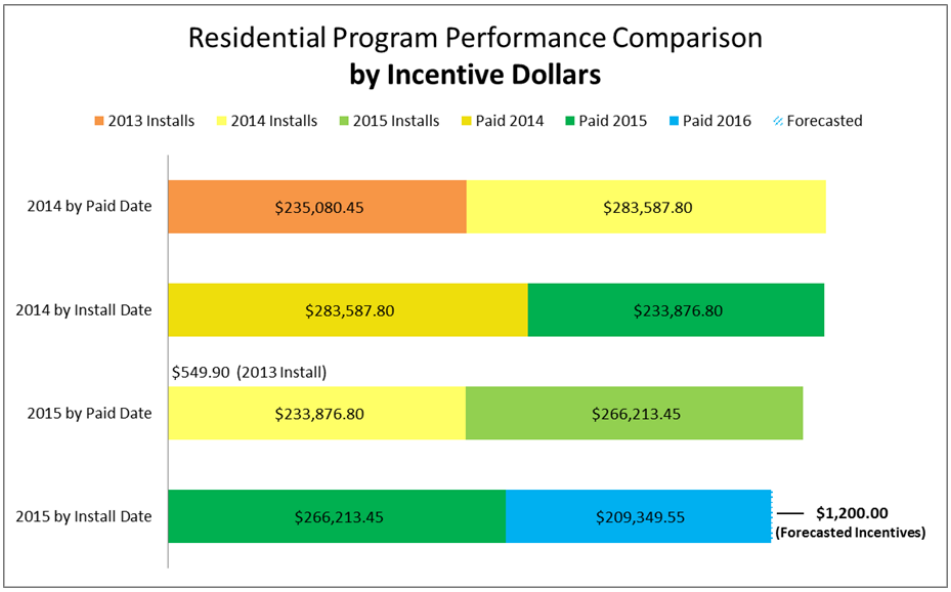
2015 Calendar Program Performance by Measures surpassed 2014 Calendar Year's performance by both Paid Date (18%) and Install Date (8%).

Chart B: Residential Program Performance Comparison – by **Therms**



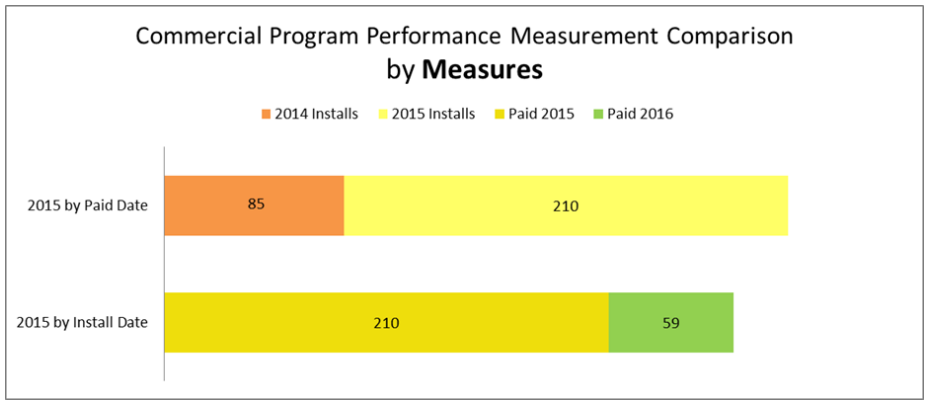
The above chart shows increased therm savings year-over-year, under both methodologies (14% by Paid Date and 3% by Install Date).

Chart C: Residential Program Performance Comparison – by **Incentive Dollars**



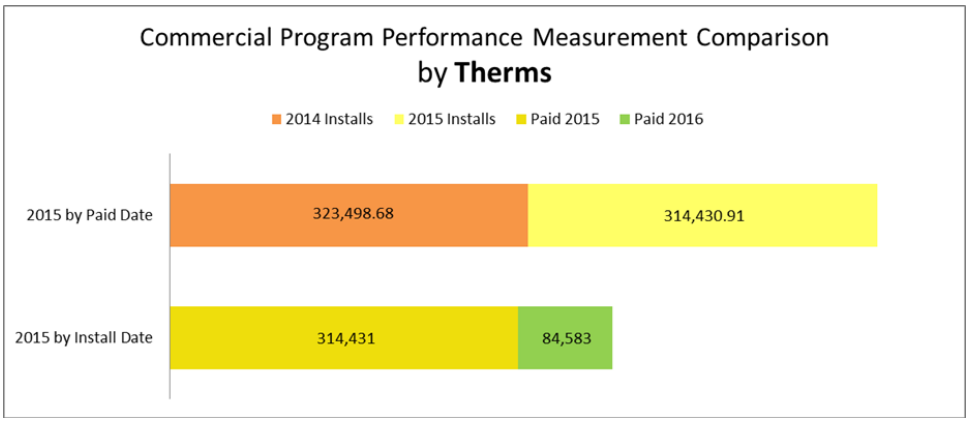
The Residential Program Performance chart above by Incentive Dollars shows despite lowered rebate payments, therm savings and measures installs increased. This opens the door to future discussions with Cascade's Conservation Advisory Group about increasing the Residential CIP's rebate amount paid per measure.

Chart D: Commercial Program Performance Comparison – by **Measures**



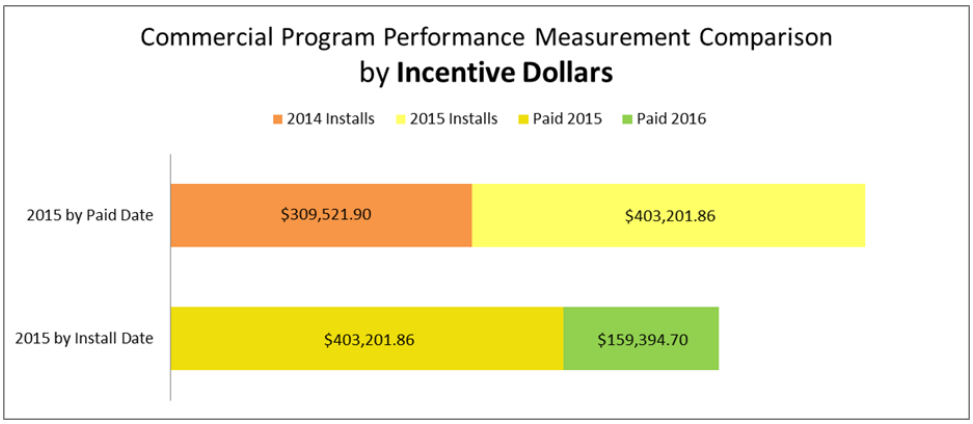
The Commercial CIP chart above demonstrates Cascade's attempt to process and pay an increased proportion of rebates in the year in which they were installed – a decrease of 31% from 85 2014 Installs Paid in 2015 last year to 59 2015 Installs paid in 2016 this year.

Chart E: Commercial Program Performance Comparison – by **Therms**



The chart above is an excellent example of the ebb and flow of therm savings through the Commercial & Industrial CIP – irregular large projects have an uneven effect on an annual performance review, out of proportion with the normal influx of expected therm savings in a given year. While Cascade welcomes and seeks opportunities for as many large projects as are available in our service territory, for prudency sake the Company cannot rely on them as a consistent source of therm savings.

Chart F: Commercial Program Performance Comparison – by **Incentive Dollars**



The horizontal bar graph above further represents the impact large projects have on timing of program reporting and payments.

Low Income

Cascade is deeply committed to ensuring natural gas homeowners in our service area have resources available to help mitigate their energy burden. One of the ways Cascade helps low income customers struggling to afford their energy bills is through our partnership with the Low Income Weatherization Assistance Program (WAP).

Cascade has partnered with the WAP since 2008, offering rebates to the agencies delivering essential home energy improvements to our customers in the State of Washington. The Company believes weatherization offers a long-term solution to energy poverty by improving the overall efficiency of customers' homes. Whereas bill assistance addresses the immediate crisis, weatherization takes a long-lived sustainable approach by addressing the performance of the home, and reducing the amount of energy needed to heat that home, thus supporting long-term affordability. It is therefore in the Company's interest to ensure as many low income natural gas homes receive weatherization services as possible within Cascade's service area.

Weatherization helps mitigate the need for future bill assistance payments and helps avoid reduced arrearages. This, paired with its myriad energy savings benefits, makes it an excellent program for both the Company and our customers.

It is for these reasons that Cascade has become increasingly troubled with the steady decline in the number of homes served by the WAP in our Washington service area.

In 2014 the program achieved **7,338** therms saved with a total of 21 homes served. In 2015, this number dropped to 19 homes served and a total of **11,724** therms saved. Please note the Low Income program does not fall under the same cost-effectiveness criteria as the rest of the portfolio, and while both the Utility Cost and Total Resource Cost are provided in Appendix A, they are not included in the full portfolio cost effectiveness calculation. While the amount of savings in total increased, the Company is concerned this downward trend of homes served will continue unless barriers to Agency participation are addressed.

Cascade has reached out to the Agencies qualified to deliver weatherization services, as well as to low income advocates, to better understand why participation in our program has become increasingly limited. We have learned the decline is the direct result of recently enacted United States Department of Energy Weatherization Assistance Program (USDOE WAP) household prioritization rules that are affecting all recipients of Federal Weatherization dollars.

These rules result in natural gas-heated homes missing from agency weatherization waiting lists in the absence of other prioritization elements such as the elderly, households with young children and/or disabled individuals. The practical result of this reprioritization of natural gas homes equates to customers being turned away from Weatherization Assistance Programs and being told they serve electric homes only. As can be expected this is distressing news to the Company, and is the impetus for us to do all we can to identify viable solutions to ensuring our low income customers receive natural gas weatherization services for which they qualify.

Solutions may include examining alternative models of program delivery, and bridging funding levels between those traditionally provided in acknowledgement of programmatic energy savings, and the total installed cost of allowable weatherization measures. These changes will likely be based from the CNGC Conservation Achievement Tariff (CAT), a Company pilot currently operating in the State of Oregon. The CAT program has successfully increased program participation to levels experienced during the years in which ARRA funding was available. This upcoming year we will be meeting with our Conservation Advisory Group to discuss and explore what solutions could be most appropriate for our Washington service area.

Table C: 2015 Low Income Programmatic Achievements

Totals	**Low Income**
Therms Achieved	**11,724**
Measures Installed	64
Customers Served	19
Carbon Offset (pounds CO^2 Avoided)	137,171

Table D: 2015 Low Income Programmatic Costs

Total Costs	**Low Income**
Incentives Paid	$89,508.21
Programmatic Costs	$7,129.25

Goal Setting

As previously mentioned the Company's platform for goal setting is housed within the Conservation Plan. This Annual Report is, however a good opportunity to delve into some of the factors that can affect whether the Company is able to reach and exceed the aspirational goals set at the achievable level through our TEAPot modeling software. Portfolios are shaped by the Company based on the TEAPOT model and are periodically reevaluated and updated as necessary in order to balance cost-effectiveness, participation outcomes and updated building codes. The Company also confers with our Conservation Advisory Group as appropriate when alterations to the program portfolios are planned and implemented.

In 2013, Cascade hired Nexant, Inc. to produce a Conservation Potential Assessment, which included a new tool for modeling future programs' potential therm savings. The Technical, Economic, Achievable Potential model (TEAPot) was delivered in February 2014 for use in the Demand Side Management chapter of the Integrated Resource Plan (IRP) in collaboration with our internal program design planning and construction.

Unfortunately the original TEAPot model from CY 2014 was unable to include administrative costs in its calculations. This meant, as the total demand forecast was whittled down using a technical screen for available measures and an economic screen for cost-effectiveness, followed by the achievable funneling down of therms attributed to adoption rates, the final forecast was not realistic since it failed to take into account the program's administrative budget constraints.

Recently, the TEAPot model was updated to allow for administrative costs to be included in the cost-effectiveness calculations input into forecasting the programs' potential therm savings. Last fall, Cascade ran the model for the 2015 Conservation Plan at three incentive levels, as well as at a high and low administrative budget level, in order to gain clearer insight into ways to grow the program and maximize therm savings potential.

Incorporating the administrative costs has produced a fairly sizeable therm savings target for our programs, that while still aspirational in nature, is more in line with past banner year performances than those targets developed without inclusion of the administrative costs. Cascade is committed to achieving as many therm savings as possible for our customers in our service territories using available assets, as efficiently as possible. To that effect, it should be noted the Commercial program's 2016 goal of 565,940 therms based on the 2015 Conservation Plan, were surpassed in 2015's final tally. At this point the Residential 2016 goal of 409,975 as developed through the TEAPot model remains out of reach. For this reason, Cascade continues to seek ways to streamline the application process for our customers while finding new avenues of reaching

people to encourage uptake. Cascade will be working with the CAG to seek all opportunities to maximize potential therm savings.

It is also important to note the achievable level of potential noted above is also unable to fully account for all possible reasons a customer would not apply for, or qualify for, a rebate. At a program specific level there are instances where customers do install higher-efficiency upgrades, but choose not to notify the Company of the install by completing an application. Alternatively some customers do apply, but do not qualify for the rebate due to lack of documentation, late submission of an application and a general misunderstanding of program requirements (including rules around using licensed contractors vs self-installs as an example). As part of our efforts to increase customer participation and satisfaction the Company is seeking to remove some of the traditional barriers to a successful rebate submittal including simplifying the application, removing the paid in full requirement prior to approval, and embracing Trade Ally financing options. The Company is delving into these and other options to increase participation with the CAG.

Program Updates

As of February 2016 the Company altered its Residential program implementation model. We moved away from the use of a third party program delivery vendor to internal implementation of the programs through Cascade staff and resources. The company underwent a Request For Proposal (RFP) process for a new software package to support the internal implementation. The tool was to include a new customer facing portal for rebate submittal, a robust Trade Ally Management tool and a means to process rebates internally through a single software product. The Company elected to work with Nexant Inc.'s iDSM Central and iTrade Ally. The Public User Interface is currently available and the CNGC Energy Efficiency staff are currently processing rebates through the new software, with the Trade Ally software development in process.

This modification to the residential program delivery has greatly increased the Company's flexibility and control of program data reporting and data integrity while allowing us to significantly improve the customer's experience in the hopes of removing barriers to program uptake. Further development of internal processes and software will assist the Company to expedite rebate processing and achieve our aspirational goals.

Participation Summary

A full breakdown of therm savings, utility costs and total resource costs by all measures and programs for the 2015 program year can be found in Appendix A.

Updates to CY14 Program Achievements

Cascade has included a true-up of the Company's previous year's report to capture outlying measures from customer application processing which completed after the annual report was developed in 2015. These additional residential measures were installed in CY 2014 with application processing completed in 2015. As mentioned previously the Company has moved toward counting therm savings by paid date as opposed to the previous practice of counting the savings in the year in which the measure was installed. Because the practice was by install date for the 2014 calendar year this true-up is in line with that practice and all measures added to the 2014 totals were installed in 2014 by customers. The alterations noted below occurred to capture all savings associated with installs from the 2014 calendar year by allowing customers time to follow-up on pending application inquiries. The Company has made the adjustments to its claimed therm savings in the residential sector for Calendar Year 2014 to include the additional achieved savings, correct some previously misallocated rebates by the residential program

delivery vendor and include two admin costs for activities that occurred in 2014, but were billed in 2015 (one residential and one commercial). The additional measures added to the report can be viewed in Appendix B and are represented by the highlighted lines in the Participants and Measures installed columns.

Table E: 2014 Residential/Commercial Therm Savings True-up

Totals	**Residential**	**Commercial**	**Total**
Therms Achieved	**176,439**	**465,176**	**641,615**
Measures Installed	1998	212	2,210
Carbon Offset (CO^2 equivalent metric tons avoided)	935	2,466	3,401

Appendix B provides the updated therm savings, total resource costs and utility costs by measure for the residential and commercial program (the low income program did not require an update) for calendar year 2014. It also provides the full portfolio update of cost effectiveness.

CASCADE NATURAL GAS CORPORATION

2015 Program Participant Cost Effectiveness Estimate Summary excluding NEEA Market Transformation Expenses

PROGRAM	UNITS	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
RESIDENTIAL (includes units of insulation)	2,002	181,847	$ 1,861,957	$ 808,042	23.36	2,546,349	$ 388,548	$ 500,640	$ 0.197	$ 0.349	1.346		$ 0.414	$ 0.566	0.721
COMMERCIAL	306	637,930	$ 1,619,269	$ 832,418	15.07	6,915,701	$ 773,254	$ 719,713	$ 0.104	$ 0.216	2.230		$ 0.114	$ 0.226	1.897
TOTAL	**2,308**	**819,778**	**$ 3,481,227**	**$ 1,640,460**	**16.91**	**9,462,050**	**$ 1,161,802**	**$ 1,220,353**	**$ 0.129**	**$ 0.252**	**1.865**		**$ 0.195**	**$ 0.317**	**1.316**

PROGRAM	MEASURES	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
LOW INCOME	**64**	**11,724**	**$ 138,844**	**$ 13,884**	**27.65**	**188,836**	**$ 7,129**	**$ 89,508**	**$ 0.474**	**$ 0.512**	**0.867**		**$ 0.662**	**$ 0.699**	**0.540**

IRP Discount Rate	8.76%
Inflation rate	2.00%
Long Term Discount Rate	4.17%
NEEA Market Transformation Expenses	$145,848.00
2015	

The Company has devised an intuitive and focused approach to measuring non-energy benefits for our Commercial and Residential program measures. Please note the Low Income program uses a blanket 10 percent adder for yearly achievements.

2015 Program Participant Cost Effectiveness Estimate Summary including NEEA Market Transformation Expenses

PROGRAM	UNITS	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN W/ NEEA	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
RESIDENTIAL (includes units of insulation)	2,002	181,847	$ 1,861,957	$ 808,042	23	2,546,349	$ 388,548	$ 500,640	$ 0.197	$ 0.349	1.346		$ 0.414	$ 0.566	0.721
COMMERCIAL	306	637,930	$ 1,619,269	$ 832,418	15	6,915,701	$ 773,254	$ 719,713	$ 0.104	$ 0.216	2.230		$ 0.114	$ 0.226	1.897
TOTAL	**2,308**	**819,778**	**3,481,227**	**1,640,460**	**16.91**	**9,462,050**	**1,307,650**	**1,220,353**	**$ 0.140**	**$ 0.267**	**1.758**		**$ 0.195**	**$ 0.333**	**1.255**

Program Year:
2015

CASCADE NATURAL GAS CORPORATION
RESIDENTIAL Program Participant Cost Effectiveness

MEASURE	ZONE	EFFICIENCY RATING	PARTICIPANTS	MEASURES INSTALLED	ANNUAL THERM SAVINGS	TOTAL ANNUAL THERM SAVINGS	MEASURE INCREMENTAL COST	SOCIETAL NEBS	PARTICIPANT NEBS	TOTAL INCREMENTAL COST	TOTAL NET INCREMENTAL COST WITH NEBS	MEASURE LIFE	TRC DISCOUNTED THERM SAVINGS	UCT DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	PROGRAM REBATE	TOTAL REBATES COST	UTILITY COST	UC W/DELIVERY & ADMIN	LOADED UTILITY BENEFIT TO COST RATIO	TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	LOADED SOCIETAL BENEFIT TO COST RATIO
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	1	HERS 75	0	0	206	0	$ 1,142.00	$ 502.66	$ 534.07	$ -	$ -	30	0	0	$ -	$ 600.00	$ -	$ -	$ -	-	$ -	$ -	-
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	2	HERS 75	0	0	200	0	$ 1,142.00	$ 488.02	$ 529.25	$ -	$ -	30	0	0	$ -	$ 600.00	$ -	$ -	$ -	-	$ -	$ -	-
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	3	HERS 75	21	21	207	4,347	$ 1,142.00	$ 505.10	$ 534.88	$ 23,982.00	$ 2,142.39	30	73,641	73,641	$ 9,288.10	$ 600.00	$ 12,600.00	$ 0.171	$ 0.297	1.470	$ 0.029	$ 0.155	2.396
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	1	Federal Tax Credit Eligible	0	0	235	0	$ 3,700.00	$ 573.43	$ 813.21	$ -	$ -	30	0	0	$ -	$ 550.00	$ -	$ -	$ -	-	$ -	$ -	-
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	2	Federal Tax Credit Eligible	0	0	221	0	$ 3,700.00	$ 539.27	$ 801.94	$ -	$ -	30	0	0	$ -	$ 550.00	$ -	$ -	$ -	-	$ -	$ -	-
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	3	Federal Tax Credit Eligible	5	5	296	1,480	$ 3,700.00	$ 722.27	$ 862.29	$ 18,500.00	$ 10,577.16	30	25,072	25,072	$ 3,162.27	$ 550.00	$ 2,750.00	$ 0.110	$ 0.236	1.853	$ 0.422	$ 0.548	0.679
Built Green Certified Home	1	Built Green Certified	1	1	209	209	$ 1,142.00	$ 509.98	$ 536.49	$ 1,142.00	$ 95.53	30	3,541	3,541	$ 446.56	$ 600.00	$ 600.00	$ 0.169	$ 0.296	1.479	$ 0.027	$ 0.153	2.429
Built Green Certified Home	2	Built Green Certified	0	0	203	0	$ 1,142.00	$ 495.34	$ 531.66	$ -	$ -	30	0	0	$ -	$ 600.00	$ -	$ -	$ -	-	$ -	$ -	-
Built Green Certified Home	3	Built Green Certified	0	0	210	0	$ 1,142.00	$ 512.42	$ 537.29	$ -	$ -	30	0	0	$ -	$ 600.00	$ -	$ -	$ -	-	$ -	$ -	-
95% AFUE Gas Furn Upgrade E* **OLD**	1	95% AFUE Rating	0	0	111	0	$ 1,024.00	$ 213.50	$ 355.53	$ -	$ -	18	0	0	$ -	$ 200.00	$ -	$ -	$ -	-	$ -	$ -	-
95% AFUE Gas Furn Upgrade E* **OLD**	2	95% AFUE Rating	0	0	110	0	$ 1,024.00	$ 211.57	$ 354.93	$ -	$ -	18	0	0	$ -	$ 200.00	$ -	$ -	$ -	-	$ -	$ -	-
95% AFUE Gas Furn Upgrade E* **OLD**	3	95% AFUE Rating	5	5	111	555	$ 1,024.00	$ 213.50	$ 355.53	$ 5,120.00	$ 2,274.89	18	6,930	6,930	$ 1,185.85	$ 200.00	$ 1,000.00	$ 0.144	$ 0.315	1.460	$ 0.328	$ 0.499	0.820
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	1	95% AFUE Rating	1	1	111	111	$ 1,024.00	$ 213.50	$ 355.53	$ 1,024.00	$ 454.98	18	1,386	1,386	$ 237.17	$ 250.00	$ 250.00	$ 0.180	$ 0.352	1.310	$ 0.328	$ 0.499	0.820
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	2	95% AFUE Rating	0	0	110	0	$ 1,024.00	$ 211.57	$ 354.93	$ -	$ -	18	0	0	$ -	$ 250.00	$ -	$ -	$ -	-	$ -	$ -	-
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	3	95% AFUE Rating	21	21	111	2,331	$ 1,024.00	$ 213.50	$ 355.53	$ 21,504.00	$ 9,554.53	18	29,105	29,105	$ 4,980.58	$ 250.00	$ 5,250.00	$ 0.180	$ 0.352	1.310	$ 0.328	$ 0.499	0.820
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	1	90% AFUE Rating	1	1	65	65	$ 500.00	$ 125.02	$ 88.55	$ 500.00	$ 286.43	18	812	812	$ 138.88	$ 150.00	$ 150.00	$ 0.185	$ 0.356	1.294	$ 0.353	$ 0.524	0.781
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	2	90% AFUE Rating	0	0	61	0	$ 500.00	$ 117.33	$ 86.18	$ -	$ -	18	0	0	$ -	$ 150.00	$ -	$ -	$ -	-	$ -	$ -	-
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	3	90% AFUE Rating	0	0	81	0	$ 500.00	$ 155.79	$ 98.04	$ -	$ -	18	0	0	$ -	$ 150.00	$ -	$ -	$ -	-	$ -	$ -	-
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	1	90% AFUE Rating	1	1	81	81	$ 800.00	$ 155.79	$ 128.04	$ 800.00	$ 516.16	18	1,011	1,011	$ 173.07	$ 150.00	$ 150.00	$ 0.148	$ 0.319	1.442	$ 0.510	$ 0.681	0.601
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	2	90% AFUE Rating	0	0	75	0	$ 800.00	$ 144.25	$ 124.48	$ -	$ -	18	0	0	$ -	$ 150.00	$ -	$ -	$ -	-	$ -	$ -	-
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	3	90% AFUE Rating	0	0	99	0	$ 800.00	$ 190.42	$ 138.72	$ -	$ -	18	0	0	$ -	$ 150.00	$ -	$ -	$ -	-	$ -	$ -	-
95% AFUE New Gas Furnace (New & Existing)	1	95% AFUE Rating	596	596	111	66,156	$ 1,024.00	$ 213.50	$ 355.53	$ 610,304.00	$ 271,166.62	18	826,034	826,034	$ 141,353.49	$ 250.00	$ 149,000.00	$ 0.180	$ 0.352	1.310	$ 0.328	$ 0.499	0.820
95% AFUE New Gas Furnace (New & Existing)	2	95% AFUE Rating	145	145	110	15,950	$ 1,024.00	$ 211.57	$ 354.93	$ 148,480.00	$ 66,336.64	18	199,154	199,154	$ 34,079.87	$ 250.00	$ 36,250.00	$ 0.182	$ 0.353	1.304	$ 0.333	$ 0.504	0.812
95% AFUE New Gas Furnace (New & Existing)	3	95% AFUE Rating	320	320	111	35,520	$ 1,024.00	$ 213.50	$ 355.53	$ 327,680.00	$ 145,592.82	18	443,508	443,508	$ 75,894.49	$ 250.00	$ 80,000.00	$ 0.180	$ 0.352	1.310	$ 0.328	$ 0.499	0.820
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	1	80% AFUE Rating	2	2	75	150	$ 600.00	$ 152.10	$ 308.52	$ 1,200.00	$ 278.77	20	2,008	2,008	$ 320.50	$ 250.00	$ 500.00	$ 0.249	$ 0.409	1.106	$ 0.139	$ 0.298	1.347
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	2	80% AFUE Rating	1	1	75	75	$ 600.00	$ 152.10	$ 308.52	$ 600.00	$ 139.38	20	1,004	1,004	$ 160.25	$ 250.00	$ 250.00	$ 0.249	$ 0.409	1.106	$ 0.139	$ 0.298	1.347
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	3	80% AFUE Rating	1	1	75	75	$ 600.00	$ 152.10	$ 308.52	$ 600.00	$ 139.38	20	1,004	1,004	$ 160.25	$ 250.00	$ 250.00	$ 0.249	$ 0.409	1.106	$ 0.139	$ 0.298	1.347
70% FE Hearth **OLD**	1	70 % FE Rating	2	2	56	112	$ 425.00	$ 113.57	$ 278.93	$ 850.00	$ 65.00	20	1,499	1,499	$ 239.31	$ 200.00	$ 400.00	$ 0.267	$ 0.426	1.060	$ 0.043	$ 0.203	1.980
70% FE Hearth **OLD**	2	70 % FE Rating	2	2	56	112	$ 425.00	$ 113.57	$ 278.93	$ 850.00	$ 65.00	20	1,499	1,499	$ 239.31	$ 200.00	$ 400.00	$ 0.267	$ 0.426	1.060	$ 0.043	$ 0.203	1.980
70% FE Hearth **OLD**	3	70 % FE Rating	1	1	56	56	$ 425.00	$ 113.57	$ 278.93	$ 425.00	$ 32.50	20	750	750	$ 119.65	$ 200.00	$ 200.00	$ 0.267	$ 0.426	1.060	$ 0.043	$ 0.203	1.980
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	1	70 % FE Rating	29	29	56	1,624	$ 425.00	$ 113.57	$ 278.93	$ 12,325.00	$ 942.47	20	21,742	21,742	$ 3,469.95	$ 150.00	$ 4,350.00	$ 0.200	$ 0.360	1.257	$ 0.043	$ 0.203	1.980
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	2	70 % FE Rating	10	10	56	560	$ 425.00	$ 113.57	$ 278.93	$ 4,250.00	$ 324.99	20	7,497	7,497	$ 1,196.53	$ 150.00	$ 1,500.00	$ 0.200	$ 0.360	1.257	$ 0.043	$ 0.203	1.980
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	3	70 % FE Rating	4	4	56	224	$ 425.00	$ 113.57	$ 278.93	$ 1,700.00	$ 130.00	20	2,999	2,999	$ 478.61	$ 150.00	$ 600.00	$ 0.200	$ 0.360	1.257	$ 0.043	$ 0.203	1.980
High Efficiency Entryway Door	1	Door U-Factor <0.21 Energy Star Door	8	8	13	104	$ 200.00	$ 29.32	$ 259.65	$ 1,600.00	$ (711.74)	25	1,596	1,596	$ 222.21	$ 50.00	$ 400.00	$ 0.251	$ 0.390	1.137	$ (0.446)	$ (0.307)	(1.256)
High Efficiency Entryway Door	2	Door U-Factor <0.21 Energy Star Door	0	0	13	0	$ 200.00	$ 29.32	$ 259.65	$ -	$ -	25	0	0	$ -	$ 50.00	$ -	$ -	$ -	-	$ -	$ -	-
High Efficiency Entryway Door	3	Door U-Factor <0.21 Energy Star Door	3	3	13	39	$ 200.00	$ 29.32	$ 259.65	$ 600.00	$ (266.90)	25	598	598	$ 83.33	$ 50.00	$ 150.00	$ 0.251	$ 0.390	1.137	$ (0.446)	$ (0.307)	(1.256)
Ceiling Insulation	1	Equal to or Greater than R-38	103	111583	0.062	6,918	$ 0.67	$ 0.17	$ 302.62	$ 74,760.61	$ 43,572.75	45	139,513	139,513	$ 14,781.79	$ 0.30	$ 33,474.90	$ 0.240	$ 0.346	1.193	$ 0.312	$ 0.418	0.822
Ceiling Insulation	2	Equal to or Greater than R-38	19	24755	0.057	1,411	$ 0.67	$ 0.16	$ 302.62	$ 16,585.85	$ 10,833.11	45	28,455	28,455	$ 3,014.92	$ 0.30	$ 7,426.50	$ 0.261	$ 0.367	1.124	$ 0.381	$ 0.487	0.707
Ceiling Insulation	3	Equal to or Greater than R-38	70	92601	0.067	6,204	$ 0.67	$ 0.19	$ 302.63	$ 62,042.67	$ 40,845.72	45	125117	125,117	13256.46648	$ 0.30	$ 27,780.30	$ 0.222	$ 0.328	1.258	$ 0.326	$ 0.432	0.795
Floor Insulation **OLD**	1	Equal to or Greater than R-30 or to fill cavity	11	10763	0.056	603	$ 1.08	$ 0.16	$ 0.16	$ 11,624.04	$ 11,620.53	45	12,155	12,155	$ 1,287.83	$ 0.45	$ 4,843.35	$ 0.398	$ 0.504	0.818	$ 0.956	$ 1.062	0.324
Floor Insulation **OLD**	2	Equal to or Greater than R-30 or to fill cavity	2	1670	0.054	90	$ 1.08	$ 0.15	$ 0.16	$ 1,803.60	$ 1,802.98	45	1,819	1,819	$ 192.68	$ 0.45	$ 751.50	$ 0.413	$ 0.519	0.795	$ 0.991	$ 1.097	0.313
Floor Insulation **OLD**	3	Equal to or Greater than R-30 or to fill cavity	4	3537	0.059	209	$ 1.08	$ 0.17	$ 0.16	$ 3,819.96	$ 3,818.64	45	4,208	4,208	$ 445.89	$ 0.45	$ 1,591.65	$ 0.378	$ 0.484	0.852	$ 0.907	$ 1.013	0.339
Floor Insulation *(Incentive decreased effective 09/02/2014)*	1	Equal to or Greater than R-30 or to fill cavity	142	162298	0.056	9,089	$ 1.08	$ 0.16	$ 0.16	$ 175,281.84	$ 175,236.51	45	183,285	183,285	$ 19,419.52	$ 0.30	$ 48,689.40	$ 0.266	$ 0.372	1.110	$ 0.956	$ 1.062	0.324
Floor Insulation *(Incentive decreased effective 09/02/2014)*	2	Equal to or Greater than R-30 or to fill cavity	17	21425	0.054	1,157	$ 1.08	$ 0.15	$ 0.16	$ 23,139.00	$ 23,133.70	45	23,331	23,331	$ 2,472.02	$ 0.30	$ 6,427.50	$ 0.275	$ 0.381	1.082	$ 0.992	$ 1.097	0.313
Floor Insulation *(Incentive decreased effective 09/02/2014)*	3	Equal to or Greater than R-30 or to fill cavity	30	34149	0.059	2,015	$ 1.08	$ 0.17	$ 0.16	$ 36,880.92	$ 36,871.00	45	40,631	40,631	$ 4,304.94	$ 0.30	$ 10,244.70	$ 0.252	$ 0.358	1.152	$ 0.907	$ 1.013	0.339
Wall Insulation **OLD**	1	Equal to or Greater than R-11 to fill cavity	5	5285	0.071	375	$ 1.18	$ 0.20	$ 0.19	$ 6,236.30	$ 6,234.37	45	7,567	7,567	$ 801.75	$ 0.40	$ 2,114.00	$ 0.279	$ 0.385	1.071	$ 0.824	$ 0.930	0.370
Wall Insulation **OLD**	2	Equal to or Greater than R-11 to fill cavity	0	0	0.065	0	$ 1.18	$ 0.18	$ 0.18	$ -	$ -	45	0	0	$ -	$ 0.40	$ -	$ -	$ -	-	$ -	$ -	-
Wall Insulation **OLD**	3	Equal to or Greater than R-11 to fill cavity	6	4458	0.076	339	$ 1.18	$ 0.21	$ 0.19	$ 5,260.44	$ 5,258.01	45	6,832	6,832	$ 723.92	$ 0.40	$ 1,783.20	$ 0.261	$ 0.367	1.124	$ 0.770	$ 0.876	0.393
Wall Insulation *(Incentive decreased effective 09/02/2014)*	1	Equal to or Greater than R-11 to fill cavity	54	50418	0.071	3,580	$ 1.18	$ 0.20	$ 0.19	$ 59,493.24	$ 59,472.41	45	72,189	72,189	$ 7,648.59	$ 0.35	$ 17,646.30	$ 0.244	$ 0.350	1.178	$ 0.824	$ 0.930	0.370
Wall Insulation *(Incentive decreased effective 09/02/2014)*	2	Equal to or Greater than R-11 to fill cavity	7	7659	0.065	498	$ 1.18	$ 0.18	$ 0.18	$ 9,037.62	$ 9,035.08	45	10,039	10,039	$ 1,063.71	$ 0.35	$ 2,680.65	$ 0.267	$ 0.373	1.106	$ 0.900	$ 1.006	0.342
Wall Insulation *(Incentive decreased effective 09/02/2014)*	3	Equal to or Greater than R-11 to fill cavity	28	20412	0.076	1,551	$ 1.18	$ 0.21	$ 0.19	$ 24,086.16	$ 24,074.83	45	31,284	31,284	$ 3,314.64	$ 0.35	$ 7,144.20	$ 0.228	$ 0.334	1.234	$ 0.770	$ 0.876	0.393
High Efficiency Combination Radiant Heat **OLD**	1	90% Eff Condensing Tankless Combo w/ WH	1	1	475	475	$ 2,500.00	$ 986.67	$ 768.82	$ 2,500.00	$ 744.52	21	6,561	6,561	$ 1,014.92	$ 1,000.00	$ 1,000.00	$ 0.152	$ 0.307	1.491	$ 0.113	$ 0.268	1.485
High Efficiency Combination Radiant Heat **OLD**	2	90% Eff Condensing Tankless Combo w/ WH	0	0	468	0	$ 2,500.00	$ 972.13	$ 764.22	$ -	$ -	21	0	0	$ -	$ 1,000.00	$ -	$ -	$ -	-	$ -	$ -	-
High Efficiency Combination Radiant Heat **OLD**	3	90% Eff Condensing Tankless Combo w/ WH	0	0	476	0	$ 2,500.00	$ 988.75	$ 769.47	$ -	$ -	21	0	0	$ -	$ 1,000.00	$ -	$ -	$ -	-	$ -	$ -	-
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014*	1	90% Eff Condensing Tankless Combo w/ WH	6	6	475	2,850	$ 2,500.00	$ 986.67	$ 768.82	$ 15,000.00	$ 4,467.09	21	39,364	39,364	$ 6,089.51	$ 825.00	$ 4,950.00	$ 0.126	$ 0.280	1.633	$ 0.113	$ 0.268	1.485
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014)*	2	90% Eff Condensing Tankless Combo w/ WH	6	6	468	2,808	$ 2,500.00	$ 972.13	$ 764.22	$ 15,000.00	$ 4,581.89	21	38,784	38,784	$ 5,999.77	$ 825.00	$ 4,950.00	$ 0.128	$ 0.282	1.622	$ 0.118	$ 0.273	1.460
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014)*	3	90% Eff Condensing Tankless Combo w/ WH	0	0	476	0	$ 2,500.00	$ 988.75	$ 769.47	$ -	$ -	21	0	0	$ -	$ 825.00	$ -	$ -	$ -	-	$ -	$ -	-
.64 Water Heater **(Discontinued 09/02/2014)**	1	0.64 Energy Factor or Greater	1	1	33	33	$ 185.00	$ 51.25	$ 33.07	$ 185.00	$ 100.68	12	307	307	$ 70.51	$ 40.00	$ 40.00	$ 0.130	$ 0.360	1.319	$ 0.328	$ 0.558	0.774
.64 Water Heater **(Discontinued 09/02/2014)**	2	0.64 Energy Factor or Greater	2	2	33	66	$ 185.00	$ 51.25	$ 33.07	$ 370.00	$ 201.37	12	613	613	$ 141.02	$ 40.00	$ 80.00	$ 0.130	$ 0.360	1.319	$ 0.328	$ 0.558	0.774
.64 Water Heater **(Discontinued 09/02/2014)**	3	0.64 Energy Factor or Greater	1	1	33	33	$ 185.00	$ 51.25	$ 33.07	$ 185.00	$ 100.68	12	307	307	$ 70.51	$ 40.00	$ 40.00	$ 0.130	$ 0.360	1.319	$ 0.328	$ 0.558	0.774
														0									
.67 Water Heater	1	0.67 Energy Factor or Greater	8	8	33	264	$ 139.00	$ 59.73	$ 31.94	$ 1,112.00	$ 378.69	16	3,038	3,038	$ 564.08	$ 45.00	$ 360.00	$ 0.118	$ 0.304	1.548	$ 0.125	$ 0.310	1.348
.67 Water Heater	2	0.67 Energy Factor or Greater	2	2	33	66	$ 139.00	$ 59.73	$ 31.94	$ 278.00	$ 94.67	16	759	759	$ 141.02	$ 45.00	$ 90.00	$ 0.118	$ 0.304	1.548	$ 0.125	$ 0.310	1.348
.67 Water Heater	3	0.67 Energy Factor or Greater	4	4	33	132	$ 139.00	$ 59.73	$ 31.94	$ 556.00	$ 189.34	16	1,519	1,519	$ 282.04	$ 45.00	$ 180.00	$ 0.118	$ 0.304	1.548	$ 0.125	$ 0.310	1.348
.91 Tankless Hot Water Heater	1	0.91 Energy Factor or Greater	67	67	54	3,618	$ 1,171.00	$ 103.86	$ 336.42	$ 78,457.00	$ 48,958.06	18	45,175	45,175	$ 7,730.47	$ 150.00	$ 10,050.00	$ 0.222	$ 0.394	1.170	$ 1.084	$ 1.255	0.326
.91 Tankless Hot Water Heater	2	0.91 Energy Factor or Greater	27	27	54	1,458	$ 1,171.00	$ 103.86	$ 336.42	$ 31,617.00	$ 19,729.37	18	18,205	18,205	$ 3,115.26	$ 150.00	$ 4,050.00	$ 0.222	$ 0.394	1.170	$ 1.084	$ 1.255	0.326
.91 Tankless Hot Water Heater	3	0.91 Energy Factor or Greater	17	17	54	918	$ 1,171.00	$ 103.86	$ 336.42	$ 19,907.00	$ 12,422.19	18	11,462	11,462	$ 1,961.46	$ 150.00	$ 2,550.00	$ 0.222	$ 0.394	1.170	$ 1.084	$ 1.255	0.326
Energy Saver Kit (Kit 1)	1	Low Flow Showerhead plus Aerators	19	19	17	323	$ 10.00	$ 15.86	$ 69.17	$ 190.00	$ -	10	2,598	2,598	$ 690.14	$ 10.00	$ 190.00	$ 0.073	$ 0.339	1.427	$ -	$ 0.266	1.655
Energy Saver Kit (Kit 1)	2	Low Flow Showerhead plus Aerators	3	3	17	51	$ 10.00	$ 15.86	$ 69.17	$ 30.00	$ -	10	410	410	$ 108.97	$ 10.00	$ 30.00	$ 0.073	$ 0.339	1.427	$ -	$ 0.266	1.655
Energy Saver Kit (Kit 1)	3	Low Flow Showerhead plus Aerators	13	13	17	221	$ 10.00	$ 15.86	$ 69.17	$ 130.00	$ -	10	1,777	1,777	$ 472.20	$ 10.00	$ 130.00	$ 0.073	$ 0.339	1.427	$ -	$ 0.266	1.655
Energy Saver Kit (Kit 2)	1	Low Flow Showerhead plus Aerators	77	77	31	2,387	$ 16.00	$ 28.92	$ 69.17	$ 1,232.00	$ -	10	19,198	19,198	$ 5,100.23	$ 16.00	$ 1,232.00	$ 0.064	$ 0.330	1.466	$ -	$ 0.266	1.655
Energy Saver Kit (Kit 2)	2	Low Flow Showerhead plus Aerators	15	15	31	465	$ 16.00	$ 28.92	$ 69.17	$ 240.00	$ -	10	3,740	3,740	$ 993.55	$ 16.00	$ 240.00	$ 0.064	$ 0.330	1.466	$ -	$ 0.266	1.655
Energy Saver Kit (Kit 2)	3	Low Flow Showerhead plus Aerators	55	55	31	1,705	$ 16.00	$ 28.92	$ 69.17	$ 880.00	$ -	10	13,713	13,713	$ 3,643.02	$ 16.00	$ 880.00	$ 0.064	$ 0.330	1.466	$ -	$ 0.266	1.655
TOTAL PROGRAM			**2002**	**552,517**		**181,847.336**				**$ 1,861,957.25**	**$ 1,053,915.17**	**23.36**	**2,546,349**	**2,546,349**	**$ 388,548**		**$ 500,640.15**	**$ 0.197**	**$ 0.349**	**1.345**	**$ 0.414**	**$ 0.566**	**0.721**

IRP Discount Rate	8.76%
Inflation Rate	2.00%
Long Term Discount Rate	4.17%
Total Res Program Admin	**$ 388,547.61**

808,042

Balance per detail

CASCADE NATURAL GAS CORPORATION
COMMERCIAL Program Participant Cost Effectiveness

MEASURE	DESCRIPTION	TOTAL MEASURE COUNT	ANNUAL THERM SAVINGS/UNIT	UNITS	UNITS INSTALLED	TOTAL ANNUAL THERM SAVINGS	MEASURE INCREM COST	TOTAL INCREMENTAL COSTS	SOCIETAL NEBS	PARTICIPANT NEBS	NET INSTALLED COST	LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	PROGRAM REBATE	TOTAL REBATES COST	UTILITY COST	LOADED UC	BENEFIT COST RATIO	TOTAL RESOURCE COST	LOADED TRC	BENEFIT COST RATIO
Standard Measures																						
HVAC Unit Heater	High-Eff Non-Condensing with Electronic	0.00	0.61	kBtu/hr	0.00	0.00	$ 3.26	$ -	$ 1.16	$ 0.40	$ -	18	0	$ -	$ 1.50	$ -	$ -	$ -	-	$ -	$ -	-
HVAC Unit Heater	High Efficiency Condensing	1.00	1.10	kBtu/hr	130.00	143.00	$ 5.23	$ 679.90	$ 2.09	$ 0.73	$ 314	18	1,786	$ 361.84	$ 3.00	$ 390	$ 0.218	$ 0.421	1.094	$ 0.176	$ 0.378	1.082
Warm Air Furnace	High Efficiency Condensing Furnace	16.00	1.10	kBtu/hr	1,234.00	1357.40	$ 6.72	$ 8,292.48	$ 2.09	$ 0.73	$ 4,817	18	16,949	$ 3,434.73	$ 3.00	$ 3,702	$ 0.218	$ 0.421	1.094	$ 0.284	$ 0.487	0.841
Radiant Heating	Direct Fired Radiant Heating	0.00	4.33	kBtu/hr	0.00	0.00	$ 21.00	$ -	$ 8.22	$ 2.86	$ -	18	0	$ -	$ 6.50	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Attic	Attic Insulation (Tier 1 - Z1 &Z3)	0.00	0.40	sq. ft.	0.00	0.00	$ 1.35	$ -	$ 0.96	$ 0.34	$ -	30	0	$ -	$ 0.50	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Attic	Attic Insulation (Tier 1- Z2)	0.00	0.22	sq. ft.	0.00	0.00	$ 1.35	$ -	$ 0.53	$ 0.19	$ -	30	0	$ -	$ 0.50	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Attic	Attic Insulation (Tier 2 - Z1 &Z3)	0.00	0.41	sq. ft.	0.00	0.00	$ 1.63	$ -	$ 0.98	$ 0.35	$ -	30	0	$ -	$ 0.65	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Attic	Attic Insulation (Tier 2 - Z2)	0.00	0.23	sq. ft.	0.00	0.00	$ 1.63	$ -	$ 0.56	$ 0.20	$ -	30	0	$ -	$ 0.65	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 1 - Z1 & Z3)	0.00	0.45	sq. ft.	0.00	0.00	$ 1.83	$ -	$ 1.08	$ 0.39	$ -	30	0	$ -	$ 0.60	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 1 Z2)	0.00	0.25	sq. ft.	0.00	0.00	$ 1.83	$ -	$ 0.60	$ 0.22	$ -	30	0	$ -	$ 0.60	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 2 - Z1 & Z3)	0.00	0.46	sq. ft.	0.00	0.00	$ 2.15	$ -	$ 1.11	$ 0.40	$ -	30	0	$ -	$ 0.80	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 2- Z2)	0.00	0.25	sq. ft.	0.00	0.00	$ 2.15	$ -	$ 0.61	$ 0.22	$ -	30	0	$ -	$ 0.80	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 1- Z1 & Z3)	0.00	0.22	sq. ft.	0.00	0.00	$ 1.50	$ -	$ 0.53	$ 0.19	$ -	30	0	$ -	$ 0.30	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 1- Z2)	0.00	0.12	sq. ft.	0.00	0.00	$ 1.50	$ -	$ 0.29	$ 0.10	$ -	30	0	$ -	$ 0.30	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 2- Z1 & Z3)	0.00	0.24	sq. ft.	0.00	0.00	$ 1.70	$ -	$ 0.59	$ 0.21	$ -	30	0	$ -	$ 0.40	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 2- Z2)	0.00	0.14	sq. ft.	0.00	0.00	$ 1.70	$ -	$ 0.33	$ 0.12	$ -	30	0	$ -	$ 0.40	$ -	$ -	$ -	-	$ -	$ -	-
Domestic Hot Water Tanks	Condensing Tank	44.00	0.79	kBtu/hr	11,389.58	8997.77	$ 6.06	$ 69,020.85	$ 1.36	$ 0.47	$ 48,155	15	98,862	$ 22,767.74	$ 2.50	$ 28,474	$ 0.288	$ 0.518	0.916	$ 0.487	$ 0.717	0.589
Boiler Vent Damper	Boiler Vent Damper	0.00	270.00	kBtu/hr	0.00	0.00	$ 1.50	$ -	$ 412.56	$ 139.91	$ -	12	0	$ -	$ 1,000.00	$ -	$ -	$ -	-	$ -	$ -	-
Gas Fryer	Energy Star	7.00	548.00	each	7.00	3836.00	$ 1,400.00	$ 9,800.00	$ 671.60	$ 219.67	$ 3,561	8	25,646	$ 9,706.52	$ 600.00	$ 4,200	$ 0.164	$ 0.542	0.881	$ 0.139	$ 0.517	0.859
Clothes Washer	Commercial Gas Washer	1.00	90.00	each	12.00	1080.00	$ 200.00	$ 2,400.00	$ 124.47	$ 41.57	$ 408	10	8,686	$ 2,732.81	$ 180.00	$ 2,160	$ 0.249	$ 0.563	0.858	$ 0.047	$ 0.362	1.216
Steam Trap (New Tariff)	Steam Traps Line Size <2"	2.00	136.90	kBtu/hr	75.00	10267.50	$ 315.00	$ 23,625.00	$ 156.32	$ 50.43	$ 8,118	7	61,241	$ 25,980.64	$ 125.00	$ 9,375	$ 0.153	$ 0.577	0.830	$ 0.133	$ 0.557	0.800
Boiler	High Efficiency Condensing Boiler	54.00	1.50	kBtu/hr	58,938.00	88407.00	$ 8.89	$ 523,958.82	$ 3.00	$ 1.05	$ 284,776	20	1,183,595	$ 223,702.95	$ 4.00	$ 235,752	$ 0.199	$ 0.388	1.165	$ 0.241	$ 0.430	0.935
DHW Tankless Water Heater	Energy Star	14.00	35.00	gpm	109.62	3836.70	$ 137.90	$ 15,116.60	$ 66.44	$ 23.17	$ 5,294	18	47,906	$ 9,708.29	$ 60.00	$ 6,577	$ 0.137	$ 0.340	1.355	$ 0.111	$ 0.313	1.307
Gas Convection Oven	Energy Star	0.00	261.00	each	0.00	0.00	$ 900.00	$ -	$ 398.81	$ 135.25	$ -	12	0	$ -	$ 400.00	$ -	$ -	$ -	-	$ -	$ -	-
Conn 6 Pan Gas Steamer	Energy Star or CEE/FSTC Qualified	0.00	912.00	each	0.00	0.00	$ 3,200.00	$ -	$ 1,393.54	$ 472.59	$ -	12	0	$ -	$ 1,200.00	$ -	$ -	$ -	-	$ -	$ -	-
Conn 6 Pan Gas Steamer	Energy Star	0.00	448.00	each	0.00	0.00	$ 1,800.00	$ -	$ 684.55	$ 232.15	$ -	12	0	$ -	$ 600.00	$ -	$ -	$ -	-	$ -	$ -	-
Double Rack Oven	Double Rack Oven	0.00	1,806.00	each	0.00	0.00	$ 6,200.00	$ -	$ 2,759.58	$ 935.86	$ -	12	0	$ -	$ 2,000.00	$ -	$ -	$ -	-	$ -	$ -	-
Gas Griddle	Energy Star	0.00	158.00	each	0.00	0.00	$ 1,048.00	$ -	$ 241.43	$ 81.87	$ -	12	0	$ -	$ 200.00	$ -	$ -	$ -	-	$ -	$ -	-
Gas Fryer (New Tariff)	Energy Star	23.00	272.00	each	57.00	15504.00	$ 1,049.00	$ 59,793.00	$ 415.62	$ 140.95	$ 28,069	12	144,081	$ 39,230.95	$ 600.00	$ 34,200	$ 0.237	$ 0.510	0.933	$ 0.195	$ 0.467	0.925
Attic Insulation Tier 1 (New Tariff)	Attic Insulation Tier 1	4.00	0.31	sq. ft.	33,465.00	10374.15	$ 1.35	$ 45,177.75	$ 0.75	$ 0.27	$ 11,177	30	175,745	$ 26,250.50	$ 0.50	$ 16,733	$ 0.095	$ 0.245	1.787	$ 0.064	$ 0.213	1.747
Wall Insulation Tier 2 (New Tariff)	Wall Insulation Tier 2	2.00	0.19	sq. ft.	7,260.00	1379.40	$ 1.70	$ 12,342.00	$ 0.46	$ 0.16	$ 7,821	30	23,368	$ 3,490.40	$ 0.56	$ 4,066	$ 0.174	$ 0.323	1.352	$ 0.335	$ 0.484	0.768
Motion Control Faucet	Motion Control Faucet	1.00	136.00	each	1.00	136.00	$ 315.00	$ 315.00	$ 131.10	$ 40.72	$ 143	5	603	$ 344.13	$ 105.00	$ 105	$ 0.174	$ 0.745	0.652	$ 0.238	$ 0.809	0.559
Gas Convection Oven	Energy Star	6.00	213.00	each	8.00	1704.00	$ 900.00	$ 7,200.00	$ 325.47	$ 110.38	$ 3,713	12	15,836	$ 4,311.76	$ 450.00	$ 3,600	$ 0.227	$ 0.500	0.952	$ 0.234	$ 0.507	0.853
Radiant Heating (New Tariff)	Direct Fired Radiant Heating	8.00	4.330	kBtu/hr	310.00	1342.30	$ 21.00	$ 6,510.00	$ 8.22	$ 2.87	$ 3,073	18	16,760	$ 3,396.52	$ 6.95	$ 2,155	$ 0.129	$ 0.331	1.391	$ 0.183	$ 0.386	1.061
ESK A	Energy Saver Kit (LF PRSV and Aerator)	31.00	109.000	each	31.00	3379.00	$ 119.00	$ 3,689.00	$ 105.07	$ 32.63	$ -	5	14,971	$ 8,550.14	$ 119.00	$ 3,689	$ 0.246	$ 0.818	0.594	$ -	$ 0.571	-
ESK B	Energy Saver Kit (LF Showerheads)	75.00	14.000	each	75.00	1050.00	$ 44.00	$ 3,300.00	$ 19.36	$ 6.47	$ 1,363	10	8,445	$ 2,656.89	$ 44.00	$ 3,300	$ 0.391	$ 0.705	0.686	$ 0.161	$ 0.476	0.924
								$ -														
								$ -														
Custom Measures								$ -														
QSC Beef 2 (Car's Jr.) Standard and Custo	COMCUSTBBS	1.00	1,892	/unit	1	1,892	$ 3,578.00	$ 3,578.00	$ 2,890.99	$ 980.42	$ -	12	17,583	$ 1,507.82	$ 1,789.00	$ 1,789	$ 0.102	$ 0.188	2.536	$ -	$ 0.086	5.040
Selah Jr. High Standard & Custom	COMCUSTBOI	1.00	1,933	/unit	1	1,933	$ 8,625.00	$ 8,625.00	$ 3,871.82	$ 1,357.86	$ 3,395	20	25,879	$ 1,540.50	$ 2,588.00	$ 2,588	$ 0.100	$ 0.160	2.834	$ 0.131	$ 0.191	2.107
State of Washington Dept. of Enterprise Se	COMCUSTBOI	1.00	15,706	/unit	1	15,706	$ 30,000.00	$ 30,000.00	$ 21,720.64	$ 7,254.93	$ 1,024	10	126,318	$ 12,516.82	$ 13,982.00	$ 13,982	$ 0.111	$ 0.210	2.305	$ 0.008	$ 0.107	4.101
Lincoln Elementary Custom and Standard I	COMCUSTDDC	1.00	1,442	/unit	1	1,442	$ 31,300.00	$ 31,300.00	$ 2,486.78	$ 857.17	$ 27,956	15	15,844	$ 1,149.20	$ 1,818.00	$ 1,818	$ 0.115	$ 0.187	2.536	$ 1.764	$ 1.837	0.230
Stanwood High School Control Upgrade, E	COMCUSTDDC	1.00	7,504	/unit	1	7,504	$ 18,708.00	$ 18,708.00	$ 12,940.92	$ 4,460.62	$ 1,306	15	82,449	$ 5,980.28	$ 9,459.00	$ 9,459	$ 0.115	$ 0.187	2.537	$ 0.016	$ 0.088	4.778
Toyota Center DCV Control	COMCUSTDDC	1.00	4,219	/unit	1	4,219	$ 4,500.00	$ 4,500.00	$ 5,834.67	$ 1,948.84	$ -	10	33,932	$ 3,362.31	$ 2,250.00	$ 2,250	$ 0.066	$ 0.165	2.924	$ -	$ 0.099	4.436
Goodwill Industries Silverdale Custom Cor	COMCUSTDDC	1.00	1,045	/unit	1	1,045	$ 9,150.00	$ 9,150.00	$ 1,802.14	$ 621.18	$ 6,727	15	11,482	$ 832.81	$ 1,317.00	$ 1,317	$ 0.115	$ 0.187	2.537	$ 0.586	$ 0.658	0.641
Birthright of Walla Walla Custom Insulatio	COMCUSTINS	1.00	119	/unit	1	119	$ 1,613.00	$ 1,613.00	$ 287.40	$ 102.62	$ 1,223	30	2,016	$ 94.84	$ 241.00	$ 241	$ 0.120	$ 0.167	2.623	$ 0.607	$ 0.654	0.569
Shields Bag and Printing Custom 2014+	COMCUSTOTH	1.00	229,000.000	/unit	1	229,000	$ 291,500.00	$ 291,500.00	$ 394,918.77	$ 136,124.95	$ -	15	2,516,110	$ 182,500.46	$ 145,750.00	$ 145,750	$ 0.058	$ 0.130	3.641	$ -	$ 0.073	5.821
Cowiche Canyon Combi Oven	COMCUSTOTH	1.00	712	/unit	1	712	$ 293,000.00	$ 293,000.00	$ 1,087.94	$ 368.95	$ 291,543	12	6,617	$ 567.43	$ 739.00	$ 739	$ 0.112	$ 0.197	2.408	$ 44.061	$ 44.147	0.010
State of Washington Dept. of Enterprise Se	COMCUSTOTH	1.00	6613	/unit	1	6,613	$ 5,660.00	$ 5,660.00	$ 6,374.63	$ 1,979.79	$ -	5	29,300	$ 5,270.20	$ 3,059.00	$ 3,059	$ 0.104	$ 0.284	1.709	$ -	$ 0.180	2.512
Portco Packaging Custom	COMCUSTOTH	1.00	174600	/unit	1	174,600	$ 19,415.00	$ 19,415.00	$ 301,104.00	$ 103,787.85	$ -	15	1,918,397	$ 139,146.64	$ 146,500.00	$ 146,500	$ 0.076	$ 0.149	3.190	$ -	$ 0.073	5.821
Blazin Wings, Inc. Custom Dishwashers	COMCUSTOTH	1.00	244	/unit	1	244	$ 3,226.00	$ 3,226.00	$ 337.44	$ 112.71	$ 2,776	10	1,962	$ 194.45	$ 217.00	$ 217	$ 0.111	$ 0.210	2.306	$ 1.415	$ 1.514	0.290
Blazin Wings, Inc. Custom Dishwashers	COMCUSTOTH	1.00	422	/unit	1	422	$ 1,300.00	$ 1,300.00	$ 644.82	$ 218.68	$ 437	12	3,922	$ 336.31	$ 438.00	$ 438	$ 0.112	$ 0.197	2.408	$ 0.111	$ 0.197	2.193
Goodwill Industries Bremerton Custom	COMCUSTOTH	1.00	280	/unit	1	280	$ 3,600.00	$ 3,600.00	$ 482.87	$ 166.44	$ 2,951	15	3,076	$ 223.14	$ 353.00	$ 353	$ 0.115	$ 0.187	2.536	$ 0.959	$ 1.032	0.409
Hoquiam High School Retrocommissioning	COMCUSTRET	1.00	28046	/unit	1	28,046	$ 54,500.00	$ 54,500.00	$ 27,035.07	$ 8,396.38	$ 19,069	5	124,262	$ 22,351.13	$ 12,971.00	$ 12,971	$ 0.104	$ 0.284	1.709	$ 0.153	$ 0.333	1.356
State of Washington Dept. of Enterprise Se	COMCUSTSTM	1.00	11359	/unit	1	11,359	$ 48,374.00	$ 48,374.00	$ 22,752.19	$ 7,979.25	$ 17,643	20	152,074	$ 9,052.50	$ 17,765.00	$ 17,765	$ 0.117	$ 0.176	2.563	$ 0.116	$ 0.176	2.289
TOTAL PROGRAM						**637,930**	**845,774**	**1,619,269**	**814,515**	**279,395**	**$ 786,852**	**15.07**	**6,915,701**	**$ 773,254**		**$719,713**	**$ 0.104**	**$ 0.216**	**2.230**	**$ 0.114**	**$ 0.226**	**1.897**
				Custom Only		**485,136**					**$ 376,049**	**14.69**										

IRP Discount Rate 8.76%
Inflation Rate 2.00%

Long Term Discount Rate 4.17%

$ 832,417.77

Total 2015 Program Admin
$773,253.64

custom admin
$386,626.82

prescriptive admin
$386,626.82

CASCADE NATURAL GAS CORPORATION
2015 LOW INCOME Program Participant Cost Effectiveness Estimates

MEASURE	PARTICIPANTS	TOTAL ANNUAL THERM SAVINGS	MEASURE INSTALLED COST	NON-ENERGY BENEFITS (10% of cost)	MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	PROGRAM REBATE	UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
Attic/Ceiling Insulation	16	2630	$ 42,626.00	$ 4,263	30	44,553	$ 1,599.18	$ 21,276.30	$ 0.478	$ 0.513	0.85		$ 0.861	$ 0.897	0.415
Floor Insulation	14	2108	$ 33,135.82	$ 3,314	30	35,715	$ 1,281.95	$ 17,055.66	$ 0.478	$ 0.513	0.85		$ 0.835	$ 0.871	0.427
Wall Insulation	11	4232	$ 37,580.30	$ 3,758	30	71,697	$ 2,573.51	$ 34,239.15	$ 0.478	$ 0.513	0.85		$ 0.472	$ 0.508	0.733
Duct Insulation	6	1351	$ 9,844.00	$ 984	20	18,087	$ 821.50	$ 8,308.65	$ 0.459	$ 0.505	0.90		$ 0.490	$ 0.535	0.751
Air Infiltration Reduction	17	1403	$ 15,658.18	$ 1,566	20	18,783	$ 853.12	$ 8,628.45	$ 0.459	$ 0.505	0.90		$ 0.750	$ 0.796	0.505
TOTAL PROGRAM	**64**	**11,724**	**$ 138,844.30**	**$ 13,884**	**27.65**	**188,836**	**$ 7,129**	**$ 89,508.21**	**$ 0.474**	**$ 0.512**	**0.867**		**$ 0.662**	**$ 0.699**	**0.540**

IRP Discount Rate	8.76%
Inflation Rate	2.00%
Long Term Discount Rate	4.17%

CASCADE NATURAL GAS CORPORATION

Updated 2014 Program Participant Cost Effectiveness Estimate Summary excluding Nexant Study Expenses

PROGRAM	UNITS	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
RESIDENTIAL (includes units of insulation)	1,998	176,439	$ 1,765,803	$ 1,001,538	23.78	2,489,627	$ 339,222	$ 511,364	$ 0.21	$ 0.342	1.365		$ 0.307	$ 0.443	0.915
COMMERCIAL	212	465,176	$ 1,445,957	$ 834,925	15.43	5,098,851	$ 768,872	$ 544,569	$ 0.11	$ 0.258	1.848		$ 0.120	$ 0.271	1.563
TOTAL	**2,210**	**641,615**	**$ 3,211,760**	**$ 1,836,463**	**17.73**	**7,588,478**	**$ 1,108,094**	**$ 1,070,612**	**$ 0.141**	**$ 0.287**	**1.646**		**$ 0.181**	**$ 0.327**	**1.284**

PROGRAM	MEASURES	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
LOW INCOME	**66**	**7,338**	**$ 126,484**	**$ 12,648**	**26.50**	**115,172**	**$ 15,000**	**$ 54,374**	**$ 0.472**	**$ 0.602**	**0.746**		**$ 0.988**	**$ 1.119**	**0.342**

IRP Discount Rate	8.76%
Inflation rate	2.00%
Long Term Discount Rate	4.17%
EM&V/Nexant Potential Assessment Study	$14,679.07

The Company has devised an intuitive and focused approach to measuring non-energy benefits for our Commercial and Residential program measures. Please note the Low Income program uses a blanket 10 percent adder for yearly achievements.

Updated 2014 Program Participant Cost Effectiveness Estimate Summary including Nexant Study Expenses

PROGRAM	UNITS	TOTAL ANNUAL THERM SAVINGS	TOTAL INCREMENTAL COSTS	NON-ENERGY BENEFITS	WEIGHTED MEASURE LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	TOTAL PROGRAM REBATE	PROGRAM UTILITY COST	UC W/DELIVERY & ADMIN	BENEFIT COST RATIO		PROGRAM TOTAL RESOURCE COST	TRC W/DELIVERY & ADMIN	BENEFIT COST RATIO
RESIDENTIAL (includes units of insulation)	563,810	167,234	$ 1,720,497	$ 757,569	23.92	2,365,307	$ 339,222	$ 489,060	$ 0.21	$ 0.349	1.335		$ 0.407	$ 0.549	0.737
COMMERCIAL	212	465,176	$ 1,445,957	$ 834,925	15.43	5,098,851	$ 768,872	$ 544,569	$ 0.11	$ 0.251	1.895		$ 0.120	$ 0.264	1.601
TOTAL	**564,022**	**632,410**	**$ 3,166,454**	**$ 1,592,493**	**17.68**	**7,464,158**	**$ 1,122,773**	**$ 1,048,308**	**$ 0.140**	**$ 0.286**	**1.656**		**$ 0.211**	**$ 0.356**	**1.181**

Program Year:
2014

CASCADE NATURAL GAS CORPORATION
RESIDENTIAL Program Participant Cost Effectiveness

			Updated		*Difference*	*Original*													
MEASURE	**ZONE**	**EFFICIENCY RATING**	**PARTICIPANTS**	**MEASURES INSTALLED**	**MEASURES INSTALLED**	**PARTICIPANTS**	**MEASURES INSTALLED**	**ANNUAL THERM SAVINGS**	**TOTAL ANNUAL THERM SAVINGS**	**MEASURE INCREMENTAL COST**	**SOCIETAL NEBS**	**PARTICIPAN NEBS**	**TOTAL INCREMENTAL COST**	**TOTAL NET INCREMENTAL COST WITH NEBS**	**MEASURE LIFE**	**TRC DISCOUNTED THERM SAVINGS**	**UCT DISCOUNTED THERM SAVINGS**	**PROGRAM DELIVERY & ADMIN**	**PROGRAM REBATE**	**TOTAL REBATES COST**
Energy * Certified Home (BOP 1) **OLD**	1	HERS 75	0	0	0	0	0	206	0	$ 1,142.00	$ 502.66	$ 534.07	$ -	$ -	30	0	0	$ -	$ 550.00	$ -
Energy * Certified Home (BOP 1) **OLD**	2	HERS 75	0	0	0	0	0	200	0	$ 1,142.00	$ 488.02	$ 529.25	$ -	$ -	30	0	0	$ -	$ 550.00	$ -
Energy * Certified Home (BOP 1) **OLD**	3	HERS 75	22	22	1	21	21	207	4,554	$ 1,142.00	$ 505.10	$ 534.88	$ 25,124.00	$ 2,244.40	30	77,148	77,148	$ 8,755.54	$ 550.00	$ 12,100.00
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	1	HERS 75	0	0	0	0	0	206	0	$ 1,142.00	$ 502.66	$ 534.07	$ -	$ -	30	0	0	$ -	$ 600.00	$ -
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	2	HERS 75	0	0	0	0	0	200	0	$ 1,142.00	$ 488.02	$ 529.25	$ -	$ -	30	0	0	$ -	$ 600.00	$ -
Energy * Certified Home (BOP 1) *(Incentive Increase effective 09/02/2014)*	3	HERS 75	18	18	1	17	17	207	3,726	$ 1,142.00	$ 505.10	$ 534.88	$ 20,556.00	$ 1,836.33	30	63,121	63,121	$ 7,163.62	$ 600.00	$ 10,800.00
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	1	Federal Tax Credit Eligible	0	0	0	0	0	235	0	$ 3,700.00	$ 573.43	$ 813.21	$ -	$ -	30	0	0	$ -	$ 750.00	$ -
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	2	Federal Tax Credit Eligible	0	0	0	0	0	221	0	$ 3,700.00	$ 539.27	$ 801.94	$ -	$ -	30	0	0	$ -	$ 750.00	$ -
Energy * Plus Certified Home **(Discontinued 09/02/2014)**	3	Federal Tax Credit Eligible	0	0	0	0	0	296	0	$ 3,700.00	$ 722.27	$ 862.29	$ -	$ -	30	0	0	$ -	$ 750.00	$ -
Built Green Certified Home	1	Built Green Certified	0	0	0	0	0	209	0	$ 1,142.00	$ 509.98	$ 536.49	$ -	$ -	30	0	0	$ -	$ 600.00	$ -
Built Green Certified Home	2	Built Green Certified	0	0	0	0	0	203	0	$ 1,142.00	$ 495.34	$ 531.66	$ -	$ -	30	0	0	$ -	$ 600.00	$ -
Built Green Certified Home	3	Built Green Certified	0	0	0	0	0	210	0	$ 1,142.00	$ 512.42	$ 537.29	$ -	$ -	30	0	0	$ -	$ 600.00	$ -
95% AFUE Gas Furn Upgrade E* **OLD**	1	95% AFUE Rating	0	0	0	0	0	111	0	$ 1,024.00	$ 213.50	$ 355.53	$ -	$ -	18	0	0	$ -	$ 200.00	$ -
95% AFUE Gas Furn Upgrade E* **OLD**	2	95% AFUE Rating	0	0	0	0	0	110	0	$ 1,024.00	$ 211.57	$ 354.93	$ -	$ -	18	0	0	$ -	$ 200.00	$ -
95% AFUE Gas Furn Upgrade E* **OLD**	3	95% AFUE Rating	22	22	1	21	21	111	2,442	$ 1,024.00	$ 213.50	$ 355.53	$ 22,528.00	$ 10,009.51	18	30,491	30,491	$ 4,695.00	$ 200.00	$ 4,400.00
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	1	95% AFUE Rating	1	1	0	1	1	111	111	$ 1,024.00	$ 213.50	$ 355.53	$ 1,024.00	$ 454.98	18	1,386	1,386	$ 213.41	$ 250.00	$ 250.00
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	2	95% AFUE Rating	0	0	0	0	0	110	0	$ 1,024.00	$ 211.57	$ 354.93	$ -	$ -	18	0	0	$ -	$ 250.00	$ -
95% AFUE Gas Furn Upgrade E* *(Incentive Increase effective 09/02/2014)*	3	95% AFUE Rating	18	18	1	17	17	111	1,998	$ 1,024.00	$ 213.50	$ 355.53	$ 18,432.00	$ 8,189.60	18	24,947	24,947	$ 3,841.36	$ 250.00	$ 4,500.00
90% Furnace & PTCS Duct Sealing **(Discontinued 09/02/2014)**	1	90% AFUE Rating	3	3	0	3	3	122	366	$ 1,250.00	$ 247.42	$ 202.58	$ 3,750.00	$ 2,400.00	20	4,900	4,900	$ 703.67	$ 400.00	$ 1,200.00
90% Furnace & PTCS Duct Sealing **(Discontinued 09/02/2014)**	2	90% AFUE Rating	2	2	0	2	2	112	224	$ 1,250.00	$ 227.14	$ 196.22	$ 2,500.00	$ 1,653.28	20	2,999	2,999	$ 430.66	$ 400.00	$ 800.00
90% Furnace & PTCS Duct Sealing **(Discontinued 09/02/2014)**	3	90% AFUE Rating	4	4	0	4	4	143	572	$ 1,250.00	$ 290.01	$ 215.94	$ 5,000.00	$ 2,976.23	20	7,658	7,658	$ 1,099.73	$ 400.00	$ 1,600.00
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	1	90% AFUE Rating	0	0	0	0	0	65	0	$ 500.00	$ 125.02	$ 88.55	$ -	$ -	18	0	0	$ -	$ 150.00	$ -
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	2	90% AFUE Rating	0	0	0	0	0	61	0	$ 500.00	$ 117.33	$ 86.18	$ -	$ -	18	0	0	$ -	$ 150.00	$ -
90% AFUE New Gas Furnace (New construction) **(Discontinued 09/02/2014)**	3	90% AFUE Rating	0	0	0	0	0	81	0	$ 500.00	$ 155.79	$ 98.04	$ -	$ -	18	0	0	$ -	$ 150.00	$ -
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	1	90% AFUE Rating	7	7	2	5	5	81	567	$ 800.00	$ 155.79	$ 128.04	$ 5,600.00	$ 3,613.15	18	7,080	7,080	$ 1,090.12	$ 150.00	$ 1,050.00
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	2	90% AFUE Rating	3	3	0	3	3	75	225	$ 800.00	$ 144.25	$ 124.48	$ 2,400.00	$ 1,593.79	18	2,809	2,809	$ 432.59	$ 150.00	$ 450.00
90% AFUE New Gas Furnace (Existing) **(Discontinued 09/02/2014)**	3	90% AFUE Rating	6	6	0	6	6	99	594	$ 800.00	$ 190.42	$ 138.72	$ 4,800.00	$ 2,825.21	18	7,417	7,417	$ 1,142.03	$ 150.00	$ 900.00
95% AFUE New Gas Furnace (New & Existing)	1	95% AFUE Rating	533	534	28	505	506	111	59,274	$ 1,024.00	$ 213.50	$ 355.53	$ 546,816.00	$ 242,958.02	18	740,105	740,105	$ 113,960.40	$ 250.00	$ 133,500.00
95% AFUE New Gas Furnace (New & Existing)	2	95% AFUE Rating	127	127	11	116	116	110	13,970	$ 1,024.00	$ 211.57	$ 354.93	$ 130,048.00	$ 58,101.74	18	174,432	174,432	$ 26,858.77	$ 250.00	$ 31,750.00
95% AFUE New Gas Furnace (New & Existing)	3	95% AFUE Rating	273	277	13	260	264	111	30,747	$ 1,024.00	$ 213.50	$ 355.53	$ 283,648.00	$ 126,028.78	18	383,912	383,912	$ 59,114.29	$ 250.00	$ 69,250.00
80% AFUE Hearth **OLD**	1	80% AFUE Rating	0	0	0	0	0	75	0	$ 600.00	$ 152.10	$ 308.52	$ -	$ -	20	0	0	$ -	$ 300.00	$ -
80% AFUE Hearth **OLD**	2	80% AFUE Rating	0	0	0	0	0	75	0	$ 600.00	$ 152.10	$ 308.52	$ -	$ -	20	0	0	$ -	$ 300.00	$ -
80% AFUE Hearth **OLD**	3	80% AFUE Rating	0	0	0	0	0	75	0	$ 600.00	$ 152.10	$ 308.52	$ -	$ -	20	0	0	$ -	$ 300.00	$ -
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	1	80% AFUE Rating	1	1	0	1	1	75	75	$ 600.00	$ 152.10	$ 308.52	$ 600.00	$ 139.38	20	1,004	1,004	$ 144.20	$ 250.00	$ 250.00
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	2	80% AFUE Rating	0	0	0	0	0	75	0	$ 600.00	$ 152.10	$ 308.52	$ -	$ -	20	0	0	$ -	$ 250.00	$ -
80% AFUE Hearth *(Incentive decreased effective 09/02/2014)*	3	80% AFUE Rating	1	1	1	0	0	75	75	$ 600.00	$ 152.10	$ 308.52	$ 600.00	$ 139.38	20	1,004	1,004	$ 144.20	$ 250.00	$ 250.00
70% FE Hearth **OLD**	1	70 % FE Rating	8	8	0	8	8	56	448	$ 425.00	$ 113.57	$ 278.93	$ 3,400.00	$ 259.99	20	5,998	5,998	$ 861.33	$ 200.00	$ 1,600.00
70% FE Hearth **OLD**	2	70 % FE Rating	10	10	0	9	10	56	560	$ 425.00	$ 113.57	$ 278.93	$ 4,250.00	$ 324.99	20	7,497	7,497	$ 1,076.66	$ 200.00	$ 2,000.00
70% FE Hearth **OLD**	3	70 % FE Rating	3	3	0	3	3	56	168	$ 425.00	$ 113.57	$ 278.93	$ 1,275.00	$ 97.50	20	2,249	2,249	$ 323.00	$ 200.00	$ 600.00
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	1	70 % FE Rating	10	10	1	9	9	56	560	$ 425.00	$ 113.57	$ 278.93	$ 4,250.00	$ 324.99	20	7,497	7,497	$ 1,076.66	$ 150.00	$ 1,500.00
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	2	70 % FE Rating	3	3	0	3	3	56	168	$ 425.00	$ 113.57	$ 278.93	$ 1,275.00	$ 97.50	20	2,249	2,249	$ 323.00	$ 150.00	$ 450.00
70% FE Hearth *(Incentive decreased effective 09/02/2014)*	3	70 % FE Rating	3	3	0	3	3	56	168	$ 425.00	$ 113.57	$ 278.93	$ 1,275.00	$ 97.50	20	2,249	2,249	$ 323.00	$ 150.00	$ 450.00
High Efficiency Entryway Door	1	Door U-Factor <0.21 Energy Star Door	5	5	5	0	0	13	65	$ 200.00	$ 29.32	$ 259.65	$ 1,000.00	$ (444.84)	25	997	997	$ 124.97	$ 50.00	$ 250.00
High Efficiency Entryway Door	2	Door U-Factor <0.21 Energy Star Door	0	0	0	0	0	13	0	$ 200.00	$ 29.32	$ 259.65	$ -	$ -	25	0	0	$ -	$ 50.00	$ -
High Efficiency Entryway Door	3	Door U-Factor <0.21 Energy Star Door	3	3	-3	5	6	13	39	$ 200.00	$ 29.32	$ 259.65	$ 600.00	$ (266.90)	25	598	598	$ 74.98	$ 50.00	$ 150.00
Residential Air Sealing	1	Comprehensive shell air sealing / infiltration control: to achieve CFM of 1250	0	0	0	0	0	75	0	$ 750.00	$ 121.59	$ 258.42	$ -	$ -	13	0	0	$ -	$ 100.00	$ -
Residential Air Sealing	2	Comprehensive shell air sealing / infiltration control: to achieve CFM of 1250	0	0	0	0	0	71	0	$ 750.00	$ 115.11	$ 256.54	$ -	$ -	13	0	0	$ -	$ 100.00	$ -
Residential Air Sealing	3	Comprehensive shell air sealing / infiltration control: to achieve CFM of 1250	0	0	0	0	0	84	0	$ 750.00	$ 136.18	$ 262.64	$ -	$ -	13	0	0	$ -	$ 100.00	$ -
Ceiling Insulation	1	Equal to or Greater than R-38	111	111369	0	111	111369	0.062	6,905	$ 0.67	$ 0.17	$ 302.62	$ 74,617.23	$ 41,007.01	45	139,246	139,246	$ 13,275.34	$ 0.30	$ 33,410.70
Ceiling Insulation	2	Equal to or Greater than R-38	33	38088	0	33	38088	0.057	2,171	$ 0.67	$ 0.16	$ 302.62	$ 25,518.96	$ 15,527.36	45	43,781	43,781	$ 4,174.00	$ 0.30	$ 11,426.40
Ceiling Insulation	3	Equal to or Greater than R-38	80	104728	2302	79	102426	0.067	7,017	$ 0.67	$ 0.19	$ 302.63	$ 70,167.76	$ 45,942.67	45	141502	141,502	13490.47823	$ 0.30	$ 31,418.40
Floor Insulation **OLD**	1	Equal to or Greater than R-30 or to fill cavity	94	102770	1692	94	101078	0.056	5,755	$ 1.08	$ 0.16	$ 0.16	$ 110,991.60	$ 110,961.59	45	116,059	116,059	$ 11,064.81	$ 0.45	$ 46,246.50
Floor Insulation **OLD**	2	Equal to or Greater than R-30 or to fill cavity	16	16058	0	16	16058	0.054	867	$ 1.08	$ 0.15	$ 0.16	$ 17,342.64	$ 17,337.65	45	17,487	17,487	$ 1,667.15	$ 0.45	$ 7,226.10
Floor Insulation **OLD**	3	Equal to or Greater than R-30 or to fill cavity	22	24475	1176	22	23299	0.059	1,444	$ 1.08	$ 0.17	$ 0.16	$ 26,433.00	$ 26,425.73	45	29,121	29,121	$ 2,776.29	$ 0.45	$ 11,013.75
Floor Insulation *(Incentive decreased effective 09/02/2014)*	1	Equal to or Greater than R-30 or to fill cavity	60	68959	4012	58	64947	0.056	3,862	$ 1.08	$ 0.16	$ 0.16	$ 74,475.72	$ 74,456.57	45	77,876	77,876	$ 7,424.53	$ 0.30	$ 20,687.70
Floor Insulation *(Incentive decreased effective 09/02/2014)*	2	Equal to or Greater than R-30 or to fill cavity	6	7850	0	6	7850	0.054	424	$ 1.08	$ 0.15	$ 0.16	$ 8,478.00	$ 8,476.13	45	8,548	8,548	$ 814.99	$ 0.30	$ 2,355.00
Floor Insulation *(Incentive decreased effective 09/02/2014)*	3	Equal to or Greater than R-30 or to fill cavity	18	21290	586	16	20704	0.059	1,256	$ 1.08	$ 0.17	$ 0.16	$ 22,993.20	$ 22,987.25	45	25,331	25,331	$ 2,415.00	$ 0.30	$ 6,387.00
Wall Insulation **OLD**	1	Equal to or Greater than R-11 to fill cavity	39	30179	0	39	30179	0.071	2,143	$ 1.18	$ 0.20	$ 0.19	$ 35,611.22	$ 35,596.17	45	43,210	43,210	$ 4,119.58	$ 0.40	$ 12,071.60
Wall Insulation **OLD**	2	Equal to or Greater than R-11 to fill cavity	3	1595	0	3	1595	0.065	104	$ 1.18	$ 0.18	$ 0.18	$ 1,882.10	$ 1,881.01	45	2,091	2,091	$ 199.33	$ 0.40	$ 638.00
Wall Insulation **OLD**	3	Equal to or Greater than R-11 to fill cavity	18	18090	884	17	17206	0.076	1,375	$ 1.18	$ 0.21	$ 0.19	$ 21,346.20	$ 21,338.92	45	27,725	27,725	$ 2,643.27	$ 0.40	$ 7,236.00
Wall Insulation *(Incentive decreased effective 09/02/2014)*	1	Equal to or Greater than R-11 to fill cavity	21	17492	0	21	17492	0.071	1,242	$ 1.18	$ 0.20	$ 0.19	$ 20,640.56	$ 20,632.46	45	25,045	25,045	$ 2,387.74	$ 0.35	$ 6,122.20
Wall Insulation *(Incentive decreased effective 09/02/2014)*	2	Equal to or Greater than R-11 to fill cavity	2	4225	0	2	4225	0.065	275	$ 1.18	$ 0.18	$ 0.18	$ 4,985.50	$ 4,984.77	45	5,538	5,538	$ 527.99	$ 0.35	$ 1,478.75
Wall Insulation *(Incentive decreased effective 09/02/2014)*	3	Equal to or Greater than R-11 to fill cavity	10	5890	0	10	5890	0.076	448	$ 1.18	$ 0.21	$ 0.19	$ 6,950.20	$ 6,946.15	45	9,027	9,027	$ 860.63	$ 0.35	$ 2,061.50
High Efficiency Combination Radiant Heat **OLD**	1	90% Eff Condensing Tankless Combo w/ WH	5	5	0	5	5	475	2,375	$ 2,500.00	$ 986.67	$ 768.82	$ 12,500.00	$ 3,722.58	21	32,804	32,804	$ 4,566.18	$ 1,000.00	$ 5,000.00
High Efficiency Combination Radiant Heat **OLD**	2	90% Eff Condensing Tankless Combo w/ WH	2	2	0	2	2	468	936	$ 2,500.00	$ 972.13	$ 764.22	$ 5,000.00	$ 1,527.30	21	12,928	12,928	$ 1,799.56	$ 1,000.00	$ 2,000.00
High Efficiency Combination Radiant Heat **OLD**	3	90% Eff Condensing Tankless Combo w/ WH	0	0	0	0	0	476	0	$ 2,500.00	$ 988.75	$ 769.47	$ -	$ -	21	0	0	$ -	$ 1,000.00	$ -
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014)*	1	90% Eff Condensing Tankless Combo w/ WH	1	1	0	1	1	475	475	$ 2,500.00	$ 986.67	$ 768.82	$ 2,500.00	$ 744.52	21	6,561	6,561	$ 913.24	$ 825.00	$ 825.00
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014)*	2	90% Eff Condensing Tankless Combo w/ WH	6	6	4	2	2	468	2,808	$ 2,500.00	$ 972.13	$ 764.22	$ 15,000.00	$ 4,581.89	21	38,784	38,784	$ 5,398.67	$ 825.00	$ 4,950.00
High Efficiency Combination Radiant Heat *(Incentive decreased effective 09/02/2014)*	3	90% Eff Condensing Tankless Combo w/ WH	0	0	0	0	0	476	0	$ 2,500.00	$ 988.75	$ 769.47	$ -	$ -	21	0	0	$ -	$ 825.00	$ -
.64 Water Heater **(Discontinued 09/02/2014)**	1	0.64 Energy Factor or Greater	6	6	0	6	6	26	156	$ 185.00	$ 40.38	$ 29.98	$ 1,110.00	$ 687.87	12	1,450	1,450	$ 299.93	$ 40.00	$ 240.00
.64 Water Heater **(Discontinued 09/02/2014)**	2	0.64 Energy Factor or Greater	6	6	1	5	5	26	156	$ 185.00	$ 40.38	$ 29.98	$ 1,110.00	$ 687.87	12	1,450	1,450	$ 299.93	$ 40.00	$ 240.00
.64 Water Heater **(Discontinued 09/02/2014)**	3	0.64 Energy Factor or Greater	4	4	0	4	4	26	104	$ 185.00	$ 40.38	$ 29.98	$ 740.00	$ 458.58	12	966	966	$ 199.95	$ 40.00	$ 160.00
.67 Water Heater	1	0.67 Energy Factor or Greater	3	3	0	3	3	33	99	$ 139.00	$ 59.73	$ 31.94	$ 417.00	$ 142.01	16	1,139	1,139	$ 190.34	$ 45.00	$ 135.00
.67 Water Heater	2	0.67 Energy Factor or Greater	0	0	0	0	0	33	0	$ 139.00	$ 59.73	$ 31.94	$ -	$ -	16	0	0	$ -	$ 45.00	$ -
.67 Water Heater	3	0.67 Energy Factor or Greater	3	3	0	3	3	33	99	$ 139.00	$ 59.73	$ 31.94	$ 417.00	$ 142.01	16	1,139	1,139	$ 190.34	$ 45.00	$ 135.00
.91 Tankless Hot Water Heater	1	0.91 Energy Factor or Greater	58	58	2	56	56	54	3,132	$ 1,171.00	$ 103.86	$ 336.42	$ 67,918.00	$ 42,381.60	18	39,107	39,107	$ 6,021.59	$ 150.00	$ 8,700.00
.91 Tankless Hot Water Heater	2	0.91 Energy Factor or Greater	18	18	-4	22	22	54	972	$ 1,171.00	$ 103.86	$ 336.42	$ 21,078.00	$ 13,152.91	18	12,137	12,137	$ 1,868.77	$ 150.00	$ 2,700.00
.91 Tankless Hot Water Heater	3	0.91 Energy Factor or Greater	18	18	1	17	17	54	972	$ 1,171.00	$ 103.86	$ 336.42	$ 21,078.00	$ 13,152.91	18	12,137	12,137	$ 1,868.77	$ 150.00	$ 2,700.00
Energy Saver Kit (Kit 1)	1	Low Flow Showerhead plus Aerators	13	13	0	13	13	17	221	$ 10.00	$ 15.86	$ 69.17	$ 130.00	$ -	10	1,777	1,777	$ 424.90	$ 10.00	$ 130.00
Energy Saver Kit (Kit 1)	2	Low Flow Showerhead plus Aerators	10	10	0	10	10	17	170	$ 10.00	$ 15.86	$ 69.17	$ 100.00	$ -	10	1,367	1,367	$ 326.84	$ 10.00	$ 100.00
Energy Saver Kit (Kit 1)	3	Low Flow Showerhead plus Aerators	16	16	0	16	16	17	272	$ 10.00	$ 15.86	$ 69.17	$ 160.00	$ -	10	2,188	2,188	$ 522.95	$ 10.00	$ 160.00
Energy Saver Kit (Kit 2)	1	Low Flow Showerhead plus Aerators	75	75	0	75	75	31	2,325	$ 16.00	$ 28.92	$ 69.17	$ 1,200.00	$ -	10	18,699	18,699	$ 4,470.05	$ 16.00	$ 1,200.00
Energy Saver Kit (Kit 2)	2	Low Flow Showerhead plus Aerators	61	61	0	61	61	31	1,891	$ 16.00	$ 28.92	$ 69.17	$ 976.00	$ -	10	15,209	15,209	$ 3,635.64	$ 16.00	$ 976.00
Energy Saver Kit (Kit 2)	3	Low Flow Showerhead plus Aerators	74	74	0	74	74	31	2,294	$ 16.00	$ 28.92	$ 69.17	$ 1,184.00	$ -	10	18,450	18,450	$ 4,410.45	$ 16.00	$ 1,184.00
TOTAL PROGRAM			**1998**	**574,528**	**10,718**	**1,924**	**563,810**		**176,439**				**$ 1,765,802.89**	**$ 1,001,537.97**	**23.78**	**2,489,627**	**2,489,627**	**$ 339,222**		**$ 511,364.60**
									+ 9,205 therms											*+ $22,304.20*
Long Term Discount Rate	4.17%																	Balance per detail		$ 507,613.20

Program Year:
2014

CASCADE NATURAL GAS CORPORATION
COMMERCIAL Program Participant Cost Effectiveness

MEASURE	DESCRIPTION	EFFICIENCY TYPE FOR QUALIFICATION	TOTAL MEASURE COUNT	ANNUAL THERM SAVINGS/UNIT	UNITS	UNITS INSTALLED	TOTAL ANNUAL THERM SAVINGS	MEASURE INCREM COST	SOCIETAL NEBS	PARTICIPANT NEBS	TOTAL INCREMENTAL COST	TOTAL NET INCREMENTAL COST w NEBS	LIFE	DISCOUNTED THERM SAVINGS	PROGRAM DELIVERY & ADMIN	PROGRAM REBATE	TOTAL REBATES COST	UTILITY COST	LOADED UC	BENEFIT COST RATIO	TOTAL RESOURCE COST	LOADED TRC	BENEFIT COST RATIO
Standard Measures																							
HVAC Unit Heater	High-Eff Non-Condensing with Electronic Ignition	Minimum 86% AFUE	0.00	0.61	kBtu/hr	0.00	0.00	$ 3.26	$ 1.16	$ 0.40	$ -	$ -	18	0	$ -	$ 1.50	$ -	$ -	$ -	-	$ -	$ -	-
HVAC Unit Heater	High Efficiency Condensing	Minimum 92% AFUE	0.00	1.10	kBtu/hr	0.00	0.00	$ 5.23	$ 2.09	$ 0.73	$ -	$ -	18	0	$ -	$ 3.00	$ -	$ -	$ -	-	$ -	$ -	-
Warm Air Furnace	High Efficiency Condensing Furnace	Minimum 91% AFUE	27.00	1.10	kBtu/hr	2,123.00	2335.30	$ 6.72	$ 2.09	$ 0.73	$ 14,267	$ 8,288	18	29,159	$ 6,315.95	$ 3.00	$ 6,369	$ 0.218	$ 0.435	1.059	$ 0.284	$ 0.501	0.817
Radiant Heating	Direct Fired Radiant Heating	None	8.00	4.33	kBtu/hr	760.00	3289.28	$ 21.00	$ 8.22	$ 2.86	$ 15,960	$ 7,539	18	41,070	$ 8,896.04	$ 6.50	$ 4,940	$ 0.120	$ 0.337	1.367	$ 0.184	$ 0.400	1.023
Insulation-Attic	Attic Insulation (Tier 1 - Z1 &Z3)	Minimum R-30	2.00	0.40	sq. ft.	5,854.00	2335.75	$ 1.35	$ 0.96	$ 0.34	$ 7,903	$ 248	30	39,569	$ 6,317.16	$ 0.50	$ 2,927	$ 0.074	$ 0.234	1.871	$ 0.006	$ 0.166	2.242
Insulation-Attic	Attic Insulation (Tier 1- Z2)	Minimum R-30	0.00	0.22	sq. ft.	0.00	0.00	$ 1.35	$ 0.53	$ 0.19	$ -	$ -	30	0	$ -	$ 0.50	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Attic	Attic Insulation (Tier 2 - Z1 &Z3)	Minimum R-45	2.00	0.41	sq. ft.	820.00	333.74	$ 1.63	$ 0.98	$ 0.35	$ 1,337	$ 243	30	5,654	$ 902.62	$ 0.65	$ 533	$ 0.094	$ 0.254	1.721	$ 0.043	$ 0.203	1.836
Insulation-Attic	Attic Insulation (Tier 2 - Z2)	Minimum R-45	0.00	0.23	sq. ft.	0.00	0.00	$ 1.63	$ 0.56	$ 0.20	$ -	$ -	30	0	$ -	$ 0.65	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 1 - Z1 & Z3)	Minimum R-21	1.00	0.45	sq. ft.	2,260.00	1010.22	$ 1.83	$ 1.08	$ 0.39	$ 4,136	$ 825	30	17,114	$ 2,732.20	$ 0.60	$ 1,356	$ 0.079	$ 0.239	1.830	$ 0.048	$ 0.208	1.789
Insulation-Roof	Roof Insulation (Tier 1 Z2)	Minimum R-30	0.00	0.25	sq. ft.	0.00	0.00	$ 1.83	$ 0.60	$ 0.22	$ -	$ -	30	0	$ -	$ 0.60	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Roof	Roof Insulation (Tier 2 - Z1 & Z3)	Minimum R-21	1.00	0.46	sq. ft.	32,344.00	14878.24	$ 2.15	$ 1.11	$ 0.40	$ 69,540	$ 20,777	30	252,047	$ 40,239.03	$ 0.80	$ 25,875	$ 0.103	$ 0.262	1.666	$ 0.082	$ 0.242	1.536
Insulation-Roof	Roof Insulation (Tier 2- Z2)	Minimum R-30	0.00	0.25	sq. ft.	0.00	0.00	$ 2.15	$ 0.61	$ 0.22	$ -	$ -	30	0	$ -	$ 0.80	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 1- Z1 & Z3)	Minimum R-11	3.00	0.22	sq. ft.	2,181.00	479.82	$ 1.50	$ 0.53	$ 0.19	$ 3,272	$ 1,699	30	8,128	$ 1,297.70	$ 0.30	$ 654	$ 0.080	$ 0.240	1.820	$ 0.209	$ 0.369	1.009
Insulation-Wall	Wall Insulation (Tier 1- Z2)	Minimum R-19	0.00	0.12	sq. ft.	0.00	0.00	$ 1.50	$ 0.29	$ 0.10	$ -	$ -	30	0	$ -	$ 0.30	$ -	$ -	$ -	-	$ -	$ -	-
Insulation-Wall	Wall Insulation (Tier 2- Z1 & Z3)	Minimum R-11	1.00	0.24	sq. ft.	200.00	48.60	$ 1.70	$ 0.59	$ 0.21	$ 340	$ 181	30	823	$ 131.44	$ 0.40	$ 80	$ 0.097	$ 0.257	1.702	$ 0.219	$ 0.379	0.981
Insulation-Wall	Wall Insulation (Tier 2- Z2)	Minimum R-19	0.00	0.14	sq. ft.	0.00	0.00	$ 1.70	$ 0.33	$ 0.12	$ -	$ -	30	0	$ -	$ 0.40	$ -	$ -	$ -	-	$ -	$ -	-
Domestic Hot Water Tanks	Condensing Tank	Minimum 91% AFUE or 91% Thermal Efficiency	22.00	0.79	kBtu/hr	5,847.90	4619.84	$ 6.06	$ 1.36	$ 0.47	$ 35,438	$ 24,725	15	50,760	$ 12,494.62	$ 2.50	$ 14,620	$ 0.288	$ 0.534	0.889	$ 0.487	$ 0.733	0.576
Boiler Vent Damper	Boiler Vent Damper	Minimum 1,000 kBtu input	1.00	270.00	kBtu/hr	1.00	270.00	$ 1.50	$ 412.56	$ 139.91	$ 2		12	2,509	$ 730.23	$ 1,000.00	$ 1,000	$ 0.399	$ 0.690	0.690	$ -	$ 0.291	-
Gas Fryer	Energy Star	None	45.00	548.00	each	45.00	24660.00	$ 1,400.00	$ 671.60	$ 219.67	$ 63,000	$ 22,893	8	164,870	$ 66,694.35	$ 600.00	$ 27,000	$ 0.164	$ 0.568	0.840	$ 0.139	$ 0.543	0.818
Clothes Washer	Commercial Gas Washer	1.8 MEF	0.00	90.00	each	0.00	0.00	$ 200.00	$ 124.47	$ 41.57	$ -	$ -	10	0	$ -	$ 180.00	$ -	$ -	$ -	-	$ -	$ -	-
Steam Trap	Steam Traps Line Size <2"	Minimum 300 kBtuh system size, steam pressures operating at 7 psig or qreater, steam trap line size < 2", Min 25 psiq Trap Desiqn Pressure	1.00	136.90	kBtu/hr	6.00	821.40	$ 315.00	$ 156.32	$ 50.43	$ 1,890	$ 649	7	4,899	$ 2,221.52	$ 80.00	$ 480	$ 0.098	$ 0.551	0.869	$ 0.133	$ 0.586	0.761
Boiler	High Efficiency Condensing Boiler	Min 90% Thermal Eff & 300 kBtu input	33.00	1.50	kBtu/hr	46,847.00	70270.50	$ 8.89	$ 3.00	$ 1.05	$ 416,470	$ 226,355	20	940,783	$ 190,050.49	$ 4.00	$ 187,388	$ 0.199	$ 0.401	1.127	$ 0.241	$ 0.443	0.908
DHW Tankless Water Heater	Energy Star	.82 EF	20.00	35.00	gpm	135.12	4729.20	$ 137.90	$ 66.44	$ 23.17	$ 18,633	$ 6,525	18	59,050	$ 12,790.39	$ 60.00	$ 8,107	$ 0.137	$ 0.354	1.301	$ 0.111	$ 0.327	1.251
Gas Convection Oven	Energy Star	≥44% Cooking Eff/ ≤13,000 Btu/hr Idle Rate	6.00	261.00	each	6.00	1566.00	$ 900.00	$ 398.81	$ 135.25	$ 5,400	$ 2,196	12	14,553	$ 4,235.33	$ 400.00	$ 2,400	$ 0.165	$ 0.456	1.043	$ 0.151	$ 0.442	0.979
Conn 6 Pan Gas Steamer	Energy Star or CEE/FSTC Qualified	≥38% Cooking Eff / ≤2,083 Btu/hr/pan Idle Rate	0.00	912.00	each	0.00	0.00	$ 3,200.00	$ 1,393.54	$ 472.59	$ -	$ -	12	0	$ -	$ 1,200.00	$ -	$ -	$ -	-	$ -	$ -	-
Door Type Dish LT Gas	Energy Star	≤.6 kw Idle Rate/ ≤1.18 gallon/rack	1.00	448.00	each	1.00	448.00	$ 1,800.00	$ 684.55	$ 232.15	$ 1,800	$ 883	12	4,163	$ 1,211.64	$ 600.00	$ 600	$ 0.144	$ 0.435	1.093	$ 0.212	$ 0.503	0.860
Double Rack Oven	Double Rack Oven	FSTC Qualified/≥50% Cooking Eff/ ≤3,500 Btu/hr/Idle Rate D Rack	0.00	1,806.00	each	0.00	0.00	$ 6,200.00	$ 2,759.58	$ 935.86	$ -	$ -	12	0	$ -	$ 2,000.00	$ -	$ -	$ -	-	$ -	$ -	-
Gas Griddle	Energy Star	≥38% Cooking Eff/ ≤2650 Btu/hr sq ft Idle Rate	0.00	158.00	each	0.00	0.00	$ 1,048.00	$ 241.43	$ 81.87	$ -	$ -	12	0	$ -	$ 200.00	$ -	$ -	$ -	-	$ -	$ -	-
Gas Fryer (New Tariff)	Energy Star	None	7.00	272.00	each	16.00	4352.00	$ 1,049.00	$ 415.62	$ 140.95	$ 16,784	$ 7,879	12	40,444	$ 11,770.23	$ 600.00	$ 9,600	$ 0.237	$ 0.528	0.900	$ 0.195	$ 0.486	0.890
Motion Control Faucet	Maximum flow rate of 1.8 gpm	WaterSense® Certified and Below Deck Mixing Valve	1.00	136.00	each	1.00	136.00	$ 315.00	$ 131.10	$ 40.72	$ 315	$ 143	5	603	$ 367.82	$ 105.00	$ 105	$ 0.174	$ 0.785	0.619	$ 0.238	$ 0.848	0.532
Insulation - Attic (New Tariff)	Attic Insulation (Tier 1)	Minimum R-30	1.00	0.31	sq. ft.	7,200.00	2232.00	$ 1.35	$ 0.75	$ 0.27	$ 9,720	$ 2,405	30	37,811	$ 6,036.57	$ 0.50	$ 3,600	$ 0.095	$ 0.255	1.715	$ 0.064	$ 0.223	1.666
Insulation - Wall (New Tariff)	Wall Insulation (Tier 2)	Minimum R-19	1.00	0.190	sq. ft.	6,840.00	1299.60	$ 1.70	$ 0.46	$ 0.16	$ 11,628	$ 7,369	30	22,016	$ 3,514.84	$ 0.56	$ 3,830	$ 0.174	$ 0.334	1.310	$ 0.335	$ 0.494	0.752
Gas Convection Oven (New Tariff)	Energy Star	≥42% Cooking Eff/ ≤13,000 Btu/hr Idle Rate	2.00	213.000	each	2.00	426.00	$ 900.00	$ 325.47	$ 110.38	$ 1,800	$ 928	12	3,959	$ 1,152.14	$ 450.00	$ 900	$ 0.227	$ 0.518	0.917	$ 0.234	$ 0.526	0.823
Radiant Heating (New Tariff)	Direct Fired Radiant Heating	None	8.00	4.330	kBtu/hr	310.00	1342.30	$ 21.00	$ 8.22	$ 2.87	$ 6,510	$ 3,073	18	16,760	$ 3,630.33	$ 6.95	$ 2,155	$ 0.129	$ 0.345	1.334	$ 0.183	$ 0.400	1.023
Energy Saver Kit A	Kitchen Pre Rinse Spray Valve & Bath Aerators	Provided	2.00	109.000	each	2.00	218.00	$ 55.00	$ 105.07	$ 32.63	$ 110	$ (165)	5	966	$ 589.59	$ 68.59	$ 137	$ 0.142	$ 0.752	0.646	$ (0.171)	$ 0.439	1.028
Energy Saver Kit B	Low Flow Showerhead	Provided	3.00	14.000	each	3.00	42.00	$ 25.00	$ 19.36	$ 6.47	$ 75	$ (2)	10	338	$ 113.59	$ 26.49	$ 79	$ 0.235	$ 0.572	0.846	$ (0.007)	$ 0.329	1.338
Custom Measures																							
WVC - Batjer Hall Custom Controls Upgrade	COMCUSTDDC	COMCUSTDDC	1.00	19,830	/unit	1	19,830	$ 154,350.00	$ 34,197.55	$ 11,787.59	$ 154,350	$ 108,365	15	217,880	$ 23,599.40	$ 24,996.00	$ 24,996	$ 0.115	$ 0.223	2.130	$ 0.497	$ 0.606	0.697
WVC - Brown Library Custom Controls Upgrade	COMCUSTDDC	COMCUSTDDC	1.00	12,880	/unit	1	12,880	$ 49,445.00	$ 22,212.03	$ 7,656.29	$ 49,445	$ 19,577	15	141,517	$ 15,328.31	$ 16,235.00	$ 16,235	$ 0.115	$ 0.223	2.130	$ 0.138	$ 0.247	1.712
City of Longview Water/Sewer Custom Controls Upgrade	COMCUSTDDC	COMCUSTDDC	1.00	6,762	/unit	1	6,762	$ 13,938.00	$ 11,661.31	$ 4,019.55	$ 13,938	$ -	15	74,297	$ 8,047.36	$ 6,969.00	$ 6,969	$ 0.094	$ 0.202	2.350	$ -	$ 0.108	-
City of Longview Library Custom Controls Upgrade	COMCUSTDDC	COMCUSTDDC	1.00	4,239	/unit	1	4,239	$ 33,211.00	$ 7,310.31	$ 2,519.80	$ 33,211	$ 23,381	15	46,576	$ 5,044.77	$ 7,980.00	$ 7,980	$ 0.171	$ 0.280	1.699	$ 0.502	$ 0.610	0.692
Barrie Apartments (Judy Holloway) Cust Insulation	COMCUSTINS	COMCUSTINS	1.00	243	/unit	1	243	$ 1,974.00	$ 586.87	$ 209.55	$ 1,974	$ 1,178	30	4,117	$ 289.19	$ 492.00	$ 492	$ 0.120	$ 0.190	2.303	$ 0.286	$ 0.356	1.044
Stremler Gravel Custom Insulation	COMCUSTINS	COMCUSTINS	1.00	423	/unit	1	423	$ 17,280.00	$ 1,021.59	$ 364.76	$ 17,280	$ 15,894	30	7,166	$ 503.41	$ 856.00	$ 856	$ 0.119	$ 0.190	2.304	$ 2.218	$ 2.288	0.163
Whatcom Land Trust (A) Air Sealing	COMCUSTINS	COMCUSTINS	1.00	98	/unit	1	98	$ 550.00	$ 169.00	$ 58.25	$ 550	$ 323	15	1,077	$ 116.63	$ 124.00	$ 124	$ 0.115	$ 0.223	2.126	$ 0.300	$ 0.408	1.035
Walla Walla Nursery Custom Greenhouse	COMCUSTOTH	COMCUSTOTH	1.00	11,853	/unit	1	11,853	$ 67,213.00	$ 17,269.36	$ 5,815.46	$ 67,213	$ 44,128	11	102,892	$ 14,106.09	$ 11,444.00	$ 11,444	$ 0.111	$ 0.248	1.929	$ 0.429	$ 0.566	0.769
Stanwood High School Control Upgrade	COMCUSTDDC	COMCUSTDDC	1.00	7,504	/unit	1	7,504	$ 31,300.00	$ 12,940.92	$ 4,460.62	$ 31,300	$ 13,898	15	82,449	$ 8,930.40	$ 9,459.00	$ 9,459	$ 0.115	$ 0.223	2.130	$ 0.169	$ 0.277	1.525
Shields Bag and Printing Custom 2014	COMCUSTOTH	COMCUSTOTH	1.00	229,000	/unit	1	229,000	$ 291,500.00	$ 394,918.77	$ 136,124.95	$ 291,500	$ -	15	2,516,110	$ 272,529.65	$ 145,750.00	$ 145,750	$ 0.058	$ 0.166	2.857	$ -	$ 0.108	-
Cowiche Canyon Combi Oven	COMCUSTOTH	COMCUSTOTH	1.00	712	/unit	1	712	$ 5,660.00	$ 1,087.94	$ 368.95	$ 5,660	$ 4,203	12	6,617	$ 847.34	$ 739.00	$ 739	$ 0.112	$ 0.240	1.983	$ 0.635	$ 0.763	0.567
Hoquiam High School Retrocommissioning	COMCUSTRET	COMCUSTRET	1.00	28,046	/unit	1	28,046	$ 54,500.00	$ 27,035.07	$ 8,396.38	$ 54,500	$ 19,069	5	124,262	$ 33,377.15	$ 12,971.00	$ 12,971	$ 0.104	$ 0.373	1.302	$ 0.153	$ 0.422	1.070
Lincoln Elementary Custom DDC Controls	COMCUSTDDC	COMCUSTDDC	1.00	1442	/unit	1	1,442	$ 18,708.00	$ 2,486.78	$ 857.17	$ 18,708	$ 15,364	15	15,844	$ 1,716.10	$ 1,818.00	$ 1,818.00	$ 0.115	$ 0.223	2.130	$ 0.970	$ 1.078	0.392
TOTAL PROGRAM							**465,175.79**				**$ 1,445,956.61**	**$ 611,032**	**15.43**	**5,098,851**	**$ 768,871.60**		**$544,569.00**	**$ 0.107**	**$ 0.258**	**1.848**	**$ 0.120**	**$ 0.271**	**1.564**

IRP Discount Rate 8.76%
Inflation rate 2.00%

Long Term Discount Rate 4.17%

Total 2014 Program Admin
$768,872