NEW HAMPSHIRE STATEWIDE ENERGY EFFICIENCY PLAN

2020 Update

Jointly Submitted by New Hampshire's Electric and Natural Gas Utilities

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

New Hampshire Electric Cooperative, Inc.

Public Service Company of New Hampshire d/b/a Eversource Energy

Unitil Energy Systems, Inc.

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities

Northern Utilities, Inc.

NHPUC Docket DE 17-136

September 13, 2019

NHsaves Your Source for Energy Efficiency | EVERSOURCE | Liberty Utilities | New Hampshire Electric Co-op | Unitil

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Executive Summary

New Hampshire's electric and natural gas utilities are pleased to submit their 2020 Statewide Energy Efficiency Plan Update ("2020 Update") for approval by the New Hampshire Public Utilities Commission (the "Commission"). The 2020 Update is being filed jointly by Liberty Utilities Corp. (Granite State Electric) d/b/a Liberty Utilities ("Liberty Electric"), New Hampshire Electric Cooperative, Inc. ("NHEC"), Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource"), and Unitil Energy Systems, Inc. ("Unitil Electric") (hereinafter referred to as the "NH Electric Utilities"), and Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities ("Liberty Gas"), and Northern Utilities, Inc. ("Unitil Gas") (hereinafter referred to as "NH Natural Gas Utilities") and collectively known as the ("NH Utilities").

New Hampshire's utilities have delivered high-quality energy efficiency programs to the state's electric and natural gas customers[1] for decades. New Hampshire's energy efficiency programs provide valuable energy savings, fiscal savings, and environmental benefits due to reduced energy generation and consumption. Since 2002, New Hampshire's electric and natural gas customers have installed energy efficiency measures that have saved more than 17.7 billion electric kilowatt-hours ("kWh") and 41 million natural gas British Thermal Units ("MMBtus"). This results in a cumulative customer savings in excess of $3.1 billion.

The 2020 program year is the third year of New Hampshire's first three-year Energy Efficiency Plan under the Energy Efficiency Resource Standard ("EERS"). The 2018-2020 Statewide Energy Efficiency Plan ("2018-2020 Plan[2]") was approved by the Commission on January 2, 2018[3]. The 2020 Update provides an overview of adjustments and changes the NH Utilities plan to implement in 2020. Generally speaking, the information contained in the 2018-2020 Plan that is

[1] Hereinafter, the word "customer" will be understood to mean both customers and New Hampshire Electric Cooperative members.

[2] NH Utilities. 2018-2020 Statewide Energy Efficiency Plan. Docket DE-1706. Filed Sep. 1, 2017. Available at: https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-136/INITIAL%20FILING%20-%20PETITION/17-136_2017-09-01_NHUTILITIES_EE_PLAN.PDF.

[3] New Hampshire Public Utilities Commission. *Order No. 25,932: Energy Efficiency Resource Standard – Order Approving Settlement Agreement*. Aug. 8, 2016. Available at: http://www.puc.state.nh.us/Regulatory/Orders/2016orders/25932e.pdf.

not referenced in this 2020 Update remains in its original form as approved by the Commission and as revised by the 2019 Update plan.

The 2020 Update will result in multiple benefits to residents, businesses and municipalities in New Hampshire, including direct energy savings, demand and emissions reductions.

- In 2020, New Hampshire's energy efficiency programs will result in savings of 1.7 billion electric kilowatt-hours and 3 million natural gas MMBtus over the lifetime of installed energy-saving measures. In addition, New Hampshire's 2020 energy efficiency programs will save 2.6 million MMBtus from other fuels, such as oil and propane.

- New Hampshire's 2020 energy efficiency programs will result in passive demand reduction savings that will reduce summer peak demand by 15.8 megawatts ("MW") and winter peak demand by 19 MW. These figures do not include the results of the Eversource and Unitil active demand initiative activities.

- New Hampshire's 2020 energy efficiency program savings will result in customer energy cost savings of more than $373 million over the lifetime of the measures. Additionally, the programs will support 914 full-time equivalents ("FTEs") or 1.9 million work hours[4].

- The 2020 programs will result in reductions of more than 1.2 million tons of greenhouse gas ("GHG") emissions over the lifetime of the measures, the equivalent of taking 254,985 passenger vehicles[5] off the road for one year.

[4] According to a study from the Political Economy Research Institute (PERI) of the University of Massachusetts at Amherst (2019), every million dollars spent on energy-efficient measures, such as building retrofits, supports 6.2 direct jobs, 2.7 indirect jobs, and 3.3 induced jobs. See Pollin, R., Wicks-Lim, J., Chakrabortu, S., Hansen, T. *A Green Growth Program for Colorado*. Available at: https://www.peri.umass.edu/publication/item/1168-a-green-growth-program-for-colorado. Based on $76.84 million budget for the 2020 Update.

[5] Utilizing EPA Greenhouse Gas Equivalencies Calculator. Retrieved from http: www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Chapter 1: Introduction

1.1 NHSaves Programs

The NH Utilities collaborate to provide their customers with high-quality energy efficiency programs under the statewide umbrella brand "NHSaves". Through NHSaves, the NH Utilities provide customers with incentives, information, and support designed to save energy, reduce customers' energy costs, and protect the environment.

Through this collaboration, the NH Utilities deliver innovative, award-winning programs on a statewide platform. In 2019, the NH Utilities received recognition from the American Council for an Energy-Efficient Economy ("ACEEE") with the Exemplary Energy Efficiency Program award for the Home Energy Assistance (income-eligible) and Home Performance with ENERGY STAR® programs. The NH Utilities were also recognized by the EPA in 2019, receiving the ENERGY STAR Partner of the Year–Sustained Excellence recognition for the successful implementation of the ENERGY STAR Certified Homes program for the 7th year in a row.

1.2 Energy Efficiency Resource Standard

On August 2, 2016, the Commission's Order 25,932[6] adopted an EERS, establishing specific, long-term energy savings goals as a percentage of the NH Utilities' retail sales. For the first time, the NH Utilities filed a three-year statewide energy efficiency plan that established cumulative energy savings goals over the 2018-2020 Plan equating to 3.10 percent of retail electric sales and 2.25 percent of retail natural gas sales, relative to a 2014 delivery sales baseline. The energy savings goals have progressively increased over the three-year period, culminating in the 2020 program goals to reduce electric consumption by 1.3 percent and natural gas consumption by 0.8 percent.

[6] New Hampshire Public Utilities Commission. *Order No. 25,932: Energy Efficiency Resource Standard – Order Approving Settlement Agreement*. Aug. 8, 2016. Available at: http://www.puc.state.nh.us/Regulatory/Orders/2016orders/25932e.pdf.

Figure 1-1: 2018-2020 Energy Savings Goals as a Percentage of 2014 Retail Sales

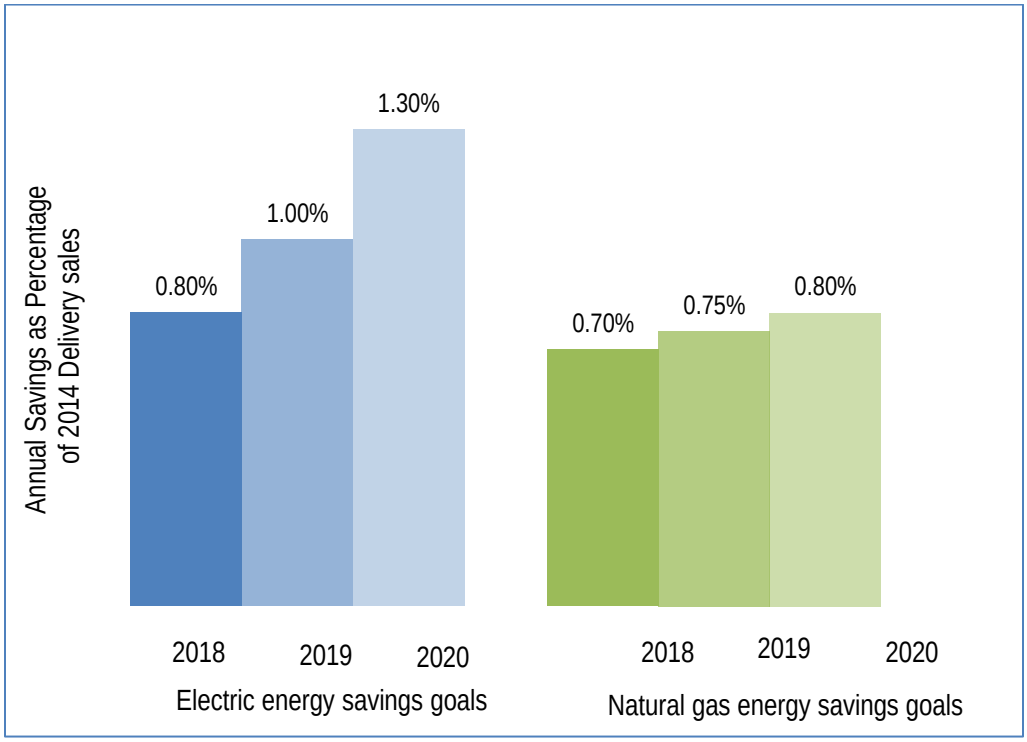


Table 1-1: Comparison to 2019

ELECTRIC PROGRAMS	2019 Update	2020 Update
Lifetime MWh Savings	1,327,457	1,746,433
Annual MWh Savings	109,897	140,180
Annual Savings as a % of 2014 Delivery Sales	1.0%	1.3%
Program Budget	$47,079,203	$65,691,434
Program Cost per Lifetime kWh Savings	$0.035	$0.038
NATURAL GAS PROGRAMS	**2019 Update**	**2020 Update**
Lifetime MMBtu Savings	2,841,037	3,033,584
Annual MMBtu Savings	174,787	187,777
Annual Savings as a % of 2014 Delivery Sales	0.75%	0.80%
Program Funding	$9,896,499	$11,151,972
Program Cost per Lifetime MMBtu Savings	$3.48	$3.68

1.3 2020 Program Goals

For the 2020 program year, the NH Utilities are proposing energy efficiency measures, programs, and education designed to achieve energy savings of 1.3 percent of retail electric sales and 0.8 percent of retail natural gas sales relative to the EERS' 2014 delivery sales baseline.

Tables 1-2 and 1-3 summarize the specific statewide energy savings goals for the 2020 NHSaves Electric and Natural Gas programs.

Table 1-2: Electric Program Annual Statewide Savings Goal

2014 Delivery Sales (MWh)	Electric Annual Statewide Goal (MWh) 2020
	1.3%
10,782,973	140,179

Table 1-3: Natural Gas Program Annual Statewide Savings Goal

2014 Delivery Sales (MMBtu)	Natural Gas Annual Statewide Goal (MMBtu) 2020
	0.80%
23,352,672	186,821

1.4 2020 Annual Energy Savings Targets

1.4.1 Electric Savings and Benefits

Tables 1-4 and 1-5 summarize the energy savings targets for the 2020 NHSaves Electric programs.

Table 1-4: 2020 Electric Program Annual Savings, by Utility

Company	Electric Annual Savings (MWh)	Percentage of 2020 Statewide Savings
Eversource	106,616	76%
Liberty Electric	12,599	9%
NHEC	7,017	5%
Unitil Electric	13,949	10%
Total	140,180	100%

Table 1-5: 2020 Electric Program Annual Savings, by Sector

Sector	Electric Annual Savings (MWh)	Percentage of 2020 Statewide Savings
C&I and Municipal	114,850	82%
Residential	23,956	17%
Income-Eligible	1,374	1%
Total	140,180	100%

1.4.2 Natural Gas Savings and Benefits

Tables 1-6 and 1-7 summarize the energy savings targets for the 2020 NHSaves Natural Gas programs.

Table 1-6: 2020 Natural Gas Program Annual Savings, by Utility

Company	Natural Gas Annual Savings (MMBtu)	Percentage of 2020 Statewide Savings
Liberty Gas	147,465	79%
Unitil Gas	40,312	21%
Total	187,777	100%

Table 1-7: 2020 Natural Gas Program Annual Savings, by Sector

Sector	Natural Gas Annual Savings (MMBtu)	Percentage of 2020 Statewide Savings
C&I and Municipal	123,076	66%
Residential	54,104	29%
Income-Eligible	10,597	6%
Total	187,777	100%

1.4.3 Additional Energy Savings and Benefits

While the majority of the state's energy savings come from electricity and natural gas, additional energy savings derive from sources such as kerosene, oil, propane, and wood. These energy savings are supplemental to the statewide EERS energy savings goals for the NHSaves Electric and Natural Gas programs. The additional energy savings, which are detailed in Table 1-8 by customer sector in MMBtus, are integral to providing a comprehensive suite of program offerings and also contribute to cost-effectiveness of the NHSaves Electric programs.

The additional non-electric, non-natural gas savings resulting from the NHSaves programs are particularly important in reducing the energy cost burden of residential customers, especially those who qualify for income-eligible programs. In addition, the additional fuel savings from energy efficiency projects in municipal buildings benefit municipal customers and lead to a more efficient use of taxpayer dollars in local communities throughout the state.

Table 1-8: 2020 Annual MMBtu Savings from Electric Programs

Electric Program Annual Savings From Other Fuel Sources, by Sector (MMBtu)		
Sector	**MMBtu**	**Percentage of 2020 MMBtu savings**
Income-Eligible	36,989	28%
Other Residential	92,846	70%
Municipal	3,718	3%
Total	133,553	100%

1.5 Energy Efficiency Program Funding

1.5.1 Electric Energy Efficiency Funding

There are three main funding sources for the NHSaves Electric programs: (1) a portion of the Systems Benefit Charge ("SBC") that is applied to the electric bills of all customers receiving delivery service through one of the NH Electric Utilities; (2) a portion of the Regional Greenhouse Gas Initiative ("RGGI") auction proceeds; and (3) proceeds earned by each of the NH Electric Utilities from the Independent System Operator of New England ("ISO-NE") for participation in ISO-NE's Forward Capacity Market ("FCM"). All electric utility FCM revenues are derived from the NH Utilities' energy efficiency programs and support NHSaves Electric programs.

Any balance of funds, positive or negative, from prior program years is carried forward to future years. This includes interest applied on the monthly balance at the prime rate. At the end of 2018, Eversource, Liberty Electric, Unitil Electric and NHEC had carryforward balances. With the exception of NHEC, these balances have been included in their entirety as part of the funding sources for the 2020 programs.

At the end of 2018, NHEC had a carry forward balance of $578,553. Of this total, $22,414 was unspent 2018 Municipal program funds that were allocated to be spent on projects that will complete in 2019. HEA funds remaining from the 2018 program of $51,929 were carried forward into the 2020 HEA program budget. Seventeen percent of the remaining balance was added to the HEA program 2020 budget. The remaining balance of $461,595 was split between the Residential and C&I sectors by sales allocation and added to the program budgets with the following exceptions. NHEC allocated $100,000 from the residential carry forward balance to the existing residential on-bill loan offering, and $150,000 from the commercial carry forward balance to establish a commercial on-bill loan offering.

The 2020 SBC revenues are estimates based on each NH Electric Utility's forecasted 2020 sales and a proposed SBC energy efficiency program rate of $0.00528 per kWh. The proposed SBC rate is a $0.00155 increase from the 2019 SBC energy efficiency program rate of $0.00373 per kWh.

The Commission staff provides an estimate of RGGI revenue figures for use by energy efficiency programs. ISO-NE's FCM revenues are estimated based on the closing market price for passive demand savings and the obligation of each electric utility during the two commitment periods covered by calendar year 2020. These figures differ by electric company and can be subject to adjustment based on actual performance.

Tables 1-9 and 1-10 summarize the original 2018-2020 Plan estimated electric program funding for 2020 and the updated estimated 2020 program funding. The overall estimated level of funding for 2020 increased by $3.1 million from the estimated funding included in the 2018-

2020 Plan. The increase consists primarily of carry forward and revised estimates of FCM funding.

Table 1-9: Annual Funding Source, Electric Original 2020 Estimate

Source	Original 2020 Estimated Electric Funding ($)				Total
	Eversource	Liberty	NHEC	Unitil	
SBC	41,668,255	4,927,369	3,983,128	6,244,321	56,823,074
Carry Forward and Interest	-	-	-	-	-
RGGI	1,863,196	214,028	197,292	280,435	2,554,951
ISO-NE FCM	5,678,238	417,463	65,000	500,000	6,660,701
Total	49,209,689	5,558,860	4,245,420	7,024,756	66,038,725

Table 1-10: Annual Funding Source, Electric Updated 2020 Estimate

Source	Updated 2020 Estimated Electric Funding ($)				Total
	Eversource	Liberty	NHEC	Unitil	
SBC	41,185,610	4,882,641	4,005,978	6,229,615	56,303,844
Carry Forward from 2018 HEA Program		217,252	51,929	44,244	313,424
Carry Forward and Interest	1,252,498	475,831	254,210	866,007	2,848,546
RGGI	1,846,709	212,954	204,082	283,556	2,547,302
ISO-NE FCM	5,834,218	609,155	100,000	746,048	7,289,421
Total	50,119,035	6,397,833	4,616,199	8,169,470	69,302,537

1.6 Natural Gas Energy Efficiency Funding

The NH Natural Gas Utilities' NHSaves programs are funded by a portion of each natural gas utility's Local Distribution Adjustment Charge ("LDAC"), which is applied to natural gas customer's bills. As with New Hampshire's Electric programs, the balance of funds from each natural gas company's prior program year is carried forward to future years, including interest earned on monthly balances applied at the prime rate. This balance can be positive or negative.

Liberty and Unitil independently determine the overall budget requirements to meet their company's EERS energy savings targets. LDAC rates are then set by program sector by each company based on revenue needs and sales forecasts. Proposed energy efficiency LDAC rates for 2020 can be found in Attachments I-3 and J-3.

Liberty Gas has an estimated carry-under balance of $259,505 as of November 1, 2019. Liberty Gas also had underspending of $233,223 from its 2018 Home Energy Assistance program which is being added to its originally planned 2020 Home Energy Assistance program budget of $1,443,218, for a revised total Home Energy Assistance program budget in 2020 of $1,676,441.

Unitil Gas projects having a carry-forward balance of $232,870 as of November 1, 2019, of which $75,000 will be dedicated to the residential on-bill financing ("OBF") offer and $150,000 will be dedicated to the commercial and industrial OBF in 2020. Unitil's natural gas Home Energy Assistance program expended all budgeted funds in 2018 and therefore had no balance to add to its 2020 planned budget.

Table 1-11: 2020 Original Annual Funding Source, Natural Gas

Source	Original 2020 Natural Gas Funding ($)		
	Liberty	Northern	Total
LDAC	8,956,308	2,475,533	11,431,841
Carry Forward and Interest	-	69,937	69,937
Total	8,956,308	2,545,470	11,501,778

Table 1-12: 2020 Updated Annual Funding Source, Natural Gas

2020 Updated Natural Gas Funding ($)			
Source	**Liberty**	**Northern**	**Total**
LDAC	9,461,864	2,356,687	11,844,209
Carry Forward and Interest	(259,505)	232,870	
Total	9,202,359	2,589,557	11,791,916

1.7 Annual Program Budgets

Table 1-13: Annual Electric Budget, by Utility

Company	Original 2020 Electric Budget	Updated 2020 Electric Budget	Difference	Percentage of Total 2020 Updated Budget
Eversource	46,633,173	47,507,758	874,585	72%
Liberty	5,267,431	6,064,297	796,866	9%
NHEC	4,023,037	4,375,805	352,768	7%
Unitil Electric	6,656,470	7,743,573	1,087,103	12%
Total	62,580,111	65,691,434	3,111,323	100%

Figure 1-2: Electric Budget, by Sector

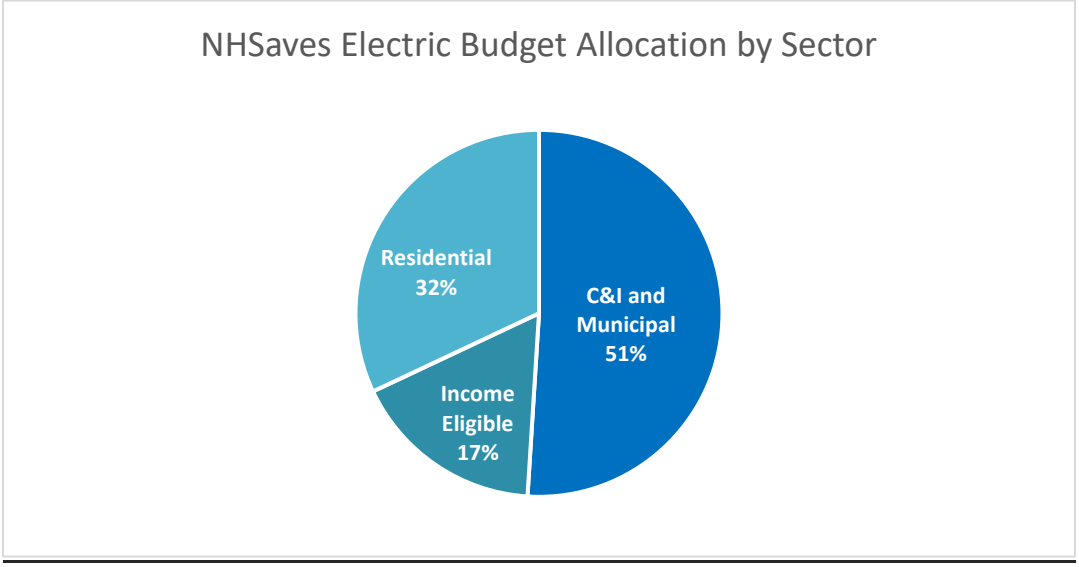
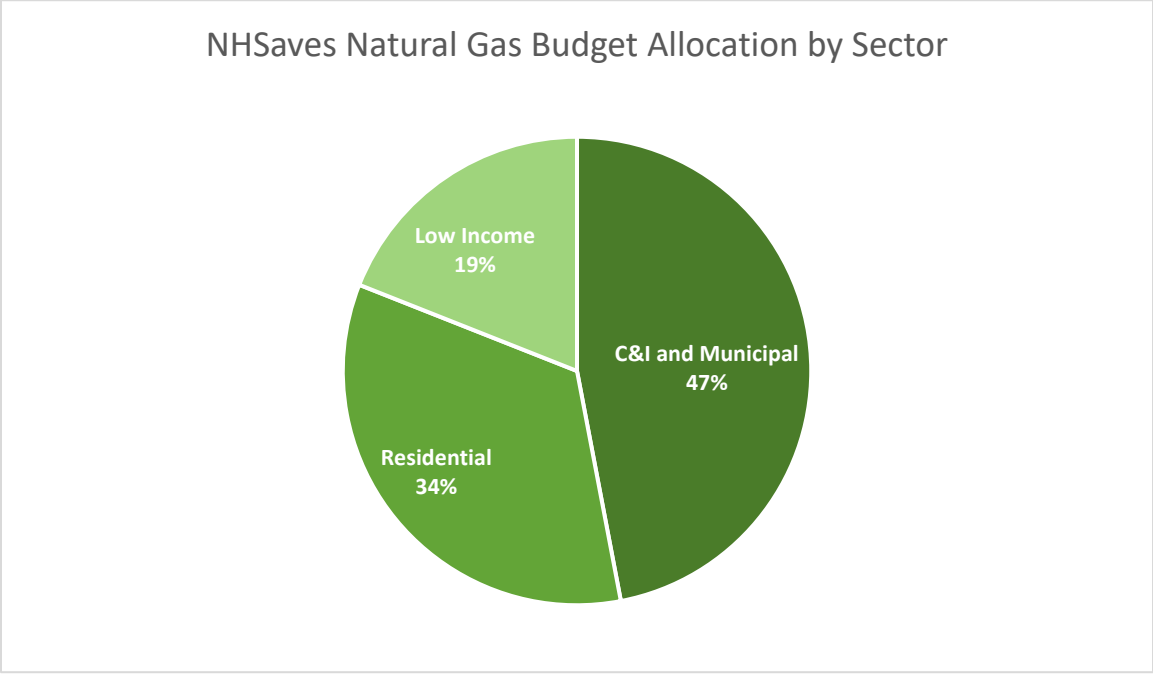


Table 1-14: Annual Natural Gas Budget, by Utility

Company	Original 2020 Natural Gas Budget	Updated 2020 Natural Gas Budget	Difference	Percentage of Updated 2020 Budget
Liberty	8,489,392	8,722,615	233,223	78%
Unitil Gas	2,412,824	2,429,357	16,533	22%
Total	10,902,216	11,151,972	249,756	100%

Figure 1-3: Natural Gas Budget, by Sector



Budget allocations by sector are informed by the source of the funds, and each utility's forecasted delivery sales to each customer sector. The Home Energy Assistance (income-eligible) program budget is not less than 17 percent of each utility's total portfolio budget, exclusive of any unspent income-eligible program funds from 2018.

Chapter 2: Energy Efficiency Program Changes

The 2020 Update provides an overview of adjustments and changes the NH Utilities' plan to implement during the 2020 program year that were not included in the original 2018-2020 Plan or the subsequent 2019 Update plan. Any program plans or information detailed in the 2018-2020 Plan, or the subsequent 2019 Update plan, that are not referenced in this 2020 Update remain as approved by the Commission.

2.1 NHSaves Residential Program Changes

2.1.1 Residential Programs

The NHSaves Residential programs are designed to offer energy efficiency opportunities for a wide variety of customers and needs. They include the income eligible Home Energy Assistance ("HEA") program, the Home Performance with ENERGY STAR ("HPwES") weatherization program, the new construction ENERGY STAR Homes program, the ENERGY STAR Products program, the behavior-based Home Energy Reports program and, for Eversource, the Customer Engagement Platform. The program design for the residential programs remains as described in the 2018-2020 Plan and 2019 Update, with the following exceptions or enhancements.

2.1.2 Home Energy Assistance

2.1.2.1 HEA Carry-Over

In 2020, the NH Utilities have included Home Energy Assistance program dollars that were unspent in the 2018 program year in their 2020 HEA budgets. Table 2-1 details these carry-over amounts by utility.

Table 2-1: Carry-Over Budgets for HEA Program, by Utility

Company	Carry-Over from 2018 HEA Program Budget
Eversource	-
Liberty Utilities	217,252
Unitil Electric	44,244
NHEC	51,929
Liberty Utilities Gas	233,223
Unitil Gas	-

2.1.3 Home Performance with ENERGY STAR

The HPwES program design remains as described in the 2018-2020 Plan and 2019 Update.

2.1.4 ENERGY STAR Homes

On July 17, 2019, Governor Sununu signed House Bill 562[7] into law. HB 562 updates the state's building code to reflect the 2015 editions of the International Building Code, including the International Energy Conservation Code, with amendments. The new State Building Code will go into effect on September 15, 2019[8], resulting in a change to certain new construction baselines for NHSaves programs beginning in 2020. The NH Utilities are reviewing the changes to energy code and will align the ENERGY STAR Homes User Defined Reference Home (UDRH) to reflect the new minimum standards.

In 2019, the NH Utilities received their 7th consecutive Partner of the Year: Sustained Excellence Award from the U.S. Environmental Protection Agency ("EPA") for the ENERGY STAR Homes program's success and its net zero energy homes challenge. The New Hampshire Utilities are also proud to report that for the 3rd year in a row, Chinburg Properties of Newmarket for New

[7] New Hampshire Department of Safety. State Building Code Review Board. Available at: https://www.nh.gov/safety/boardsandcommissions/bldgcode/documents/hb562-relative-to-the-state-building-code.pdf.

[8] House Bill 562. *An Act Relative to the State Building Code*. May 15, 2019. Available at: https://www.nh.gov/safety/boardsandcommissions/bldgcode/index.html.

Home Builders received EPA's Partner of the Year: Sustained Excellence and GDS Associates received EPA's Partner of the Year award for Home Energy Raters.

In July 2019, the NH Utilities hosted the NHSaves Drive to Net Zero competition for the second year. The competition seeks to identify, encourage, and promote building contractors to build high-efficiency, net zero energy homes. The NH Utilities will continue to build upon initial success in highlighting the benefits of highest-efficiency residential construction in 2020 and beyond, including promotion of the third annual Drive to Net Zero competition.

2.1.5 ENERGY STAR Products

For the 2020 Plan Update, the NH Utilities continue to stay apprised of changes associated with the federal enforcement and implementation of the US Energy Independence and Security Act of 2007[9] ("EISA"), specifically the increased efficiency standards for light bulbs that were slated to begin on January 1, 2020. On September 4, 2019, DOE issued a final ruling[10] that would roll back efficiency standards on a major group of bulb types. This rule will prevent higher standards from taking effect in 2020. Additional bulbs, including standard A-lamps may also see a roll back based on a pending determination from DOE[11]. While this is a setback for efficiency standards, NHSaves and other efficiency programs will continue their efforts to encourage market transformation through rebates and incentives to customers who purchase high efficiency lighting. In 2020, the NH Utilities will monitor developments, and adjust program designs, measure offerings, and incentive strategies as appropriate.

[9] Public Law 110-40. *Energy Independence and Security Act of 2007*. Dec. 19, 2007.

[10] Office of Energy Efficiency and Renewable Energy, Department of Energy (2019, September 5). "Energy Conservation Program: Definition for General Service Lamps." Retrieved from https://www.federalregister.gov/documents/2019/09/05/2019-18940/energy-conservation-program-definition-for-general-service-lamps

[11] Office of Energy Efficiency and Renewable Energy, Department of Energy (2019, September 5). "Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps Retrieved from https://www.federalregister.gov/documents/2019/09/05/2019-18941/energy-conservation-program-energy-conservation-standards-for-general-service-incandescent-lamps

2.1.6 Home Energy Reports

For the 2020 program year, Eversource will maintain the current program level of 80,000 customers rather than expanding to 190,000 as originally planned. In addition to exploring ways that customized usage insights from the Customer Engagement Platform (see Section 2.1.7) can be better integrated into behavioral program communications, Eversource is starting to work on an HER redesign. The redesigned program will provide more variety in how usage information is presented to customers and allow for incorporation of behavioral science techniques beyond normative comparison. Reserving a large group of customers who have never received HERs is essential so that the true impact of the report modifications can be observed.

2.1.7 Customer Engagement Platform

The Energy Savings Plan ("ESP") and Energy Analysis Tool, or Customer Engagement Platform ("CEP"), is an interactive online tool launched in 2015 to provide engaging information and increase residential, C&I, and municipal customer participation in energy efficiency across all Eversource's operating companies in Connecticut, Massachusetts, and New Hampshire.

For the 2020 program year, the CEP is scheduled for a number of continued enhancements, including continued integration with Eversource's Home Energy Reports program (see Section 2.1.6). These enhancements will allow Eversource to identify customers for targeted promotional efforts. Eversource will continue to use email and other digital advertising methods (social media, paid search and display ads) to promote the Energy Savings Plan to customers. The Company has also utilized ESP launch points via the Eversource.com home page to increase visibility and continue to grow the number of customers accessing the CEP.

2.1.8 Residential Program Budgets and Goals

Annual Home Energy Assistance Program	2020 Original	2020 Update
Electric		
Budget (Including 2018 Carry-Over)	10,638,618	11,406,641
kWh savings	1,384,231	1,374,398
% of Portfolio Budget	17%	17.4%
kW reduction	199	192
MMBtu savings	35,271	36,989
Electric participants	1,377	1,752
Natural gas		
Budget	1,853,441	2,089,441
MMBtu savings	10,283	10,597
% of Portfolio Budget	17%	18.7%
Gas participants	360	372
Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units		

Table 2-3: HPwES Program Energy Savings and Budget

Annual Home Performance with ENERGY STAR	2020 Original	2020 Update
Electric		
Budget	7,620,866	8,664,759
kWh savings	1,181,165	1,610,069
kW reduction	219	295
MMBtu savings	58,255	71,470
Electric participants	1,992	2,806
Natural gas		
Budget	1,141,609	1,155,804
MMBtu savings	10,157	13,513
Gas participants	647	703
Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units		

Table 2-4: ENERGY STAR Homes Program Energy Savings and Budget

Annual ENERGY STAR Homes	2020 Original	2020 Update
Electric		
Budget	3,824,769	3,618,372
kWh savings	1,794,275	1,562,336
kW reduction	387	342
MMBtu savings	18,765	16,473
Electric participants	1,378	1,007
Natural gas		
Budget	473,878	1,087,876
MMBtu savings	3,559	14,231
Gas participants	130	455

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

Table 2-5: ENERGY STAR Products Program Energy Savings and Budget

Annual ENERGY STAR Products Program	2020 Original	2020 Update
Electric		
Budget	5,899,396	7,195,067
kWh savings	12,547,235	15,863,186
kW reduction	1,643	2,157
MMBtu savings	4,582	4,903
Electric participants	216,056	246,992
Natural gas		
Budget	1,594,176	1,214,683
MMBtu savings	20,478	16,988
Gas participants	2,506	2,825

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

Table 2-6: Home Energy Reports Program Energy Savings and Budget

Annual Home Energy Reports	2020 Original	2020 Update
Electric		
Budget	1,937,632	1,096,280
kWh savings	12,952,358	4,920,050
kW reduction	1,107	398
MMBtu savings	0	0
Electric participants	232,000	112,956
Natural gas		
Budget	380,295	356,201
MMBtu savings	10,670	9,372
Gas participants	48,000	36,694

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

2.2 NHSaves C&I Program Changes

2.2.1 Large Business, Small Business, and Municipal Programs

The NHSaves C&I programs—Large Business Energy Solutions, Small Business Energy Solutions, and Municipal Energy Solutions—all provide C&I customers with custom incentives (based on specific site conditions) as well as deemed and prescriptive incentives (applied based on average costs and savings for efficiency equipment). The NHSaves programs' custom and prescriptive incentives reduce the higher, up-front costs customers would otherwise face when purchasing high-efficiency equipment for new construction and retrofit projects. The program design of the Large Business Energy Solutions, Small Business Energy Solutions, Municipal Energy Solutions Program and the Eversource Energy Rewards Request for Proposals ("RFP") programs remain as described in the 2018-2020 Plan, with the enhancements described below.

2.2.2 Point of Sale Distributor Relationships

In 2020, the NH Utilities will expand their Point of Sale (also referred to as Midstream) Distributor Relationships to include additional eligible measures and rebate offerings. These additional measures will include: electric HVAC equipment (e.g. heat pumps and unitary air

conditioners), electric commercial kitchen equipment (e.g., dishwashers and ice machines), and for Eversource and Unitil, point of sale lighting. These rebates will be offered through the Large Business Energy Solutions, Small Business Energy Solutions, and Municipal Energy Solutions programs in coordination with energy efficiency program administrators and utilities in Connecticut and Massachusetts, which will help to maximize cost-effectiveness and transform regional markets.

2.2.4 C&I Program Budget and Goals

Table 2-8: Large Business Energy Solutions—Program Energy Savings and Budget

Annual Large Business Energy Solutions	2020 Original	2020 Update
Electric		
Budget	16,454,849	17,750,264
kWh savings	71,820,033	75,364,424
kW reduction	7,879	8,080
Electric participants	970	1,679
Natural gas		
Budget	3,086,692	2,931,069
MMBtu savings	80,214	84,190
Gas participants	202	185

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

Table 2-9: Small Business Energy Solutions—Program Energy Savings and Budget

Annual Small Business Energy Solutions	2020 Original	2020 Update
Electric		
Budget	10,599,286	10,050,682
kWh savings	28,436,366	29,231,584
kW reduction	4,005	3,098
Electric participants	1,442	1,814
Natural gas		
Budget	2,265,611	2,210,387
MMBtu savings	51,811	38,885
Gas participants	1,288	1,191

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

Table 2-10: Municipal Energy Solutions—Program Energy Savings and Budget

Annual Municipal Energy Solutions	2020 Original	2020 Update
Electric		
Budget	2,000,000	2,043,245
kWh savings	4,114,659	4,305,763
kW reduction	319	202
MMBtu savings	3,876	3,718
Electric participants	131	106

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

Table 2-11: RFP Program

Annual Energy Rewards RFP Program	2020 Original	2020 Update
Electric		
Budget	1,837,304	1,482,952
kWh savings	5,948,560	5,948,560
kW reduction	1,010	1,010
Electric participants	68	68

Note: kWh = kilowatt-hours; kW = kilowatt, reflecting reduction during ISO-NE summer on-peak hours; MMBtu = million British thermal units

2.3 NHSaves Peak Demand Reduction

2.3.1 Overview

In addition to achieving significant reductions in demand for electricity (kWh) as part of the EERS goals, the energy efficiency programs also result in significant reductions in demand, or connected load (kW), during both off-peak and on-peak hours.

Peak demand reductions from standard energy efficiency measures are typically referred to as "passive" demand reductions, given that they are achieved as a result of higher efficiency equipment that is primarily intended to reduce demand across many hours, including peak periods. "Active" demand reduction measures, in contrast, reduce demand at specific times when called upon. For the 2020 program year, the NHSaves Residential and C&I programs are expected to result in passive demand reductions of 15.7 MW during the ISO-NE summer on-peak hours and 18.9 MW during the ISO-NE winter on-peak hours.[12] Eversource and Unitil Electric's C&I and Residential Active Demand Reduction Initiatives are projected to result in an additional 10.7 MW reduction during the ISO-NE summer peak. However, this active demand

[12] ISO-NE defines summer on-peak hours as nonholiday weekdays, 1:00 p.m. to 5:00 p.m., during June, July, and August, and winter on-peak hours as nonholiday weekdays, 5:00 p.m. to 7:00 p.m., during December and January.

reduction is not included in the calculation of total kW savings or associated benefits and will be tracked separately.

2.3.2 2020 Active Demand Reduction Activity in New Hampshire

2.3.2.1 C&I Active Demand Reduction Initiative

In 2019, Eversource and Unitil launched an active demand demonstration program—the C&I Demand Reduction Initiative. The development and implementation of the C&I Demand Reduction Initiative was based on recently evaluated C&I active demand reduction demonstration efforts conducted in Connecticut, Massachusetts, and Rhode Island. Based on the success of these regional demonstration efforts, the NH 2019 C&I Demand Reduction Initiative is offering incentives to enrolled C&I customers to reduce their demand at identified critical peak times. Additional details regarding the program design can be found in the filing made by Eversource and Unitil on January 28, 2019, which was approved by the Commission in Order No. 26,232.

In 2020, Eversource and Unitil Electric will continue to offer the C&I Demand Reduction Initiative to their C&I electric customers. As of this filing, Eversource has enrolled customers providing 5.9 MW in active demand reduction out of a goal of 5 MW. Unitil has enrolled customers providing 1.64 MW out of a goal of 1.8 MW. Together, Eversource and Unitil called on C&I customers to curtail several times over the summer, usually curtailing load between the hours of 3-6 PM or 4-7 PM. The intent of this program was to reduce load during the ISO-NE System Peak. At the time of this filing customers who participated in a curtailment on July 30th reduced their peak load, and also reduced both the NH peak and the ISO-NE Peak, which occurred on that day. The Companies look forward to compiling the results of the first summer of activity in the fourth quarter of 2019.

2.3.2.2 Bring Your Own Device (BYOD) Residential Demand Reduction Initiative

As an expansion to the C&I Demand Reduction Initiative, Eversource and Unitil will offer a Residential Demand Reduction Initiative in 2020. The offering will be targeted to customers who enroll their own wi-fi thermostats or behind-the-meter battery in the program. The BYOD

design will enable Eversource and Unitil to pay an incentive for verifiable load reductions using a customer-owned behind-the-meter device. In this model, Eversource and Unitil would have a signal sent by its vendor to the device manufacturer or customer, and the device manufacturer or customer will then send a signal to each enrolled energy-using device to temporarily change their normal operations, resulting in load reductions during summer peak periods. Eversource and Unitil would then pay an incentive based on a customer's performance.

Eversource and Unitil expect a typical customer offering under the BYOD Program would be as follows: for a customer with an existing wi-fi thermostat and central cooling, Eversource or Unitil would offer the customer between $25 and $45 sign-up incentive and an annual incentive for participating ranging from $20 and $25 for allowing the Companies to increase the customer's thermostat set point by up to 4 degrees for 3 hours at a time, multiple times per year during summer peak periods.

Similarly, the Companies would pay an incentive to a customer with an installed residential battery storage system that allows the Company or its vendor to dispatch that battery some number of hours per year. A typical example would be as follows: a customer installs a 4 kW battery storage system and allows Eversource to dispatch the system multiple times over the summer. Customers who agree to allow daily dispatch of their battery throughout the summer would be provided a rebate by the utility of for example, between $225 and $350 annual kW. In the example of a 4 kW battery storage system, the customer would earn between $900 and $1400 for the season if it participated in every dispatch event. Typically, there are variations in the incentive level depending on how often the battery is controlled by the utility.

The Companies would consider integrating other devices that customers may already have in their homes and that could connect to a central dispatching platform. The level of incentive would be based on how frequently these devices could be dispatched and the level of load reduction the device could provide.

2.3.2.3 Unitil Bring Your Own Device (BYOD) C&I Demand Reduction Initiative

Unitil will include an incentive to C&I customers for average program year reduction in kW for customers thermal (ice) storage or battery storage systems.

2.3.2.4 Active Demand Benefit Cost Model

The NH Utilities have retained the services of Synapse to develop a NH-specific benefit-cost model for active demand offerings. This model will be delivered in the fourth quarter of 2019 and will be used for reporting on active demand offerings in both 2019 and 2020. Eversource and Unitil have included the measures for the demand reduction initiatives in the existing energy efficiency benefit cost model, but only in order to reflect the quantity and cost of the measures. Neither savings (kW) nor benefits (in dollars) are included in the plan, nor will they be included in portfolio reports. However, the utilities will provide updates for informational purposes on the progress of the initiative.

Chapter 3: Marketing

In April 2019, the final report was issued for the NHSaves Market Assessment study. The goals of the study were to:

- Assess overall knowledge and awareness of energy efficiency;
- Establish a benchmark awareness of the utilities statewide program brand, NHSaves;
- Identify the means for most effectively communicating with customers and different customer segments;
- Develop a deeper understanding of the drivers of energy efficiency participation and the barriers that impede or prevent participation; and
- Identify general attitudes, perceptions, and behaviors concerning energy efficiency.

Results indicate that NHSaves brand awareness is relatively high among both residential and small business customers. Customers who are aware of NHSaves have heard of the brand through a variety of channels and are generally aware that programs are designed to help them save energy in their homes. However, many customers do not fully understand the opportunities available to them under the NHSaves programs, which is identified as a barrier to participation. The residential customers outlined in the final report were divided into segments, that provide immediate opportunities for NHSaves engagement.

In 2020, the NH Utilities will continue to implement the marketing plan as described in the 2018-2020 plan, while leveraging the Market Assessment study insights to increase engagement and participation in the programs. Intended to serve as a baseline of NHSaves program awareness under the EERS, the Market Assessment conducted last year will be followed-up by a second study to gauge changes in the baseline values and the evolution of customer engagement, attitudes and motivational values as the NHSaves brand and the programs it represents continue to grow and mature.

Chapter 4: NHSaves Financing

4.1 Residential Financing

The on-bill and third-party financing options outlined in the 2018-2020 Plan and the 2019 Update will continue in 2020, including zero percent on-bill offerings for both electric and natural gas customers, two percent loans offered in partnership with local lenders and zero percent moderate income loans, also in partnership with local lenders.

Unitil will raise the maximum amount of its residential on-bill loans to $7,500 for both gas and electric customers. In addition, Unitil gas and electric will raise the maximum amount of on-bill loans for moderate income customers to $15,000, dependent upon availability of funds. These changes will be reflected in a tariff filing. As described in section 1.6, Unitil is adding $75,000 to the initial $30,000 it dedicated in 2019 to on-bill financing for residential gas customers.

NHEC will add $100,000 to its existing residential on-bill loan program utilizing carry forward funds from 2018.

4.2 C&I and Municipal Financing

Eversource expanded its small business commercial financing program in 2019 to include a zero percent, on-bill financing option that will continue into 2020. Eversource will continue to offer Smart Start to its municipal customers.

Liberty and Unitil will continue to offer their on-bill financing options to commercial electric and gas customers in 2020. In order to expand upon the $53,000 in funding set aside in 2019 for this customer sector, Unitil Gas is dedicating an additional $150,000 in 2020.

NHEC will utilize $150,000 of its 2018 carry forward funds to introduce a zero percent on-bill financing offering for small to medium businesses, which is designed to address the upfront cost barrier to participation.

4.2.1 NHEC Smart Start

NHEC has been implementing Smart Start (Formerly PAYS) since 2002. The program was initially designed to explore and test certain barriers to consumer investment in energy efficiency measures. Specifically identified barriers include: lack of resources or competing demands for available funds and high first cost of measures; lack of information about available technologies; uncertainty about continued occupancy at a location, and; the split incentive, when measures are purchased by someone other than the end user, such as a landlord.

NHEC offers the program to all of its commercial and municipal members in conjunction with the NHSaves Energy Efficiency programs. Under the program, NHEC pays all of the costs associated with the purchase and installation of the approved measures. A Smart Start Delivery Charge, calculated to be less than the estimated monthly savings, is added to the member's monthly electric bill until all costs are repaid. Loan funding is provided by NHEC.

Under current design a member undertaking an efficiency project and requesting Smart Start financing may or may not be eligible for an incentive from the commercial energy efficiency programs. NHEC utilizes a minimum incentive approach and computes a custom incentive calculation for every proposed Smart Start project as follows:

A. Every commercial project is evaluated as both a standard program and a Smart Start project and the member is presented with two options. The first is either the prescriptive or custom incentives offered through the relevant efficiency program. The second is the Smart Start offer, and may or may not include an incentive, depending on the following:
    a. If the Smart Start calculation yields a term of 60 months or less, no incentive is offered in conjunction with Smart Start.
    b. If the Smart Start calculation yields a term of 61 months or greater, the available incentive amount for that particular project is used to buy down the term of the project to 60 months.

c. If after using 100% of the available incentive amount for that particular project the term exceeds 60 months the term is extended, but not to exceed three quarters of the life of the measure or 120 months.

From a program implementation standpoint, this approach complicates program delivery as it can be difficult to market and explain to members and contractors, thus creating a significant barrier to participation. With the standard energy efficiency program offerings, incentives are published and members can readily determine what to expect when installing any given measure. In addition, incentive levels affect payback rates, which is a key factor that directly influences whether or not a project will go forward. When faced with a choice, the member will usually opt for the incentive in lieu of the financing, or the project may not move forward at all.

NHEC is proposing to eliminate the minimum incentive calculation requirement for Smart Start in 2020. Instead, members considering efficiency upgrades will be offered both the applicable program incentive and the Smart Start financing option to assist with their co-pay. This change will make the Smart Start offering consistent with the other financing options that NHEC offers for residential and commercial members and more closely aligns with the Eversource offering. NHEC is not proposing any changes to other Smart Start elements at this time.

4.2.2 Online Competitive Loan Platform

In 2019 the National Energy Improvement Fund ("NEIF") presented its online competitive loan platform to the NH Utilities and Financing and Funding Working Group. The platform allows energy efficiency installation contractors to present a variety of financing options at the point of sale with the customer. By entering the project information into the platform, the contractor can match the project with lenders that could satisfy the lending needs of the customer. The customer can then explore an initial analysis of cashflow and paybacks that they can then use to choose a loan option.

Eversource began offering the NEIF Commercial Energy Financing Platform to customers in 2019. In 2020, the NH Utilities will discuss the platform again based on the experience of Eversource and determine whether to incorporate it into future financing offerings.

Chapter 5: Planning Elements

5.1 Benefit-Cost Testing

Over the past year and a half, the Benefit-Cost Working Group has undertaken a significant and substantive review of the method for testing the costs and benefits associated with the NH Energy Efficiency programs, and the recommendations resulting from that work are expected to be applied in 2021. For the coming 2020 program year, the NH Utilities will continue to utilize a modified total resource cost ("TRC") test per historical practice.

For 2020, the NH Utilities have adjusted the nominal discount rate to 5.5 percent and the general inflation rate to 1.9 percent, resulting in a real discount rate of 3.5 percent used for net present value benefit calculations.[13]

Per the Commission's Order 26,207 issued December 31, 2018 approving the settlement agreement for the NH Utilities 2019 Update Plan for energy efficiency programs, no other material adjustments have been made to the calculation of avoided costs for the 2020 update. The *Avoided Energy Supply Components in New England: 2018 Report* ("AESC 2018") remains the source in the 2020 Update for avoided costs associated with electricity, natural gas, other fossil fuels, and wood as well as Demand Reduction Induced Price Effect ("DRIPE") and avoided costs of transmission.

Non-energy impacts ("NEIs") have been incorporated into the 2020 Plan per the settlement agreement to the 2019 Update Plan, and subsequent Commission Order. Namely, a benefits adder has been applied to all programs equal to 10 percent of all resource benefits associated with that program. For income eligible programs, an additional 10 percent adder has been applied, for a total of 20 percent.

[13] Based on the June 2019 Prime Rate in accordance with the Final Energy Efficiency Group Report, dated July 6, 1999 in DR 96-150. Retrieved from http://www.moneycafe.com/personal-finance/prime-rate/ on August 15, 2019.

The NH Utilities strive to ensure each individual program exceeds a benefit-cost ratio of 1.0, with exceptions for income-eligible, education or start-up programs such as the initial years of a new program. For each company, the portfolio as a whole is designed to meet a benefit cost ratio of 1.0 or greater.

5.2 Performance Incentive ("PI")

After significant deliberation over the course of 18 months, the PI Working Group (described below), unanimously recommended a modified PI Framework to be adopted for the 2020 Update Plan. This framework, and the process by which it was developed, is described in detail in the accompanying report of the PI Working Group (Attachment M).

In brief, the revised framework includes incentives for the achievement not only of lifetime kWh and natural gas MMBtus and benefit-cost, but for annual energy reductions, net benefits, and summer and winter passive demand reductions from electric programs. The minimum threshold for the achievement of PI has been increased, and the focus of achievement has been shifted from the sector level to the portfolio level.

In addition to the report itself, each Utility's proposed Performance Incentive is included in their accompanying Cost Effectiveness Attachments (Attachments E1, F1, G1, H1, I1, and J1).

Because the new PI Framework considers additional elements and inputs not previously considered, the Cost Effectiveness Pages have been slightly amended to display Total Resource Benefits, an input into the new PI formula. Additionally, pages 4 and 5 from the 2018 and 2019 Cost Effectiveness Attachments have been removed from the filing given that the planned lifetime kWh (for electric programs), lifetime MMBtu (for gas programs), and benefit-cost ratios can all be found on the Cost-Effectiveness Attachments.

5.3 DE 17-136 Working Groups

With the discontinuation of the LBR Working Group (see settlement to the 2019 Update Plan, pages 10-11), the three remaining Working Groups established during settlement of the 2018-2020 EERS Plan continued their activity in 2019 and made significant progress.

5.3.1 Performance Incentive Working Group

The PI Working Group was tasked with reviewing potential performance incentive methodologies with the goal of promoting achievement of New Hampshire's EERS goals and making recommendations for implementation in the 2020 Update. The outcome of this working group's efforts is described in section 5.2 as well as in Attachment M and is reflected in the NH Utilities' attachments to their 2020 Update filing.

With the issuance of the final report, the PI Working Group's responsibilities are complete. Any additional consideration of issues related to performance incentives will become part of the preparatory work for the 2021-2023 EERS Plan.

5.3.2 Funding and Financing ("FF") Working Group

The Funding and Financing Working Group has met quarterly since the beginning of 2019, to receive updates and information related to the financing offerings that were outlined in the 2019 Update. All of the identified offerings are moving forward. On-bill offerings for both residential and commercial customers have expanded. The first contracts for a third-party moderate income offering are in place. Additional partnerships for third party commercial loans have been discussed and are starting to be explored. The consultants for the NHSaves Partnership Initiative have been selected and are about to begin work.

At the July 18, 2019 Working Group meeting the members agreed that future updates on funding and financing will be addressed at the DE 17-136 quarterly meetings.

5.3.3 Benefit/Cost ("BC") Working Group

The BC Working Group convened nearly monthly during 2018 and 2019 to discuss and consider issues related to New Hampshire's Benefit/Cost test as well as results from the 2018 Avoided Energy Supply Components study. Specifically, it worked in conjunction with the permanent EM&V Working Group to serve as technical lead in the development of two research studies: a review of Energy Optimization and a review of New Hampshire's benefit-cost testing practices based on the National Standard Practice Manual framework.

The BC Working Group anticipates issuing a summary report for the Commission's consideration accompanied by the final reports from these two studies in October of 2019 (see EM&V Section of the Plan for additional details).

After the issuance of the final report in the fall of 2019, the BC Working Group's responsibilities will be complete. Additional consideration of issues related to benefit cost testing, energy optimization, beneficial electrification and avoided costs will become part of the preparatory work for the 2021-2023 EERS Plan.

Chapter 6: Evaluation, Measurement and Verification

Evaluation, Measurement and Verification ("EM&V") has been an integral component of the efficiency programs in New Hampshire since their inception. EM&V has many objectives, including verifying portfolio energy savings, estimating future energy savings of specific measures and behaviors, and identifying ways to improve program delivery and results. The 2018-2020 Plan established a formalized NH EM&V Working Group, consisting of Commission Staff members, independent EM&V consultants hired and supervised by the Commission, representatives of the NH Utilities, and a representative of the NH EESE Board.

As agreed by the settling parties for the 2018-2020 Plan, the EM&V Working Group has worked expeditiously to build upon ongoing evaluation work and expand the portfolio of NH evaluation activities to a level commensurate with the size and scope of the NHSaves programs. The NH Utilities, in coordination with the EM&V Working Group, have also sought to make the most effective use of NH evaluation resources by leveraging the efforts of neighboring jurisdictions—both by collaborating with other states to conduct joint evaluations, and by adopting results from other states' evaluations where appropriate.

All completed NH evaluations are posted at https://puc.nh.gov/Electric/Monitoring_Evaluation_Report_List.htm, and EM&V Working Group agendas, a recommendations tracking spreadsheet, and the NH Strategic Evaluation Plan are posted at https://www.puc.nh.gov/EESE%20Board/EERS_Working_Groups.html#em&v.

6.1 Evaluations Completed in 2019

Table 6-1 lists the evaluations completed or expected to be completed in 2019.

Table 6-1: 2019 Evaluations

Evaluation	Vendor	Completion Date
Energy Efficiency Market Assessment	Navigant	April 10, 2019
C&I Non-Lighting Impact and Process Evaluation (Small Business, Municipal, and RGGI Retail and Large Business programs)	Cadmus Group	Draft report, July 14, 2019 Final report, Q3 2019 (est.)
Home Performance with ENERGY STAR Impact and Process Evaluation	Opinion Dynamics Corporation	Impact evaluation memo, July 31, 2019 Full report, Q4 2019 (est.)
Energy Optimization through Fuel Switching *(joint with the BCBC Working Group)*	Navigant	Q3 2019 (est.)
National Standard Practice Manual Cost-Effectiveness Review *(joint with the BCBC Working Group)*	Synapse Energy Economics, Inc.	Q3 2019 (est.)
Home Energy Assistance Impact, Process, and Low-Income NEI Evaluation	Opinion Dynamics Corporation	Q4 2019 (est.)
Crosscutting Non-Energy Impacts Study	DNV-GL	Q4 2019 (est.)

6.1.1 Updates to 2020 Plan Based on EM&V Results

Based on the results from the HPwES impact evaluation memorandum and input from EM&V Working Group members, the NH utilities have updated planned savings for the HPwES program. The changes result in a slight increase in planned savings per project, driven by updated engineering algorithms; updated New Hampshire climatic heating and cooling degree day data for weather sensitive measures; the addition of cooling savings for insulation measures; and the application of New Hampshire-specific fuel mixes and heating equipment mixes based on participant survey results and U.S. Energy Information Administration data

6.2 Ongoing Evaluations

Table 6-2 lists the ongoing evaluations planned for completion in 2020.

Table 6-2: Ongoing Evaluations

Evaluation	Vendor	Completion Date
Bill and Rate Impact Analysis	Synapse Energy Economics, Inc.	Q2 2020 (est.)
Energy Efficiency Potential Study	Dunsky Energy Consulting	Q2 2020 (est.)
Cross-State C&I Demand Response Evaluation *(joint with Massachusetts and Connecticut)*	Energy & Resource Solutions	Q3 2020 (est.)

In an effort to make the most effective use of NH evaluation resources, Eversource and Unitil have joined with counterparts in MA and CT on a regional evaluation of C&I demand response programs. Due to the nearly identical implementation of these programs across the multi-state service territories of Eversource and Unitil, they are particularly well-suited for a cross-state evaluation approach. This approach should allow for higher quality results at a lower cost than would be possible through a study limited to NH participants and evaluation funding. This approach builds on similar cross-state studies NH has joined in recent years, including an impact evaluation of 2016 Small Business and Municipal Lighting projects, joint with Massachusetts, and the 2014 Northeast Residential Lighting Hours-of-Use Study.[14]

In addition to the ongoing evaluations listed above, the NH utilities, in coordination with the EM&V Working Group, have begun developing the NH Technical Reference Manual (TRM), which will provide detailed, comprehensive documentation of savings calculations and

[14]DNV-GL, Impact Evaluation of 2016 New Hampshire Commercial & Industrial Small Business and Municipal Lighting, June 21, 2018; NMR, Northeast Residential Lighting Hours-of-Use Study, May 5, 2014

assumptions for measures offered under the NHSaves programs. This work will result in a public-facing, electronic TRM in 2020.

Moving into 2020, the Commission's EM&V consultants will be updating the NH Strategic Evaluation Plan ("SEP") in conjunction with the EM&V Working Group. The SEP which will provide a prioritized and annotated list of evaluation activities to guide the EM&V Working Group over the next several years. These activities will include impact and process evaluations—including a Large Business evaluation—as well as a NHSaves Market Assessment and other activities needed to ensure the NHSaves programs continue to produce verified, accurate savings.

Attachment A: Summary of Material Changes

Topic	Description of Change
Program Design Changes	
Home Energy Reports	▪ Eversource will maintain the customer program level of 80,000 customers rather than expanding to 190,000.
Commercial, Industrial and Municipal Programs	▪ The NH Utilities will expand their Point of Sale Distributer relationships to include additional eligible measures such as lighting, electric HVAC equipment and electric commercial kitchen equipment.
Demand Reduction	▪ Eversource and Unitil will continue the C&I Active Demand Reduction Initiative, adding a Bring Your Own Device option for Unitil. ▪ Eversource and Unitil will offer a Residential Demand Reduction Initiative.
Changes in Savings Assumptions	
Home Performance with ENERGY STAR	▪ Updated In-Service Rates, annual kWh savings, and fuel savings for weatherization measures based on HPwES Opinion Dynamics Interim Impact Evaluation Results.
ENERGY STAR Products	▪ Updated kWh Realization Rate, annual kWh savings, kW savings, and Load Shape for Circulator Pumps purchased at distributors based on the *CT HVAC and Water Heater Process and Impact Evaluation and CT Heat Pump Water Heater Impact Evaluation*
Home Energy Reports	▪ Updated annual kWh savings forecast based on recent 2019 performance.

Topic	Description of Change
Other Changes	
Performance Incentive Calculation	▪ Updated calculation of the Performance Incentive based off the Performance Incentive Working Group report.
Avoided Cost Assumptions	▪ Updated the Nominal Discount Rate to the June 2019 Prime Rate. ▪ Updated the Inflation Rate based on the inflation rate from Q1 2018 to Q1 2019.

NHSAVES PROGRAMS
2020 Statewide Goals
Statewide & Company-Specific Programs

Description	Program Budget[1]	kWh Savings		kW Savings		MMBtu Savings		Customers
		Annual	Lifetime	Winter kW	Summer kW	Annual	Lifetime	Count
Electric Utilities								
Statewide Programs [3]	$ 58,685,785	125,005,997	1,598,783,025	16,968	14,164	129,835	2,582,375	256,049
Municipal Program	$ 2,043,245	4,305,763	60,877,406	648	202	3,718	55,534	106
All Other Statewide Programs								
Sub-total	$ 60,729,030	129,311,759	1,659,660,430	17,616	14,366	133,553	2,637,909	256,154
Company Specific Programs[2]	$ 4,962,403	10,868,611	86,772,214	1,367	1,408	-	-	114,064
Total Electric	**$ 65,691,434**	**140,180,370**	**1,746,432,644**	**18,983**	**15,774**	**133,553**	**2,637,909**	**370,218**
Gas Utilities								
Statewide Programs	$ 10,689,261	584,792	8,687,060	157	74	178,404	3,000,933	5,732
Company Specific Programs[2]	$ 462,712	-	-			9,372	32,651	36,694
Total Gas	**$ 11,151,972**	**584,792**	**8,687,060**	**157**	**74**	**187,777**	**3,033,584**	**42,426**
Grand Total	**$ 76,843,405**	**140,765,162**	**1,755,119,704**	**19,141**	**15,849**	**321,330**	**5,671,493**	**412,644**

Notes:
(1) Program budgets shown in this report exclude the performance incentive (PI).
(2) Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.
(3) Large Business Energy Solutions Program Budget includes $93,765.00 for the Large Business DR Pilot for Unitil Energy Systems, Inc.

NHSAVES PROGRAMS
2020 Statewide Goals
Statewide Programs [1]

Description	Program Budget	kWh Savings Annual	kWh Savings Lifetime	kW Savings Winter kW	kW Savings Summer kW	MMBtu Savings Annual	MMBtu Savings Lifetime	Customers Count
Electric Utilities								
Residential								
Home Energy Assistance	$ 11,406,641	1,374,398	18,530,413	140.2	192.1	36,988.9	769,506	1,752
NH Home Performance w/Energy Star	$ 8,664,759	1,610,069	22,393,572	224.9	295.4	71,470.2	1,348,068	2,806
EnergyStar® Homes	$ 3,618,372	1,562,336	34,586,587	196.4	342.2	16,473.1	393,865	1,007
EnergyStar® Products	$ 7,195,067	15,863,186	129,885,138	3,856.5	2,156.8	4,902.7	70,937	246,992
Sub-total	$ 30,884,840	20,409,989	205,395,710	4,418.0	2,986.5	129,834.9	2,582,375	252,556
Commercial & Industrial								
Large Business Energy Solutions [2]	$ 17,750,264	75,364,424	1,008,538,271	9,688.2	8,080.3	-	-	1,679
Small Business Energy Solutions	$ 10,050,682	29,231,584	384,849,044	2,861.5	3,097.5	-	-	1,814
Municipal Program	$ 2,043,245	4,305,763	60,877,406	648.3	201.6	3,718.3	55,534	106
Sub-total	$ 29,844,191	108,901,770	1,454,264,720	13,198.0	11,379.4	3,718.3	55,534	3,598
Total Electric	**$ 60,729,030**	**129,311,759**	**1,659,660,430**	**17,616.0**	**14,365.9**	**133,553.2**	**2,637,909**	**256,154**
Gas Utilities								
Residential								
Home Energy Assistance	$ 2,089,441	69,445	1,281,110	30.3	1.0	10,596.9	215,180	372
NH Home Performance w/Energy Star	$ 1,155,804	199,287	1,332,399	40.0	30.8	13,512.6	243,323	703
EnergyStar® Homes	$ 1,087,876	178,605	3,922,898	18.2	42.4	14,230.9	313,148	455
EnergyStar® Products	$ 1,214,683	135,549	2,115,940	68.6	-	16,988.2	292,845	2,825
Sub-total	$ 5,547,805	582,886	8,652,347	157.1	74.2	55,328.6	1,064,495	4,355
Commercial & Industrial								
Large Business Energy Solutions	$ 2,931,069	-	-	-	-	84,190.4	1,317,652	185
Small Business Energy Solutions	$ 2,210,387	1,906	34,713	0.1	-	38,885.4	618,787	1,191
Sub-total	$ 5,141,456	1,906	34,713	0.1	-	123,075.8	1,936,439	1,377
Total Gas	**$ 10,689,261**	**584,792**	**8,687,060**	**157.2**	**74.2**	**178,404.4**	**3,000,933**	**5,732**
Grand Total	**$ 71,418,291**	**129,896,551**	**1,668,347,490**	**17,773.3**	**14,440.1**	**311,957.6**	**5,638,842**	**261,886**

Notes:

(1) Amounts shown above pertain only to the Statewide programs. The amounts pertaining to the Company-Specific programs are shown on Attachment B, page 3.

(2) Large Business Energy Solutions Program Budget includes $93,765.00 for the Large Business DR Pilot for Unitil Energy Systems, Inc.

NHSAVES PROGRAMS
2020 Statewide Goals
Company-Specific Programs [1]

Description	Program Budget	kWh Savings Annual	kWh Savings Lifetime	kW Savings Winter kW	kW Savings Summer kW	MMBtu Savings Annual	MMBtu Savings Lifetime	Customers Count
Electric Utilities								
Residential								
Home Energy Reports	$ 1,096,280	4,920,050	13,443,690	563.8	398.1	-	-	112,956
Customer Engagement Platform	$ 267,703	-	-	-	-	-	-	-
Forward Capacity Market Expenses [2]	$ 107,557	-	-	-	-	-	-	-
Residential DR Initiative	$ 250,559	-	-	-	-	-	-	1,020
Sub-total	$ 1,722,099	4,920,050	13,443,690	563.8	398.1	-	-	113,976
Commercial & Industrial								
Smart Start	$ 35,000	-	-			-	-	-
C&I Customer Partnerships	$ 23,124	-	-			-	-	-
C&I RFP Program	$ 1,482,952	5,948,560	73,328,524	803.6	1,010.3	-	-	68
Customer Engagement Platform	$ 373,126	-	-			-	-	-
Education	$ 514,438	-	-			-	-	-
Forward Capacity Market Expenses [2]	$ 204,134	-	-			-	-	-
Large Business DR Initiative	$ 607,530	-	-			-	-	20
Sub-total	$ 3,240,304	5,948,560	73,328,524	804	1,010	-	-	88
Total Residential and C&I	**$ 4,962,403**	**10,868,611**	**86,772,214**	**1,367.4**	**1,408.4**	**-**	**-**	**114,064**
Gas Utilities								
Residential								
Home Energy Reports	$ 356,201	-	-			9,372	32,651	36,694
Education	$ -	-	-			-	-	-
Sub-total	$ 356,201	-	-			9,372	32,651	36,694
Commercial & Industrial								
Education	$ 106,511	-	-			-	-	-
Sub-total	$ 106,511	-	-			-	-	-
Total Residential and C&I	**$ 462,712**	**-**	**-**			**9,372**	**32,651**	**36,694**
Grand Total	**$ 5,425,115**	**10,868,611**	**86,772,214**	**1,367.4**	**1,408.4**	**9,372.2**	**32,651**	**150,758**

Notes:
(1) Amounts shown above pertain only to the Company-Specific programs. The amounts pertaining to the Statewide programs are shown on Attachment B, page 2.
Company-specific includes company-specific programs, education, forward capacity market administration and loan program administration.
(2) Amounts shown are budgeted expenses related to the electric utilities' participation in ISO-NE's Forward Capacity Market.

NHSAVES ENERGY EFFICIENCY PROGRAM - 2020 UTILITY BUDGETS BY ACTIVITY
Residential Programs

Description		Electric Utilities					Gas Utilities			Grand Total
		Liberty	NHEC	Eversource	Unitil	Sub-total Electric	Liberty	Unitil	Sub-total Gas	
Home Energy Assistance	Internal Admin	$ 39,661	$ 50,579	$ 120,603	$ 54,700	$ 265,543	$ 50,293	$ 21,098	$ 71,391	$ 336,934
	External Admin	$ 2,404	$ 15,232	$ 10,200	$ 55,000	$ 82,836	$ 3,353	$ 3,600	$ 6,953	$ 89,789
	Rebate/Services	$ 883,359	$ 556,113	$ 6,882,871	$ 947,926	$ 9,270,268	$ 1,337,800	$ 303,667	$ 1,641,467	$ 10,911,736
	Implementation Services	$ 156,240	$ 103,985	$ 416,540	$ 160,000	$ 836,765	$ 117,351	$ 48,985	$ 166,336	$ 1,003,101
	Marketing	$ 60,092	$ 19,343	$ 242,290	$ 80,000	$ 401,725	$ 83,822	$ 15,000	$ 98,822	$ 500,547
	EM&V	$ 60,092	$ 30,091	$ 403,816	$ 55,505	$ 549,504	$ 83,822	$ 20,650	$ 104,472	$ 653,976
	Total	$ 1,201,849	$ 775,343	$ 8,076,319	$ 1,353,131	$ 11,406,641	$ 1,676,441	$ 413,000	$ 2,089,441	$ 13,496,083
HP w/EnergyStar®	Internal Admin	$ 17,892	$ 50,579	$ 97,951	$ 40,000	$ 206,422	$ 25,475	$ 14,208	$ 39,684	$ 246,106
	External Admin	$ 1,154	$ 15,232	$ 8,284	$ 6,342	$ 31,013	$ 1,866	$ 3,500	$ 5,366	$ 36,379
	Rebate/Services	$ 422,056	$ 489,066	$ 5,606,767	$ 530,728	$ 7,048,617	$ 765,846	$ 146,934	$ 912,780	$ 7,961,397
	Implementation Services	$ 72,145	$ 103,972	$ 338,305	$ 120,000	$ 634,423	$ 46,658	$ 35,000	$ 81,658	$ 716,081
	Marketing	$ 35,056	$ 19,343	$ 197,325	$ 50,000	$ 301,725	$ 46,658	$ 12,000	$ 58,658	$ 360,383
	EM&V	$ 28,858	$ 30,091	$ 328,875	$ 54,734	$ 442,559	$ 46,658	$ 11,000	$ 57,658	$ 500,217
	Total	$ 577,162	$ 708,283	$ 6,577,509	$ 801,804	$ 8,664,759	$ 933,162	$ 222,642	$ 1,155,804	$ 9,820,563
EnergyStar® Homes	Internal Admin	$ 11,853	$ 43,367	$ 33,832	$ 14,850	$ 103,902	$ 23,004	$ 11,882	$ 34,886	$ 138,788
	External Admin	$ 718	$ 14,609	$ 2,861	$ 4,331	$ 22,520	$ 1,749	$ 3,500	$ 5,249	$ 27,769
	Rebate/Services	$ 278,376	$ 339,526	$ 1,936,527	$ 287,640	$ 2,842,069	$ 736,226	$ 143,310	$ 879,536	$ 3,721,605
	Implementation Services	$ 46,695	$ 93,608	$ 116,848	$ 90,000	$ 347,151	$ 43,734	$ 33,495	$ 77,229	$ 424,380
	Marketing	$ 3,592	$ 19,343	$ 68,154	$ 25,000	$ 116,089	$ 26,241	$ 10,000	$ 36,241	$ 152,330
	EM&V	$ 17,960	$ 30,091	$ 113,591	$ 25,000	$ 186,641	$ 43,734	$ 11,000	$ 54,734	$ 241,376
	Total	$ 359,195	$ 540,544	$ 2,271,812	$ 446,821	$ 3,618,372	$ 874,689	$ 213,187	$ 1,087,876	$ 4,706,248
Energy Star® Products	Internal Admin	$ 12,125	$ 87,745	$ 73,337	$ 55,631	$ 228,839	$ 24,379	$ 16,284	$ 40,663	$ 269,501
	External Admin	$ 735	$ 24,464	$ 6,203	$ 18,000	$ 49,401	$ 1,735	$ 3,500	$ 5,235	$ 54,637
	Rebate/Services	$ 279,252	$ 534,929	$ 4,197,854	$ 725,916	$ 5,737,951	$ 728,671	$ 265,211	$ 993,882	$ 6,731,833
	Implementation Services	$ 44,092	$ 156,195	$ 253,293	$ 100,000	$ 553,581	$ 43,378	$ 29,819	$ 73,197	$ 626,778
	Marketing	$ 12,860	$ 25,000	$ 147,740	$ 75,000	$ 260,600	$ 26,027	$ 14,800	$ 40,827	$ 301,427
	EM&V	$ 18,372	$ 30,091	$ 246,233	$ 70,000	$ 364,696	$ 43,378	$ 17,500	$ 60,878	$ 425,574
	Total	$ 367,436	$ 858,424	$ 4,924,660	$ 1,044,547	$ 7,195,067	$ 867,569	$ 347,114	$ 1,214,683	$ 8,409,750

NHSAVES ENERGY EFFICIENCY PROGRAM - 2020 UTILITY BUDGETS BY ACTIVITY
Residential Programs (Continued)

Description		Electric Utilities					Gas Utilities			
		Liberty	NHEC	Eversource	Unitil	Sub-total Electric	Liberty	Unitil	Sub-total Gas	Grand Total
Other*	Internal Admin	$ 5,626	$ -	$ 18,844	$ 16,913	$ 41,383	$ 4,305	$ 3,000	$ 7,305	$ 48,688
	External Admin	$ 4,031	$ -	$ 1,594	$ 14,000	$ 19,624	$ -	$ 2,400	$ 2,400	$ 22,024
	Rebate/Services	$ 95,827	$ -	$ 1,078,610	$ 223,360	$ 1,397,797	$ 262,600	$ 60,606	$ 323,206	$ 1,721,003
	Implementation Services	$ 15,163	$ -	$ 65,082	$ 15,168	$ 95,413	$ 5,740	$ 2,000	$ 7,740	$ 103,153
	Marketing	$ -	$ -	$ 37,961	$ 16,000	$ 53,961	$ -	$ 200	$ 200	$ 54,161
	EM&V	$ 27,711	$ 6,000	$ 63,268	$ 16,943	$ 113,921	$ 14,350	$ 1,000	$ 15,350	$ 129,271
	Total	$ 148,357	$ 6,000	$ 1,265,358	$ 302,384	$ 1,722,099	$ 286,995	$ 69,206	$ 356,201	$ 2,078,300
Total Residential	Internal Admin	$ 87,158	$ 232,270	$ 344,567	$ 182,094	$ 846,089	$ 127,456	$ 66,472	$ 193,929	$ 1,040,018
	External Admin	$ 9,042	$ 69,537	$ 29,142	$ 97,674	$ 205,394	$ 8,704	$ 16,500	$ 25,204	$ 230,598
	Rebate/Services	$ 1,958,869	$ 1,919,634	$ 19,702,629	$ 2,715,570	$ 26,296,702	$ 3,831,143	$ 919,728	$ 4,750,871	$ 31,047,573
	Implementation Services	$ 334,336	$ 457,760	$ 1,190,068	$ 485,168	$ 2,467,332	$ 256,862	$ 149,299	$ 406,161	$ 2,873,493
	Marketing	$ 111,601	$ 83,029	$ 693,470	$ 246,000	$ 1,134,100	$ 182,748	$ 52,000	$ 234,748	$ 1,368,848
	EM&V	$ 152,993	$ 126,364	$ 1,155,783	$ 222,181	$ 1,657,321	$ 231,943	$ 61,150	$ 293,093	$ 1,950,414
	Total	$ 2,653,999	$ 2,888,594	$ 23,115,659	$ 3,948,687	$ 32,606,939	$ 4,638,856	$ 1,265,149	$ 5,904,005	$ 38,510,944
Total %	Internal Admin	3.3%	8.0%	1.5%	4.6%	2.6%	2.7%	5.3%	3.3%	2.7%
	External Admin	0.3%	2.4%	0.1%	2.5%	0.6%	0.2%	1.3%	0.4%	0.6%
	Rebate/Services	73.8%	66.5%	85.2%	68.8%	80.6%	82.6%	72.7%	80.5%	80.6%
	Implementation Services	12.6%	15.8%	5.1%	12.3%	7.6%	5.5%	11.8%	6.9%	7.5%
	Marketing	4.2%	2.9%	3.0%	6.2%	3.5%	3.9%	4.1%	4.0%	3.6%
	EM&V	5.8%	4.4%	5.0%	5.6%	5.1%	5.0%	4.8%	5.0%	5.1%
	Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

* Other includes company-specific programs, education, forward capacity market administration and loan program administration.

NHSAVES ENERGY EFFICIENCY PROGRAM - 2020 UTILITY BUDGETS BY ACTIVITY
C&I and Municipal Programs

		Electric Utilities					Gas Utilities			
		Liberty	NHEC	Eversource	Unitil	Sub-total Electric	Liberty	Unitil	Sub-total Gas	Grand Total
Large Business Energy Solutions	Internal Admin	$ 62,661	$ 65,768	$ 202,865	$ 74,585	$ 405,879	$ 54,767	$ 32,000	$ 86,767	$ 492,646
	External Admin	$ 3,798	$ 12,185	$ 17,157	$ 3,072	$ 36,212	$ 4,381	$ 15,000	$ 19,381	$ 55,593
	Rebate/Services	$ 1,471,589	$ 415,380	$ 11,612,029	$ 1,228,822	$ 14,727,819	$ 1,846,740	$ 587,485	$ 2,434,225	$ 17,162,044
	Implementation Services	$ 227,859	$ 98,242	$ 665,079	$ 185,264	$ 1,176,443	$ 109,534	$ 45,808	$ 155,342	$ 1,331,785
	Marketing	$ 37,976	$ 13,838	$ 407,515	$ 50,357	$ 509,686	$ 65,720	$ 23,100	$ 88,820	$ 598,507
	EM&V	$ 94,941	$ 30,091	$ 679,192	$ 90,000	$ 894,224	$ 109,534	$ 37,000	$ 146,534	$ 1,040,758
	Total	$ 1,898,824	$ 635,504	$ 13,583,836	$ 1,632,099	$ 17,750,264	$ 2,190,676	$ 740,393	$ 2,931,069	$ 20,681,333
Small Business Energy Solutions	Internal Admin	$ 39,893	$ 70,827	$ 99,737	$ 70,000	$ 280,456	$ 45,128	$ 20,000	$ 65,128	$ 345,585
	External Admin	$ 2,418	$ 12,185	$ 8,435	$ 3,981	$ 27,019	$ 3,610	$ 2,096	$ 5,706	$ 32,725
	Rebate/Services	$ 936,875	$ 357,687	$ 5,708,950	$ 1,190,162	$ 8,193,675	$ 1,521,732	$ 307,152	$ 1,828,884	$ 10,022,559
	Implementation Services	$ 145,065	$ 108,381	$ 326,980	$ 161,287	$ 741,712	$ 90,257	$ 40,000	$ 130,257	$ 871,969
	Marketing	$ 24,177	$ 13,838	$ 200,351	$ 60,000	$ 298,367	$ 54,154	$ 12,000	$ 66,154	$ 364,521
	EM&V	$ 60,444	$ 30,091	$ 333,919	$ 85,000	$ 509,453	$ 90,257	$ 24,000	$ 114,257	$ 623,710
	Total	$ 1,208,871	$ 593,009	$ 6,678,372	$ 1,570,430	$ 10,050,682	$ 1,805,139	$ 405,248	$ 2,210,387	$ 12,261,069
Municipal	Internal Admin	$ 5,502	$ 15,177	$ 21,625	$ 13,032	$ 55,335	$ -	$ -	$ -	$ 55,335
	External Admin	$ 333	$ 6,093	$ 1,829	$ -	$ 8,255	$ -	$ -	$ -	$ 8,255
	Rebate/Services	$ 122,534	$ 76,804	$ 1,237,797	$ 179,082	$ 1,616,217	$ -	$ -	$ -	$ 1,616,217
	Implementation Services	$ 21,673	$ 21,315	$ 70,895	$ 25,115	$ 138,998	$ -	$ -	$ -	$ 138,998
	Marketing	$ 8,336	$ 13,838	$ 43,440	$ 35,000	$ 100,613	$ -	$ -	$ -	$ 100,613
	EM&V	$ 8,336	$ 30,091	$ 72,399	$ 13,000	$ 123,826	$ -	$ -	$ -	$ 123,826
	Total	$ 166,713	$ 163,318	$ 1,447,985	$ 265,230	$ 2,043,245	$ -	$ -	$ -	$ 2,043,245
Other*	Internal Admin	$ 6,189	$ 15,484	$ 40,637	$ 20,473	$ 82,783	$ 2,638	$ 2,747	$ 5,385	$ 88,168
	External Admin	$ 8,984	$ -	$ 3,437	$ 5,000	$ 17,421	$ 176	$ -	$ 176	$ 17,597
	Rebate/Services	$ 53,475	$ 25,000	$ 2,326,068	$ 227,000	$ 2,631,544	$ 71,938	$ 14,320	$ 86,258	$ 2,717,802
	Implementation Services	$ 9,458	$ 27,058	$ 97,212	$ 16,000	$ 149,728	$ 6,156	$ -	$ 6,156	$ 155,884
	Marketing	$ 3,638	$ 13,838	$ 80,457	$ 28,343	$ 126,276	$ 2,638	$ 1,000	$ 3,638	$ 129,914
	EM&V	$ 54,145	$ 14,000	$ 134,095	$ 30,312	$ 232,552	$ 4,397	$ 500	$ 4,897	$ 237,449
	Total	$ 135,889	$ 95,380	$ 2,681,907	$ 327,128	$ 3,240,304	$ 87,944	$ 18,567	$ 106,511	$ 3,346,815

* Other includes company-specific programs, education, forward capacity market administration and loan program administration.

NHSAVES ENERGY EFFICIENCY PROGRAM - 2019 UTILITY BUDGETS BY ACTIVITY
C&I and Municipal Program Total and Grand Total (Residential, C&I and Municipal)

		Electric Utilities					Gas Utilities			
		Liberty	NHEC	Eversource	Unitil	Sub-total Electric	Liberty	Unitil	Sub-total Gas	Grand Total
Total C&I and Municipal	Internal Admin	$ 114,244	$ 167,256	$ 364,863	$ 178,091	$ 824,454	$ 102,534	$ 54,747	$ 157,281	$ 981,735
	External Admin	$ 15,533	$ 30,463	$ 30,858	$ 12,053	$ 88,907	$ 8,168	$ 17,096	$ 25,264	$ 114,171
	Rebate/Services	$ 2,584,473	$ 874,871	$ 20,884,845	$ 2,825,066	$ 27,169,255	$ 3,440,410	$ 908,957	$ 4,349,367	$ 31,518,622
	Implementation Services	$ 404,054	$ 254,996	$ 1,160,166	$ 387,666	$ 2,206,882	$ 205,947	$ 85,808	$ 291,755	$ 2,498,637
	Marketing	$ 74,127	$ 55,352	$ 731,763	$ 173,700	$ 1,034,942	$ 122,513	$ 36,100	$ 158,613	$ 1,193,555
	EM&V	$ 217,865	$ 104,273	$ 1,219,605	$ 218,312	$ 1,760,055	$ 204,188	$ 61,500	$ 265,688	$ 2,025,743
	Total	$ 3,410,298	$ 1,487,211	$ 24,392,100	$ 3,794,887	$ 33,084,495	$ 4,083,759	$ 1,164,208	$ 5,247,967	$ 38,332,462
Total C&I and Municipal %	Internal Admin	3.3%	11.2%	1.5%	4.7%	2.5%	2.5%	4.7%	3.0%	2.6%
	External Admin	0.5%	2.0%	0.1%	0.3%	0.3%	0.2%	1.5%	0.5%	0.3%
	Rebate/Services	75.8%	58.8%	85.6%	74.4%	82.1%	84.2%	78.1%	82.9%	82.2%
	Implementation Services	11.8%	17.1%	4.8%	10.2%	6.7%	5.0%	7.4%	5.6%	6.5%
	Marketing	2.2%	3.7%	3.0%	4.6%	3.1%	3.0%	3.1%	3.0%	3.1%
	EM&V	6.4%	7.0%	5.0%	5.8%	5.3%	5.0%	5.3%	5.1%	5.3%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Grand Total (Residential, C&I and Municipal)	Internal Admin	$ 201,403	$ 399,526	$ 709,430	$ 360,185	$ 1,670,543	$ 229,990	$ 121,219	$ 351,210	$ 2,021,753
	External Admin	$ 24,575	$ 100,000	$ 60,000	$ 109,727	$ 294,301	$ 16,871	$ 33,596	$ 50,467	$ 344,769
	Rebate/Services	$ 4,543,343	$ 2,794,505	$ 40,587,474	$ 5,540,636	$ 53,465,957	$ 7,271,553	$ 1,828,685	$ 9,100,238	$ 62,566,196
	Implementation Services	$ 738,390	$ 712,756	$ 2,350,234	$ 872,834	$ 4,674,214	$ 462,809	$ 235,107	$ 697,916	$ 5,372,130
	Marketing	$ 185,728	$ 138,381	$ 1,425,233	$ 419,700	$ 2,169,042	$ 305,261	$ 88,100	$ 393,361	$ 2,562,402
	EM&V	$ 370,858	$ 230,637	$ 2,375,388	$ 440,493	$ 3,417,376	$ 436,131	$ 122,650	$ 558,781	$ 3,976,157
	Total	$ 6,064,297	$ 4,375,805	$ 47,507,758	$ 7,743,573	$ 65,691,434	$ 8,722,615	$ 2,429,357	$ 11,151,972	$ 76,843,405
Grand Total % (Residential, C&I and Municipal)	Internal Admin	3.3%	9.1%	1.5%	4.7%	2.5%	2.6%	5.0%	3.1%	2.6%
	External Admin	0.4%	2.3%	0.1%	1.4%	0.4%	0.2%	1.4%	0.5%	0.4%
	Rebate/Services	74.9%	63.9%	85.4%	71.6%	81.4%	83.4%	75.3%	81.6%	81.4%
	Implementation Services	12.2%	16.3%	4.9%	11.3%	7.1%	5.3%	9.7%	6.3%	7.0%
	Marketing	3.1%	3.2%	3.0%	5.4%	3.3%	3.5%	3.6%	3.5%	3.3%
	EM&V	6.1%	5.3%	5.0%	5.7%	5.2%	5.0%	5.0%	5.0%	5.2%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

NHSAVES ELECTRIC PROGRAMS - 2020 UTILITY GOALS BY PROGRAM
Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings

	Liberty		NHEC		Eversource		Unitil		Total	
Home Energy Assistance										
Number of Units / Lifetime kWh Savings	124	1,649,304	418	968,309	1,088	14,764,868	122	1,147,932	1,752	18,530,413
B/C Ratio / Planned Budget	1.93	$1,201,849	1.50	$775,343	1.67	$8,076,319	1.25	$1,353,131	1.63	$11,406,641
/ Lifetime MMBtu Savings		106,013		46,635		557,764		59,095		769,506
Home Performance w/ENERGY STAR										
Number of Participants / Lifetime kWh Savings	214	2,389,084	868	2,861,351	1,615	15,477,013	109	1,666,124	2,806	22,393,572
B/C Ratio / Planned Budget	2.06	$577,162	2.51	$708,283	2.36	$6,577,509	1.48	$801,804	2.28	$8,664,759
/ Lifetime MMBtu Savings		65,497		119,858		1,098,218		64,494		1,348,068
ENERGY STAR Homes										
Number of Homes / Lifetime kWh Savings	149	3,902,794	89	3,896,343	703	24,753,954	66	2,033,496	1,007	34,586,587
B/C Ratio / Planned Budget	2.84	$359,195	1.87	$540,544	3.18	$2,271,812	2.68	$446,821	2.89	$3,618,372
/ Lifetime MMBtu Savings		41,666		37,137		270,061		45,000		393,865
ENERGY STAR Products										
Number of Participants / Lifetime kWh Savings	13,846	6,614,198	49,672	18,293,411	147,587	88,142,800	35,887	16,834,728	246,992	129,885,138
B/C Ratio / Planned Budget	1.91	$367,436	1.98	$858,424	1.71	$4,924,660	1.64	$1,044,547	1.74	$7,195,067
/ Lifetime MMBtu Savings		2,631		5,941		51,633		10,733		70,937
Large Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	129	106,440,508	39	33,333,927	1,263	790,775,263	248	77,988,573	1,679	1,008,538,271
B/C Ratio / Planned Budget	2.42	$1,898,824	2.03	$635,504	2.11	$13,583,836	2.23	$1,632,099	2.15	$17,750,264
/ Lifetime MMBtu Savings		0		0		0		0		0
Small Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	247	40,776,426	119	15,939,068	1,189	273,487,062	259	54,646,487	1,814	384,849,044
B/C Ratio / Planned Budget	1.60	$1,208,871	1.30	$593,009	1.65	$6,678,372	1.77	$1,570,430	1.65	$10,050,682
/ Lifetime MMBtu Savings		0		0		0		0		0
Municipal										
Number of Participants / Lifetime kWh Savings	11	4,938,090	12	1,674,047	55	47,452,700	27	6,812,569	106	60,877,406
B/C Ratio / Planned Budget	1.74	$166,713	0.96	$163,318	1.17	$1,447,985	1.51	$265,230	1.21	$2,043,245
/ Lifetime MMBtu Savings		0		3,195		51,338		1,000		55,534
Educational Programs										
Number of Participants / Planned Budget	0	$72,756	0	$76,380	0	$290,517	0	$74,785	0	$514,438
Company Specific Programs / FCM Expenses										
Number of Participants / Lifetime kWh Savings	10,256	1,192,133	0	0	81,108	83,729,081	22,700	1,851,000	114,064	86,772,214
/ Planned Budget		$211,491		$20,000		$3,626,748		$554,727		$4,412,966
/ Lifetime MMBtu Savings		0		0		0		0		0
Smart Start (Eversource/NHEC)										
Number of Participants / Planned Budget	0	$0	0	$5,000	0	$30,000	0	$0	0	$35,000
Utility Performance Incentive										
Planned Budget		$333,536		$240,394		$2,611,277		$425,897		$3,611,104
TOTAL PLANNED BUDGET		**$6,397,833**		**$4,616,200**		**$50,119,035**		**$8,169,470**		**$69,302,538**

NHSAVES ELECTRIC PROGRAMS
SBC[1] and RGGI Funding Allocation
2020 Budget

Program Allocation Summary

Program	RGGI	SBC[1]	TOTAL
HEA[2]			
Liberty	2.92379%	97.07621%	100.00000%
NHEC	3.88532%	96.11468%	100.00000%
Eversource	3.74490%	96.25510%	100.00000%
Unitil	3.45788%	96.54212%	100.00000%
Municipal			
Liberty	100.00000%	0.00000%	100.00000%
NHEC	100.00000%	0.00000%	100.00000%
Eversource	100.00000%	0.00000%	100.00000%
Unitil	100.00000%	0.00000%	100.00000%

A	B	C	D
Utility	**HEA Budget**	**RGGI HEA[3]**	**SBC HEA[4]**
Liberty	$ 1,201,849	$35,140	$1,166,709.15
NHEC	$ 775,343	$30,125	$745,218
Eversource	$ 8,076,319	$302,450	$7,773,869
Unitil	$ 1,353,131	$46,790	$1,306,341
Total	$ 11,406,641	$414,504	$10,992,137

Notes:

[1] SBC = System Benefits Charge, Forward Capacity Market and Carryforward/Interest

[2] HEA Allocation
RGGI HEA = RGGI HEA (C) /Total HEA Funds (B)
SBC HEA = SBC HEA (D) /Total HEA Funds (B)

3 17.0% of Total RGGI Funds including SB 268 funding less RGGI HEA Performance Incentive (($2,566,784 x .17) - ($432,970 x .055))

[4] SBC HEA = Utility's total HEA program budget (B) less RGGI HEA (C)

NHSAVES ELECTRIC PROGRAMS - 2020 UTILITY GOALS BY PROGRAM
Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings

(System Benefits Charge, Forward Capacity Market and Interest Funds Only)

	Liberty		NHEC		Eversource		Unitil		Total	
Home Energy Assistance										
Number of Units / Lifetime kWh Savings	121	1,601,082	401	930,687	1,047	14,211,938	118	1,108,238	1,687	17,851,945
B/C Ratio / Planned Budget	1.93	$1,166,709	1.50	$745,218	1.67	$7,773,869	1.25	$1,306,341	1.63	$10,992,137
/ Lifetime MMBtu Savings		102,913		44,823		536,876		57,051		741,663
Home Performance w/ENERGY STAR										
Number of Participants / Lifetime kWh Savings	214	2,389,084	868	2,861,351	1,615	15,477,013	109	1,666,124	2,806	22,393,572
B/C Ratio / Planned Budget	2.06	$577,162	2.51	$708,283	2.36	$6,577,509	1.48	$801,804	2.28	$8,664,759
/ Lifetime MMBtu Savings		65,497		119,858		1,098,218		64,494		1,348,068
ENERGY STAR Homes										
Number of Homes / Lifetime kWh Savings	149	3,902,794	89	3,896,343	703	24,753,954	66	2,033,496	1,007	34,586,587
B/C Ratio / Planned Budget	2.84	$359,195	1.87	$540,544	3.18	$2,271,812	2.68	$446,821	2.89	$3,618,372
/ Lifetime MMBtu Savings		41,666		37,137		270,061		45,000		393,865
ENERGY STAR Products										
Number of Participants / Lifetime kWh Savings	13,846	6,614,198	49,672	18,293,411	147,587	88,142,800	35,887	16,834,728	246,992	129,885,138
B/C Ratio / Planned Budget	1.91	$367,436	1.98	$858,424	1.71	$4,924,660	1.64	$1,044,547	1.74	$7,195,067
/ Lifetime MMBtu Savings		2,631		5,941		51,633		10,733		70,937
Large Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	129	106,440,508	39	33,333,927	1,263	790,775,263	248	77,988,573	1,679	1,008,538,271
B/C Ratio / Planned Budget	2.42	$1,898,824	2.03	$635,504	2.11	$13,583,836	2.23	$1,632,099	2.15	$17,750,264
/ Lifetime MMBtu Savings		0		0		0		0		0
Small Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	247	40,776,426	119	15,939,068	1,189	273,487,062	259	54,646,487	1,814	384,849,044
B/C Ratio / Planned Budget	1.60	$1,208,871	1.30	$593,009	1.65	$6,678,372	1.77	$1,570,430	1.65	$10,050,682
/ Lifetime MMBtu Savings		0		0		0		0		0
Municipal										
Number of Participants / Lifetime kWh Savings	0	0	0	0	0	0	0	0	0	0
B/C Ratio / Planned Budget	0.00	$0	0.00	$0	0.00	$0	0.00	$0	0.00	$0
/ Lifetime MMBtu Savings		0		0		0		0		0
Educational Programs										
Number of Participants / Planned Budget	0	$72,756	0	$76,380	0	$290,517	0	$74,785	0	$514,438
Company Specific Programs / FCM Expenses										
Number of Participants / Lifetime kWh Savings	10,256	1,192,133	0	0	81,108	83,729,081	22,700	1,851,000	114,064	86,772,214
/ Planned Budget		$211,491		$20,000		$3,626,748		$554,727		$4,412,966
/ Lifetime MMBtu Savings		0		0		0		0		0
Smart Start (Eversource/NHEC)										
Number of Participants / Planned Budget	0	$0	0	$5,000	0	$30,000	0	$0	0	$35,000
Utility Performance Incentive										
Planned Budget		$322,434		$229,755		$2,515,003		$408,735		$3,475,928
TOTAL PLANNED BUDGET		**$6,184,879**		**$4,412,118**		**$48,272,327**		**$7,840,290**		**$66,709,613**

NHSAVES ELECTRIC PROGRAMS - 2020 UTILITY GOALS BY PROGRAM
Total Customers Served, Program Budgets, Lifetime kWh and MMBtu Savings

(Energy Efficiency Fund Only - Regional Greenhouse Gas Initiative)

	Liberty		NHEC		Eversource		Unitil		Total	
Home Energy Assistance										
Number of Units / Lifetime kWh Savings	4	48,222	16	37,622	41	552,929	4	39,694	65	678,468
B/C Ratio / Planned Budget	1.93	$35,140	1.50	$30,125	1.67	$302,450	1.25	$46,790	1.63	$414,504
/ Lifetime MMBtu Savings		3,100		1,812		20,888		2,043		27,843
Home Performance w/ENERGY STAR										
Number of Participants / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
B/C Ratio / Planned Budget	-	-	-	-	-	-	-	-	-	-
/ Lifetime MMBtu Savings		-		-		-		-		-
ENERGY STAR Homes										
Number of Homes / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
B/C Ratio / Planned Budget	-	-	-	-	-	-	-	-	-	-
/ Lifetime MMBtu Savings		-		-		-		-		-
ENERGY STAR Products										
Number of Participants / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
B/C Ratio / Planned Budget	-	-	-	-	-	-	-	-	-	-
/ Lifetime MMBtu Savings		-		-		-		-		0
Large Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
B/C Ratio / Planned Budget	-	-	-	-	-	-	-	-	-	-
/ Lifetime MMBtu Savings		-		-		-		-		-
Small Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
B/C Ratio / Planned Budget	-	-	-	-	-	-	-	-	-	-
/ Lifetime MMBtu Savings		-		-		-		-		-
Municipal										
Number of Participants / Lifetime kWh Savings	11	4,938,090	12	1,674,047	55	47,452,700	27	6,812,569	106	60,877,406
B/C Ratio / Planned Budget	1.74	$166,713	0.96	$163,318	1.17	$1,447,985	1.51	$265,230	1.21	$2,043,245
/ Lifetime MMBtu Savings		0		3,195		51,338		1,000		55,534
Educational Programs										
Number of Participants / Planned Budget	-	-	-	-	-	-	-	-	-	-
Company Specific Programs / FCM Expenses										
Number of Participants / Lifetime kWh Savings	-	-	-	-	-	-	-	-	-	-
/ Planned Budget		-		-		-		-		-
/ Lifetime MMBtu Savings		-		-		-		-		-
Smart Start (Eversource/NHEC)										
Number of Participants / Planned Budget	-	-	-	-	-	-	-	-	-	-
Utility Performance Incentive										
Planned Budget		$11,102		$10,639		$96,274		$17,161		$135,176
TOTAL PLANNED BUDGET		**$212,954**		**$204,082**		**$1,846,709**		**$329,180**		**$2,592,925**

NHSAVES GAS PROGRAMS - 2020 UTILITY GOALS BY PROGRAM
Total Customers Served, Program Budgets and Lifetime MMBtu Savings

	Liberty		Unitil		Total	
Home Energy Assistance						
Number of Units / Lifetime MMBtu Savings	302	170,836	70	44,343	372	215,180
B/C Ratio / Planned Budget	1.01	$1,676,441	1.03	$413,000	1.01	$2,089,441
Home Performance w/ENERGY STAR						
Number of Participants / Lifetime MMBtu Savings	649	209,185	54	34,137	703	243,323
B/C Ratio / Planned Budget	1.67	$933,162	1.01	$222,642	1.54	$1,155,804
ENERGY STAR Homes						
Number of Homes / Lifetime MMBtu Savings	406	283,198	49	29,950	455	313,148
B/C Ratio / Planned Budget	1.04	$874,689	1.01	$213,187	1.04	$1,087,876
ENERGY STAR Products						
Number of Participants / Lifetime kWh Savings	2,013	1,919,000	812	196,940	2,825	2,115,940
B/C Ratio / Planned Budget	1.06	$867,569	1.07	$347,114	1.06	$1,214,683
/ Lifetime MMBtu Savings		188,881		103,964		292,845
Large Business Energy Solutions						
Number of Participants / Lifetime MMBtu Savings	92	1,038,000	93	279,652	185	1,317,652
B/C Ratio / Planned Budget	1.91	$2,190,676	1.87	$740,393	1.90	$2,931,069
Small Business Energy Solutions						
Number of Participants / Lifetime MMBtu Savings	974	491,863	217	126,923	1,191	618,787
B/C Ratio / Planned Budget	1.31	$1,805,139	1.74	$405,248	1.38	$2,210,387
Education						
B/C Ratio / Planned Budget	0.00	$87,944	0.00	$18,567	0.00	$106,511
Company Specific Programs						
Number of Participants / Lifetime MMBtu Savings	27,594	27,346	9,100	5,304	36,694	32,651
B/C Ratio / Planned Budget	1.02	$286,995	0.83	$69,206	0.99	$356,201
Utility Performance Incentive						
Planned Budget		$479,744		$133,615		$613,358
Total Program Expenses		**$9,202,359**		**$2,562,972**		**$11,765,331**

Program Cost-Effectiveness - 2020 PLAN

	Total Resource Benefit / Cost Ratio	Benefit ($000)	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.67	13,457.1	8,076.3	-	1,102.6	14,764.9	112.4	151.1	1,088	26,820.9	557,763.7
Energy Star Homes	3.18	9,639.2	2,271.8	755.5	1,127.3	24,754.0	129.0	253.7	703	11,436.2	270,061.3
Home Performance with Energy Star	2.36	26,413.3	6,577.5	4,621.9	1,178.6	15,477.0	180.7	210.1	1,615	58,069.1	1,098,218.4
Energy Star Products	1.71	11,620.2	4,924.7	1,869.0	10,038.6	88,142.8	2,396.8	1,380.8	147,587	3,560.8	51,632.7
Home Energy Reports	1.30	1,067.5	821.2	-	3,792.0	10,400.6	432.9	316.0	80,000	-	-
Res Customer Engagement Platform		-	267.7	-	-	-	-	-		-	-
Res Demand Response		-	128.5	-	-	-	-	-	1,020	-	-
ISO-NE Forward Capacity Market Expenses		-	48.0	-	-	-	-	-		-	-
Sub-Total Residential	**2.05**	**62,197.3**	**23,115.7**	**7,246.3**	**17,239.2**	**153,539.2**	**3,251.9**	**2,311.7**	**232,013**	**99,887.1**	**1,977,676.1**
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.11	71,321.1	13,583.8	20,145.5	59,273.6	790,775.3	7,905.6	6,375.4	1,263	-	-
Small Business Energy Solutions	1.65	25,255.9	6,678.4	8,591.4	20,790.4	273,487.1	2,341.8	2,414.3	1,189	-	-
Municipal Energy Solutions	1.17	4,488.4	1,448.0	2,379.8	3,364.1	47,452.7	608.7	156.2	55	3,422.6	51,338.5
C&I Customer Partnerships		-	23.1	-	-	-	-	-	-	-	-
Energy Rewards RFP Program	1.67	7,753.9	1,483.0	3,150.6	5,948.6	73,328.5	803.6	1,010.3	68	-	-
C&I Customer Engagement Platform		-	373.1	-	-	-	-	-	-	-	-
Education		-	290.5	-	-	-	-	-	-	-	-
CIM Demand Response		-	380.2	-	-	-	-	-	20	-	-
ISO Forward Capacity Market Expenses		-	102.0	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**1.86**	**108,819.2**	**24,362.1**	**34,267.3**	**89,376.7**	**1,185,043.5**	**11,659.7**	**9,956.3**	**2,596**	**3,422.6**	**51,338.5**
Smart Start		-	30.0	-	-	-	-	-	-	-	-
Total	**1.92**	**171,016.5**	**47,507.8**	**41,513.6**	**106,615.9**	**1,338,582.7**	**14,911.6**	**12,268.1**	**234,609**	**103,309.6**	**2,029,014.6**

Note: a 10% NEI adder is applied to total benefits excluding water.

Annual kWh Savings	106,615,917	77.9%	**kWh > 55%**	**Lifetime** kWh Savings	1,338,582,741	69.2%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	30,277,067	22.1%		**Lifetime** MMBTU Savings (in kWh)	594,645,499	30.8%	
	136,892,985	100.0%			**1,933,228,240**	100.0%	

Present Value Benefits - 2020 PLAN

	Total Benefits ($000)	Resource Benefits ($000)															Non-Resource Benefits ($000)		
		Electric											Non-Electric						
		CAPACITY				ENERGY													
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit		Other Fuels	Water Benefit	Total Resource Benefits		Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits
Residential Programs																			
Home Energy Assistance	**$ 13,457**	$ 175	$ -	$ 191	$ 166	$ 273	$ 296	$ 107	$ 115	$ 50	**$ 1,373**		$ 9,316	$ -	**$ 10,688**		$ 631	$ 2,138	**$ 2,769**
Energy Star Homes	**$ 9,639**	$ 375	$ -	$ 391	$ 339	$ 381	$ 488	$ 160	$ 202	$ 55	**$ 2,391**		$ 6,066	$ 33	**$ 8,490**		$ 303	$ 846	**$ 1,149**
Home Performance with Energy Star	**$ 26,413**	$ 211	$ -	$ 234	$ 203	$ 280	$ 320	$ 105	$ 120	$ 52	**$ 1,524**		$ 21,397	$ -	**$ 22,922**		$ 1,200	$ 2,292	**$ 3,492**
Energy Star Products	**$ 11,620**	$ 863	$ -	$ 1,049	$ 910	$ 2,032	$ 1,545	$ 886	$ 613	$ 424	**$ 8,322**		$ 841	$ 1,486	**$ 10,649**		$ 55	$ 916	**$ 971**
Home Energy Reports	**$ 1,068**	$ 59	$ -	$ 80	$ 69	$ 269	$ 226	$ 96	$ 82	$ 89	**$ 970**		$ -	$ -	**$ 970**		$ -	$ 97	**$ 97**
Res Customer Engagement Platform	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Res Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
ISO-NE Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Building Practices and Demo	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Sub-Total Residential	**$ 62,197**	**$ 1,682**	**$ -**	**$ 1,944**	**$ 1,686**	**$ 3,234**	**$ 2,876**	**$ 1,356**	**$ 1,132**	**$ 671**	**$ 14,581**		**$ 37,620**	**$ 1,519**	**$ 53,719**		**$ 2,189**	**$ 6,289**	**$ 8,478**
Commercial/Industrial Programs																			
Large Business Energy Solutions	**$ 71,321**	$ 5,641	$ -	$ 6,509	$ 5,645	$ 17,324	$ 16,409	$ 5,833	$ 4,643	$ 2,834	**$ 64,837**		$ -	$ -	**$ 64,837**		$ -	$ 6,484	**$ 6,484**
Small Business Energy Solutions	**$ 25,256**	$ 2,156	$ -	$ 2,483	$ 2,154	$ 5,951	$ 4,886	$ 2,460	$ 1,888	$ 982	**$ 22,960**		$ -	$ -	**$ 22,960**		$ -	$ 2,296	**$ 2,296**
Municipal Energy Solutions	**$ 4,488**	$ 140	$ -	$ 161	$ 140	$ 962	$ 1,055	$ 281	$ 317	$ 163	**$ 3,218**		$ 807	$ -	**$ 4,025**		$ 61	$ 402	**$ 464**
C&I Customer Partnerships	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Energy Rewards RFP Program	**$ 7,754**	$ 843	$ -	$ 985	$ 854	$ 1,420	$ 1,348	$ 702	$ 608	$ 289	**$ 7,049**		$ -	$ -	**$ 7,049**		$ -	$ 705	**$ 705**
C&I Customer Engagement Platform	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Education	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
CIM Demand Response	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
ISO Forward Capacity Market Expenses	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Sub-Total Commercial & Industrial	**$ 108,819**	**$ 8,780**	**$ -**	**$ 10,138**	**$ 8,793**	**$ 25,656**	**$ 23,698**	**$ 9,276**	**$ 7,457**	**$ 4,267**	**$ 98,064**		**$ 807**	**$ -**	**$ 98,871**		**$ 61**	**$ 9,887**	**$ 9,948**
Smart Start	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**		$ -	$ -	**$ -**		$ -	$ -	**$ -**
Total	**$ 171,016**	**$ 10,462**	**$ -**	**$ 12,082**	**$ 10,480**	**$ 28,890**	**$ 26,573**	**$ 10,632**	**$ 8,589**	**$ 4,937**	**$ 112,645**		**$ 38,427**	**$ 1,519**	**$ 152,590**		**$ 2,250**	**$ 16,176**	**$ 18,426**

Portfolio Planned Versus Actual Performance - 2020

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	*125% of Planned PI*	Actual PI	Source
1	Lifetime kWh Savings	1,338,582,741	*1,003,937,056*		-	1.925%	-	$ 913,947	$ *1,142,434*	$ -	Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	106,615,917	*79,961,938*		-	0.550%	-	$ 261,128	$ *326,410*	$ -	Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	12,268	*7,974*		-	0.660%	-	$ 313,353	$ *391,692*	$ -	Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	14,912	*9,693*		-	0.440%	-	$ 208,902	$ *261,128*	$ -	Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$ 152,590,361			-						Planned and Actual from Benefits Tab
6	Total Utility Costs[1,2]	$ 47,477,758			-						Planned and Actual from Cost Eff Tab
7	Net Benefits	$ 105,112,602	$ *78,834,452*	$ -	-	1.925%	-	$ 913,947	$ *1,142,434*	$ -	Line 5 minus line 6
8	Total					5.500%	-	$ 2,611,277	$ *3,264,096*	$ -	

		Total Resource Cost Test Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 171,016,492		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 2,611,277	$ -	from row 8 above
11	Participant Costs	$ 41,513,623		Planned and Actual from Cost Eff Tab
12	Total Utility Costs	$ 47,507,758	$ -	from row 6 above
13	**Portfolio TRC BCR**	**1.87**	**-**	row 9 divided by rows 10+11+12

All dollar values are expressed in 2020 dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

[2] Net of Smart Start

Eversource Energy Home Energy Assistance Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Oil-Wxn: Air Sealing, Insulation, Water measures	181	262	330	382		382	21	22	21	87%	87%	1,239,270	-	2,263,688	31	22	31	98%	98%	112,017	122,714	204,614
Propane-Wxn: Air Sealing, Insulation, Water measures	65	146	118	382		382	21	23	21	87%	87%	449,827	-	821,667	21	15	21	98%	98%	27,699	47,765	50,595
Gas-Wxn: Air Sealing, Insulation, Water measures	71	148	130	382		382	22	23	22	87%	87%	518,662	-	947,405	20	14	20	98%	98%	30,859	44,968	56,369
Kerosene-Wxn: Air Sealing, Insulation, Water measures	129	69	235	382		382	20	22	20	87%	87%	856,157	-	1,563,882	23	22	23	98%	98%	58,496	32,228	106,851
Electric-Wxn: Air Sealing, Insulation, Water measures	15	6	27	5,611	3,223	5,611	21	20	21	87%	87%	1,551,580	337,852	2,834,163	-	-	-	98%	98%	-	-	-
Cord Wood-Wxn: Air Sealing, Insulation, Water measures	15	21	28	382		382	20	23	20	87%	87%	104,755	-	191,350	47	29	47	98%	98%	14,667	13,672	26,790
Wood Pellets-Wxn: Air Sealing, Insulation, Water measures	10	1	19	382		382	20	24	20	87%	87%	69,837	-	127,566	47	223	47	98%	98%	9,778	5,184	17,860
Elec Wxn Savings on Fossil Homes		646			239			20		87%			2,622,295									
Baseload SF homes	110	125	200		239	-	20	20	20	87%	87%		507,410	-	-	-	-	100%	100%	-	-	-
LED Lighting Products	3,217	3,377	5,876	61	91	55	5	5	5	87%	87%	849,858	1,329,492	1,401,019	-	-	-	100%	100%	-	-	-
Refrigerator	191	407	348	842	708	842	12	12	12	87%	87%	1,673,872	3,005,391	3,057,546	-	-	-	100%	100%	-	-	-
Oil Boiler Replacement, >=87% AFUE	35	20	64	77	80	77	25	20	25	87%	87%	58,563	27,860	106,973	16	13	16	100%	100%	13,996	5,045	25,565
Propane Boiler Replacement, >=95% AFUE	6	12	11	399	11	399	25	20	25	87%	87%	50,868	2,367	92,917	17	19	17	100%	100%	2,449	4,677	4,473
Gas Boiler Replacement, >=95% AFUE	2	98	3	-	2	-	25	20	25	87%	87%	-	3,042	-	20	52	20	100%	100%	842	102,370	1,538
Kerosene Boiler Replacement, >=87% AFUE	1		2	-		-	25	-	25	87%	87%	-	-	-	6		6	100%	100%	134	-	245
Boiler Replacement, User Defined		3		-	113	-	-	20		87%		-	5,909			23	-	100%			1,350	
Oil Furnace Replacment, >=87% ECM	37	13	67	7	182	7	20	18	20	87%	87%	4,295	37,025	7,846	24	14	24	100%	100%	17,705	3,164	32,341
Propane Furnace Replacment, >=95% ECM	22	5	40	131	212	131	20	18	20	87%	87%	49,482	16,565	90,385	17	10	17	100%	100%	7,291	884	13,319
Natural Gas Furnace Replacment, >=95% ECM	6	2	11	-	3,321	-	20	18	20	87%	87%	-	103,894	-	23	(13)	23	100%	100%	2,712	(475)	4,953
Kerosene Furnace Replacment, >=87% ECM	34	16	61	88	66	88	20	18	20	87%	87%	51,054	16,469	93,256	10	5	10	100%	100%	6,707	1,546	12,250
Base load SF Lighting	658	-	1,201	61	61	55	5	5	5	87%	87%	173,708	-	286,364	-	-	-	100%	100%	-	-	-
Base load SF Fridge	55	-	100	842	842	842	12	12	12	87%	87%	481,127	-	878,841	-	-	-	100%	100%	-	-	-
Program Summary*				**623,609**	**704,707**	**1,102,645**						**8,182,914**	**8,015,572**	**14,764,868**	**14,683**	**17,952**	**26,821**			**305,351**	**385,089**	**557,764**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy Home Performance with ENERGY STAR®

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Oil-Wxn: Air Sealing, Insulation, Water measures	290	254	819	225		245	20	21	20	100%	99%	1,305,036	-	3,975,129	37	36	37	100%	99%	217,158	191,902	603,766
Propane-Wxn: Air Sealing, Insulation, Water measures	117	85	331	225		245	20	21	20	100%	99%	527,212	-	1,605,883	31	27	33	100%	99%	71,724	46,898	218,471
Gas-Wxn: Air Sealing, Insulation, Water measures		-		225		245	20		20	100%	99%		-				25	100%	99%		-	
Kerosene-Wxn: Air Sealing, Insulation, Water measures	5	3	14	225		245	20	20	20	100%	99%	21,871	-	66,618	25	30	27	100%	99%	2,437	1,781	7,423
Electric-Wxn: Air Sealing, Insulation, Water measures	15	20	42	5,730	8,117	6,245	20	22	20	100%	99%	1,703,550	3,516,118	5,189,002	-		-	100%	99%	-	-	-
Cord Wood-Wxn: Air Sealing, Insulation, Water measures	24	21	69	225		245	20	22	20	100%	99%	109,868	-	334,657	42	29	45	100%	99%	20,274	13,273	61,755
Wood Pellets-Wxn: Air Sealing, Insulation, Water measures	19	92	55	225		245	20	21	20	100%	99%	87,740	-	267,255	42	10	45	100%	99%	16,191	19,049	49,318
Elec Wxn Savings on Fossil Homes		363			122			20		100%			881,664									
Baseload SF	101	221	286		122	-	20	20	20	100%	100%		536,771	-	-		-	100%	100%	-	-	-
LED Lighting Products	3,088	3,430	8,715	30	37	17	5	5	5	100%	99%	469,445	635,550	750,173	-		-	100%	99%	-	-	-
Refrigerator	29	11	81	804	1,037	804	12	12	12	100%	99%	275,828	136,848	770,798	-		-	100%	99%	-	-	-
Oil Boiler Replacement, >=87% AFUE	16	3	45	142	142	142	25	25	25	100%	100%	56,835	10,650	160,429	3	3	3	100%	100%	1,081	203	3,050
Propane Boiler Replacement, >=95% AFUE	4	4	11	142	142	142	25	25	25	100%	100%	14,209	14,200	40,107	10	10	10	100%	100%	1,021	1,020	2,881
Gas Boiler Replacement, >=95% AFUE	-		-	142	142	142	25	25	25	100%	100%	-	-	-	10	10	10	100%	100%	-	-	-
Kerosene Boiler Replacement, >=87% AFUE				142	142	142	25	25	25	100%	100%		-			3	3	100%	100%		-	
Oil Furnace Replacment, >=87% ECM	19	-	53	168	168	168	20	20	20	100%	100%	63,399	-	178,958	5	5	5	100%	100%	1,736	-	4,900
Propane Furnace Replacment, >=95% ECM	14	-	40	168	168	168	20	20	20	100%	100%	48,030	-	135,574	6	6	6	100%	100%	1,801	-	5,084
Base load SF Lighting	911	-	2,571	30	30	17	5	5	5	100%	99%	138,486	-	221,301	-		-	100%	99%	-	-	-
Base load SF Fridge	10	-	29	804	804	804	12	12	12	100%	99%	97,643	-	272,862	-		-	100%	99%	-	-	-
Oil Indirect Water Heater		1						25								3	-	100%			68	
LP Indirect Water Heater		2						25								3	-	100%			135	
Visual Audit Oil Savings			540			-			14		100%			-			11	100%	100%		-	84,942
Visual Audit Propane Savings			360			-			14		100%			-			11	100%	100%		-	56,628
Visual Audit kW Savings			900			335			5		100%			1,508,265			-	100%	100%		-	-
																					-	
Program Summary*				**348,886**	**373,105**	**1,178,595**						**4,919,151**	**5,731,801**	**15,477,013**	**16,650**	**12,974**	**58,069**			**333,423**	**274,328**	**1,098,218**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy ENERGY STAR® Homes

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
SF-Oil Heated Home		1			37	-		25		100%	100%		925			17	-	100%	100%		423	
SF-Propane Heated Home	111	144	222	1,008	516	1,008	24	25	24	100%	100%	2,648,302	1,857,450	5,312,580	39	61	39	100%	100%	102,468	219,746	205,555
SF-Gas Heated Home	12	7	24	1,069	690	1,069	23	25	23	100%	100%	298,889	120,700	599,580	36	65	36	100%	100%	10,036	11,453	20,133
SF-Kerosene Heated Home		-				-		25									-					
SF-Electric Heated Home	30	23	60	5,604	28,187	5,604	25	25	25	100%	100%	4,159,032	16,207,350	8,343,153	-	1	-	100%	100%	-	790	-
SF-Wood Pellets Heated Home	1	-	3	6,836		6,836	25	25	25	100%	100%	241,584	-	484,626	34	-	34	100%	100%	1,193	-	2,393
GSHP Heating		5			(37,682)	-		25		100%	100%		(4,710,300)			-	-	100%	100%		-	
LED Lighting Products	3,517	3,302	7,055	20	20	12	5	5	5	100%	100%	356,472	334,692	408,920	-	-	-	100%	100%	-	-	-
LED Fixture	690	1,056	1,383	20	20	12	5	5	5	100%	100%	69,902	107,037	80,187	-	-	-	100%	100%	-	-	-
Clothes Washer	77	314	155	89	89	89	14	14	14	100%	100%	95,909	389,780	192,396	0	0	0	100%	100%	291	1,183	584
Clothes Dryer		10		160	160	160	12	12	12	100%	100%		19,200			-	-	100%	100%		-	
Dishwasher		-		23	23	23	13	13	13	100%	100%		-			0	0	100%	100%		-	
Refrigerator	514	342	1,032	41	41	41	12	12	12	100%	100%	253,069	168,264	507,664	-	-	-	100%	100%	-	-	-
Freezer				53	53	53	12	12	12	100%	100%		-			-	-	100%	100%		-	
MF-Wood Heated Home	4		9	21		21	21	25	21	100%	100%	1,838	-	3,687	9	-	9	100%	100%	802	-	1,609
MF-Propane Heated Home	74		149	866		866	24	25	24	100%	100%	1,534,156	-	3,077,566	11	-	11	100%	100%	19,834	-	39,788
MF-Gas Heated Home	241	122	-	493	143	493	23	25	23	100%	100%	2,758,671	437,075	-	9	15	9	100%	100%	48,281	46,745	-
MF-Electric Heated Home	117	257	235	1,004	2,488	1,004	24	25	24	100%	100%	2,863,162	15,987,925	5,743,595	-	-	-	100%	100%	-	-	-
Rem Rate Fee	1	1	1			-	1	1	1	100%	100%		-	-	-	-	-	100%	100%	-	-	-
Admin fee	1	1	1			-	1	1	1	100%	100%		-	-	-	-	-	100%	100%	-	-	-
Program Summary*				**717,398**	**1,327,854**	**1,127,346**						**15,280,986**	**30,920,098**	**24,753,954**	**7,782**	**11,251**	**11,436**			**182,905**	**280,339**	**270,061**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy ENERGY STAR® Products Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
LED Lighting Products	321,399	556,869	516,849	20	20	12	5	5	5	89%	89%	28,993,718	50,235,617	26,679,744	-	-	-	100%	100%	-	-	-
LED Fixture		27,025	-	20	20	12	5	5	5	89%	89%		2,437,962	-		-	-	100%	100%		-	-
Mini Split HP (assumed 1.5 ton) (cooling)-Mini Split Baseline	1,130	1,288	1,723	103	103	103	18	18	18	100%	100%	2,094,364	2,386,049	3,192,186	-	-	-	100%	100%	-	-	-
Mini Split HP (assumed 1.5 ton) (heating) -Mini Split Baseline	1,130	1,288	1,723	328	328	328	18	18	18	100%	100%	6,680,210	7,610,572	10,181,838	-	-	-	100%	100%	-	-	-
Air Source Heat Pump (cooling) (assumed 3 ton)	30	29	47	220	220	220	18	18	18	100%	100%	120,226	113,502	185,130	-	-	-	100%	100%	-	-	-
Air Source Heat Pump (heating) (assumed 3 ton)	30	29	47	2,087	2,087	2,087	18	18	18	100%	100%	1,140,522	1,076,743	1,756,239	-	-	-	100%	100%	-	-	-
DHW Heat Pump Water Heater 50 gal	208	127	1,000	1,384	1,384	1,384	13	13	13	100%	100%	3,739,241	2,284,984	17,992,450	-	-	-	100%	100%	-	-	-
DHW Heat Pump Water Heater 80 gal	8	55	13	1,640	1,640	1,640	13	13	13	100%	100%	176,530	1,172,600	271,830	-	-	-	100%	100%	-	-	-
Wifi Thermostat (Heating&Cooling)	175	471	270	25	25	25	15	15	15	100%	100%	65,344	175,608	100,620	7	7	7	100%	100%	17,351	46,629	26,718
DSC_070		12			59			18		100%			12,490	-		-	-				-	-
ES Dehumidifier	1,390	2,391	1,575	214	214	214	12	12	12	100%	100%	3,568,878	6,140,088	4,044,728	-	-	-	100%	100%	-	-	-
ES Pool Pumps (2 speed)	23	4	23	842	842	842	10	10	10	100%	100%	197,028	33,680	197,028	-	-	-	100%	100%	-	-	-
ES Pool Pumps (Variable Speed)	9	383	325	1,062	1,062	1,062	10	10	10	100%	100%	95,580	4,067,460	3,451,500	-	-	-	100%	100%	-	-	-
ES Clothes Washers	1,070	2,541	1,500	89	89	89	14	14	14	100%	100%	1,328,232	3,154,240	1,861,386	0	0	0	100%	100%	4,030	9,569	5,647
ES Clothes Dryers	880	2,180	1,480	93	93	93	12	12	12	100%	100%	985,248	2,440,728	1,657,008	-	-	-	100%	100%	-	-	-
ES AC (central) 3 ton	211	85	325	200	200	200	14	14	14	100%	100%	590,908	237,205	909,912	-	-	-	100%	100%	-	-	-
ES Room AC (room)	2,023	1,173	2,023	16	16	16	9	9	9	100%	100%	294,254	170,601	294,254	-	-	-	100%	100%	-	-	-
ES Room Air Purifier	129	688	800	391	391	391	9	9	9	50%	50%	226,158	1,208,988	1,405,800	-	-	-	100%	100%	-	-	-
ES Refrigerator	982	2,348	1,500	64	64	64	12	12	12	100%	100%	757,711	1,811,717	1,157,554	-	-	-	100%	100%	-	-	-
Primary Refrigerator Recycling/Pickup/Turnin	78	159	238	492	492	492	8	8	8	100%	100%	307,938	625,315	936,006	-	-	-	100%	100%	-	-	-
2nd Refrigerator Pickup/Turnin	350	529	350	755	755	755	8	8	8	100%	100%	2,114,604	3,195,160	2,114,604	-	-	-	100%	100%	-	-	-
2nd Freezer Pickup/Turnin	78	171	78	658	658	658	8	8	8	100%	100%	412,171	900,144	412,171	-	-	-	100%	100%	-	-	-
Room AC Pickup/Turnin	22	222	22	16	16	16	5	5	5	100%	100%	1,750	17,982	1,750	-	-	-	100%	100%	-	-	-
Dehumidifier Turnin		50			16			5		100%			4,050	-		-	-				-	-
ECM Motors for FHA Furnace Fans	14	-	21	168	168	168	18	18	18	100%	100%	41,731	-	64,260	-	-	-	100%	100%	-	-	-
ECM Motor for FWH Circulating Pump	14	-	1,000	142	142	68	15	15	15	100%	69%	29,394	-	703,976	-	-	-	100%	100%	-	-	-
Refrigerator CEE Tier 2+	655	540	720	96	96	96	12	12	12	100%	100%	757,318	624,672	833,050	-	-	-	100%	100%	-	-	-
Washer Tier CEE Tier 2+	2,497	1,486	3,121	156	156	156	14	14	14	100%	100%	5,449,225	3,243,344	6,811,531	0	0	0	100%	100%	15,414	9,175	19,268
Dryer Hybrid	110	4	110	229	229	229	12	12	12	100%	100%	302,808	11,011	302,808	-		-	100%	100%	-	-	-
Dryer Heat Pump	110	17	110	472	472	472	12	12	12	100%	100%	623,436	96,349	623,436	-		-	100%	100%	-	-	-
Program Summary*				**8,217,144**	**13,993,423**	**10,038,607**						**61,094,527**	**95,488,859**	**88,142,800**	**2,546**	**4,447**	**3,561**			**36,795**	**65,373**	**51,633**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy Home Energy Reports Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Behavioral Savings	50,000	54,161	80,000	13	18	12	1	1	1	100%	100%	663,592	978,448	940,416	-	-	-	100%	100%	-	-	-
Behavioral Savings	50,000	54,161	80,000	10	9	9	2	2	2	100%	100%	998,043	998,052	1,414,386	-	-	-	100%	100%	-	-	-
Behavioral Savings	50,000	54,161	80,000	8	7	7	3	3	3	100%	100%	1,125,792	1,125,803	1,595,427	-	-	-	100%	100%	-	-	-
Behavioral Savings	50,000	54,161	80,000	23	21	20	4	4	4	100%	100%	4,551,590	4,551,632	6,450,329	-	-	-	100%	100%	-	-	-
Program Summary*				**2,675,775**	**2,990,650**	**3,792,000**						**7,339,017**	**7,653,935**	**10,400,557**	**0**	**0**	**0**			**0**	**0**	**0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy Large Business Energy Solutions Programs

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Retrofit Track																						
Cooling	10	3	10	28,263	51,675	24,001	13	13	13	100%	100%	3,621,162	2,021,261	3,143,341	-		-	100%	100%	-	-	-
Heating	4	9	7	57,916	44,860	49,183	13	13	13	100%	100%	2,924,109	5,241,188	4,747,373	-		-	100%	100%	-	-	-
Lighting	10	1	19	52,667	31,151	44,725	13	13	13	100%	100%	6,904,026	404,387	11,208,882	-		-	100%	100%	-	-	-
Lighting-LED	167	152	292	68,517	104,939	58,185	13	13	13	100%	100%	148,276,051	205,333,592	220,590,476	-		-	100%	100%	-	-	-
LightingOS Only	6	19	12	186,496	18,555	158,373	9	9	9	100%	100%	10,512,400	3,177,887	17,067,180	-		-	100%	100%	-	-	-
Park Lot Lights	47	43	81	99,963	54,133	84,889	13	13	13	100%	100%	60,447,438	30,216,225	88,327,201	-		-	100%	100%	-	-	-
Process	37	37	71	51,330	131,980	43,590	12	11	12	100%	100%	22,562,787	55,950,841	36,631,326	-		-	100%	100%	-	-	-
Number of Projects	281	265	468			-	1	1	1	100%	100%		-	-	-		-	100%	100%	-	-	-
Upstream LED Screw In			4,046			121		1	4		83%		-	1,626,886			-		100%			-
Upstream LED Stairwell Kit			40			217		1	10		83%		-	72,617			-		100%			-
Upstream LED Linear Lamp (TLED)			14,408			61		1	10		83%		-	7,240,550			-		100%			-
Upstream LED Linear Fixture			7,036			112		1	10		83%		-	6,513,575			-		100%			-
Upstream LED High Bay/Low Bay			3,497			807			13		83%			30,448,561					100%			
Upstream LED Exterior			788			362			13		83%			3,081,085					100%			
HVAC DHPMS		1			48,404			9		100%			435,016				-	100%			-	
Express Lighting (Midstream)		102			6,560			13		80%			6,958,472				-	100%			-	
New Equipment & Construction Track																						
Cooling	9	49	-	49,158	31,749	41,745	14	17	14	100%	100%	6,039,225	26,308,062	-	-	0	-	100%	100%	-	5	-
Heating	33	16	62	141,835	99,297	120,447	15	15	15	100%	100%	67,707,645	23,797,374	109,513,786	-		-	100%	100%	-	-	-
Lighting	1		1	33,812		28,714	15		15	100%	100%	284,284	-	459,816	-		-	100%	100%	-	-	-
Lighting-LED	32	57	60	144,165	52,634	122,426	15	15	15	100%	100%	68,202,527	44,697,073	110,314,232	-	(1)	-	100%	100%	-	(559)	-
LightingOS Only	0	1	1	84,230	20,374	71,528	11	10	11	100%	100%	430,142	203,450	695,734	-		-	100%	100%	-	-	-
Park Lot Lights	14	11	27	113,547	74,564	96,424	15	15	15	100%	100%	23,712,615	12,285,488	38,353,989	-		-	100%	100%	-	-	-
Process	50	39	96	77,722	60,996	66,002	14	15	14	100%	100%	54,890,421	35,237,708	88,782,557	-		-	100%	100%	-	-	-
HVAC DHPMS		8			6,483			16		100%			812,871				-	100%			-	
Other		1			50,369			15		100%			754,460				-	100%			-	
HVAC Upstream - Unitary Air Conditioners			90			3,841			12		86%			3,549,913			-		100%			-
HVAC Upstream - Heat Pump Systems			0			784			12		86%			1,557			-		100%			-
HVAC Upstream - Water Source Heat Pump Systems			71			662			12		86%			487,307			-		100%			-
HVAC Upstream - DMSHP Systems			23			1,152			12		86%			275,528			-		100%			-
HVAC Upstream - Dual Enthalpy Economizer Controls (DEEC)			19			3,674			10		86%			586,510			-		100%			-
HVAC Upstream - Circulator Pump			79			460			20		86%			624,202			-		100%			-
HVAC Upstream - VRF			43			8,794			20		86%			6,431,078			-		100%			-
Program Summary*				**35,375,683**	**34,106,169**	**59,273,605**						**476,514,834**	**453,835,356**	**790,775,263**	**0**	**-37**	**0**			**0**	**-554**	**0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy Small Business Energy Solutions Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Retrofit Track																						
Cooling	6	-	6	26,114	-	22,176	10	-	10	100%	100%	1,585,169	-	1,423,679	-	-	-	100%	100%	-	-	-
Lighting	144	265	235	31,674	34,348	26,897	13	13	13	100%	107%	59,516,400	118,750,705	87,852,982	-	-	-	100%	100%	-	-	-
Ext. Lighting	32	45	51	34,199	19,432	29,042	13	13	13	100%	103%	14,315,598	11,597,124	20,015,300	-	-	-	100%	100%	-	-	-
Process	25	8	50	23,367	49,933	19,843	14	15	14	100%	100%	8,075,980	5,914,767	13,565,889	-	-	-	100%	100%	-	-	-
Custom	15	-	29	22,018	-	18,697	13	-	13	100%	100%	4,353,202	-	7,312,432	-	-	-	100%	100%	-	-	-
Motors	1	2	1	28,220	14,161	23,965	11	13	11	100%	100%	221,155	368,186	371,493	-	-	-	100%	100%	-	-	-
Refrigeration	1	-	3	47,679	-	40,489	15	-	15	100%	100%	1,061,231	-	1,782,638	-	-	-	100%	100%	-	-	-
DHW	3	-	6	15,480	-	13,146	10	-	10	100%	100%	446,069	-	749,298	-	-	-	100%	100%	-	-	-
Upstream LED Screw In			1,904			121			4		83%			765,594			-		100%			
Upstream LED Stairwell Kit			19			217			10		83%			34,173			-		100%			
Upstream LED Linear Lamp (TLED)			6,780			61			10		83%			3,407,318			-		100%			
Upstream LED Linear Fixture			3,311			112			10		83%			3,065,212					100%			
Upstream LED High Bay/Low Bay			1,646			807			13		83%			14,328,735					100%			
Upstream LED Exterior			371			362			13		83%			1,449,922					100%			
Heating		2		3	38,010			25		100%			1,900,500				-	100%				
														-								-
New Equipment & Construction Track														-								-
Cooling	5	19	-	28,435	3,932	24,147	15	15	15	100%	100%	2,210,268	1,105,903	-	-	-	-	100%	100%	-	-	-
Heating	0	3	0	13,928	44,723	11,827	15	16	15	100%	100%	44,549	2,197,450	74,832	-	-	-	100%	100%	-	-	-
Lighting	49	108	97	29,975	18,213	25,455	15	14	15	100%	107%	21,683,916	27,618,485	38,828,264	-	-	-	100%	100%	-	-	-
Ext. Lighting	1	7	1	28,489	37,570	24,193	15	15	15	100%	103%	221,652	3,866,968	382,380	-	-	-	100%	100%	-	-	-
Process	23	8	39	9,370	20,868	7,957	15	14	15	100%	100%	3,244,120	2,395,189	4,647,045	-	-	-	100%	100%	-	-	-
Custom	15	-	25	7,477	-	6,350	15	-	15	100%	100%	1,670,790	-	2,393,327	-	-	-	100%	100%	-	-	-
Motors	2	37	3	64,401	15,610	54,690	15	13	15	100%	100%	1,582,524	7,528,812	2,658,296	-	-	-	100%	100%	-	-	-
Refrigeration	0	1	0	37,747	21,341	32,055	15	15	15	100%	100%	128,485	320,115	215,827	-	-	-	100%	100%	-	-	-
DHW		28			1,775			10		100%			497,000				-	100%				
HVAC Upstream - Unitary Air Conditioners			37			3,841			12		86%			1,463,597			-		100%			-
HVAC Upstream - Heat Pump Systems			0			784			12		86%			642			-		100%			-
HVAC Upstream - Water Source Heat Pump Systems			29			662			12		86%			200,912			-		100%			-
HVAC Upstream - DMSHP Systems			10			1,152			12		86%			113,598			-		100%			-
HVAC Upstream - Dual Enthalpy Economizer Controls (DEEC)			8			3,674			10		86%			241,813			-		100%			-
HVAC Upstream - Circulator Pump			33			460			20		86%			257,353			-		100%			-
HVAC Upstream - VRF			18			8,794			20		86%			2,651,475			-		100%			-
Electric Food Service			45			1,790			12		86%			862,509			-		100%			-
														-								-
Direct Install Track														-								-
Ext Lighting	201	-	398	1,869	-	1,587	13	-	13	100%	103%	4,799,886	-	8,280,460	-	-	-	100%	100%	-	-	-
Lighting	29	127	57	80,327	26,990	68,214	13	13	13	100%	107%	29,565,637	44,564,706	52,941,653	-	-	-	100%	100%	-	-	-
Refrigeration	4	14	8	13,076	28,685	11,105	13	13	13	100%	100%	683,669	5,220,735	1,148,416	-	-	-	100%	100%	-	-	-
														-								-
All														-								-
Express Lighting (Midstream)		55			5,597			13		80%			3,201,514			-	-	100%			-	
Program Summary*				**11,667,553**	**17,810,515**	**20,790,421**						**155,410,302**	**237,048,159**	**273,487,062**	**0**	**0**	**0**			**0**	**0**	**0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy Municipal Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
ALL																						
Cooling	0	8	0	29,873	6,290	25,369	15	13	15	100%	100%	14,431	642,315	12,073	-		-	100%	100%	-	-	-
Heating	11	26	11	15,380	2,219	13,061	21	16	21	100%	100%	3,666,925	950,323	3,067,656	-		-	100%	100%	-	-	-
Lighting	1	-	1	175,836	-	149,321	15		15	100%	107%	2,019,527	-	1,800,991	-		-	100%	100%	-	-	-
Lighting-LED	10	46	10	59,063	34,448	50,156	13	13	13	100%	107%	7,708,178	20,795,976	6,874,063	-		-	100%	100%	-	-	-
LightingOS Only	1	1	1	73,457	61,808	62,380	9	9	9	100%	100%	422,140	569,188	353,151	-		-	100%	100%	-	-	-
Park Lot Lights	29	34	29	87,008	43,291	73,887	14	14	14	100%	103%	35,652,025	21,106,235	30,630,861	-		-	100%	100%	-	-	-
Process	5	2	4	96,767	-	82,175	13	17	13	100%	100%	5,634,771	-	4,713,905	-	18	-	100%	100%	-	597	-
FF Savings	56	20	55		-	-	15	16	15	100%	100%		-	-	61	274	62	100%	100%	51,642	86,213	51,338
Number of Projects	56	126	55		-	-	1	1	1	100%	100%		-	-	-		-	100%	100%	-	-	-
FF Savings (Oil)		5			-			25		100%			-	-		55	-	100%			6,764	-
Other		7			4,238			15		100%			445,005	-			-	100%			-	-
HVAC DHPMS		2			10,739			13		100%			272,475	-			-	100%			-	-
CI Audits: ERS (Energy & Resource Solutions)	1	1	1			-	1	1	1	100%	100%		-	-	-		-	100%	100%	-	-	-
CI Audits: DMS						-	1	1	1	100%	100%	-	-				-	100%	100%	-	-	
CI Audits: CES (Compressor Energy Services)						-	1	1	1	100%	100%	-	-				-	100%	100%	-	-	
FF Savings (LP)		1						15		100%						19	-	100%		-	286	-
Program Summary*				**3,905,245**	**3,277,457**	**3,364,139**						**55,117,998**	**44,781,517**	**47,452,700**	**3,443**	**5,803**	**3,423**			**51,642**	**93,859**	**51,338**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Eversource Energy C&I RFP Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
Cooling	10	2	27	25,727	65,161	21,847	15	13	15	100%	100%	3,886,534	1,694,186	8,581,947	-	-	-	100%	100%	-	-	-
Lighting						-				100%	100%		-				-	100%	100%			
Lighting-LED	3	2	8	116,581	359,246	99,001	13	13	13	100%	100%	4,794,147	9,215,196	10,586,069	-	-	-	100%	100%	-	-	-
LightingOS Only	1	1	2	133,442	37,560	113,319	9	9	9	100%	100%	784,006	338,040	1,731,182	-	-	-	100%	100%	-	-	-
Park Lot Lights	1	1	3	54,123	21,408	45,961	13	13	13	100%	100%	871,528	278,304	1,924,442	-	-	-	100%	100%	-	-	-
Process	11	3	28	176,655	315,427	150,016	12	17	12	100%	100%	22,872,308	16,129,303	50,504,884	-	-	-	100%	100%	-	-	-
CI Audits: Technical Assistance	1	1	1			-	1	1	1	100%	100%				-	-	-	100%	100%	-	-	
Program Summary*				**2,693,943**	**1,854,063**	**5,948,560**						**33,208,523**	**27,655,029**	**73,328,524**	**0**	**0**	**0**			**0**	**0**	**0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

PSNH d/b/a Eversource Energy
2020 System Benefits Charge ("SBC") Calculation
($ in 000's)

Year	EE Total Budget	RGGI Revenues	FCM Revenues	Other Revenues	Carryforward with Interest	Current Year Interest	SBC Requirement	Forecasted Distribution (MWH)	SBC Rate EE Portion (cents/kWh)	SBC Rate EAP Portion (cents/kWh)	SBC Rate LBR Portion (cents/kWh)	2020 Total SBC Rate (cents/kWh)
Col. A	Col. B*	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M
2020	$ 50,119	$ 1,847	$ 5,834	$ -	$ 1,252	$ 30	$ 41,186	7,800,306	0.528	0.150	0.075	0.753

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Company Forecast *Excludes Current Year Interest
Col. C: Company Forecast
Col. D: Company Forecast
Col. E: Company Forecast
Col. F: Page 2, Line 9 Col. N + Line 11 Col. O
Col. G: Page 3, Line 11, Col. O
Col. H: Col. B - Col. C - Col. D - Col. E - Col. F
Col. I: Company Forecast
Col. J: (Col. H / Col. I) x 100
Col. K: EAP Portion of SBC Rate
Col. L: Page 4, Col. G
Col. M: Col. J + Col. K + Col. L

PSNH d/b/a Eversource Energy
Energy Efficiency Expense & SBC Revenue Reconcilliation
January 1, 2019 to December 31, 2019
($ in 000's)

Line	Description	Carryover 12/31/2018	Actual Jan 2019	Actual Feb 2019	Actual Mar 2019	Actual Apr 2019	Actual May 2019	Actual Jun 2019	Actual Jul 2019	Forecast Aug 2019	Forecast Sep 2019	Forecast Oct 2019	Forecast Nov 2019	Forecast Dec 2019	2019 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	SBC Revenues		2,592	2,526	2,361	2,233	2,191	2,177	2,562	2,727	2,290	2,258	2,259	2,539	28,716
2	RGGI Revenues		-	-	-	465	-	465	-	-	462	-	-	462	1,853
3	FCM Revenues		611	611	611	611	612	612	466	481	481	481	481	481	6,537
4	Other Revenues		-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Total Revenues**		**3,203**	**3,137**	**2,972**	**3,309**	**2,803**	**3,253**	**3,027**	**3,208**	**3,232**	**2,739**	**2,740**	**3,482**	**37,105**
6	Program Expenses		403	761	2,906	1,649	2,512	2,746	2,374	4,476	4,476	4,476	4,476	4,476	35,733
7	**Total Program Expenses**		**403**	**761**	**2,906**	**1,649**	**2,512**	**2,746**	**2,374**	**4,476**	**4,476**	**4,476**	**4,476**	**4,476**	**35,733**
8	Current Month (Over)/Under Recovery		(2,800)	(2,375)	(65)	(1,660)	(290)	(508)	(654)	1,268	1,244	1,737	1,736	994	
9	Cumulative (Over)/Under Recovery	386	(2,414)	(4,789)	(4,854)	(6,514)	(6,805)	(7,312)	(7,966)	(6,698)	(5,454)	(3,717)	(1,981)	(987)	
10	Interest @ Prime Rate		0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.44%	0.44%	0.44%	0.44%	0.44%	
11	**Interest on Deferral Balance**		**(5)**	**(17)**	**(22)**	**(26)**	**(31)**	**(32)**	**(35)**	**(32)**	**(27)**	**(20)**	**(12)**	**(6)**	**(265)**
12	**Monthly Sales (MWh)**		695,005	677,246	632,976	598,783	587,390	583,560	686,764	731,116	613,858	605,369	605,717	680,793	7,698,577
13	**EE SBC Rate**		0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	

Line 1: (Line 12 x Line 13) / 100
Line 2: Page 1, Col. C
Line 3: Page 1, Col. D
Line 4: Page 1, Col. E
Line 5: Sum of Lines 1 through Lines 4
Line 6: Page 1, Col. B
Line 7: Sum of Line 6
Line 8: Line 7 - Line 5
Line 9: Prior month Line 9 + Current month Line 8
Line 10: Prime Rate / 12
Line 11: (Prior Month Line 9 + Current Month Line 9) / 2 x Line 10
Line 12: Company Forecast
Line 13: Page 1, Col. J

PSNH d/b/a Eversource Energy
Energy Efficiency Expense & SBC Revenue Reconcilliation
January 1, 2020 to December 31, 2020
($ in 000's)

Line	Description	Carryover 12/31/2019	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020*	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2020 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	SBC Revenues		3,711	3,445	3,435	3,136	3,194	3,424	3,865	3,860	3,227	3,162	3,146	3,580	41,186
2	RGGI Revenues		-	-	462	-	-	462	-	-	462	-	-	462	1,847
3	FCM Revenues		481	481	481	481	481	481	481	481	481	481	481	481	5,777
4	Other Revenues		-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Total Revenues**		**4,192**	**3,926**	**4,379**	**3,618**	**3,676**	**4,367**	**4,346**	**4,342**	**4,170**	**3,643**	**3,627**	**4,523**	**48,810**
6	Program Expenses		4,177	4,177	4,177	4,177	4,177	4,177	4,177	4,177	4,177	4,177	4,177	4,177	50,119
7	**Total Program Expenses**		**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**4,177**	**50,119**
8	Current Month (Over)/Under Recovery		(16)	250	(202)	559	501	(190)	(170)	(165)	6	533	549	(347)	
9	Cumulative (Over)/Under Recovery	(1,252)	(1,267)	(1,017)	(1,219)	(660)	(159)	(350)	(519)	(684)	(678)	(145)	404	58	
10	Interest @ Prime Rate		0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	
11	**Interest on Deferral Balance**		**(6)**	**(5)**	**(5)**	**(4)**	**(2)**	**(1)**	**(2)**	**(3)**	**(3)**	**(2)**	**1**	**1**	**(30)**
12	**Monthly Sales (MWh)**		702,789	652,464	650,645	593,980	604,996	648,412	731,998	731,104	611,219	598,801	595,841	678,058	7,800,306
13	**EE SBC Rate**		0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	

Line 1: (Line 12 x Line 13) / 100
Line 2: Page 1, Col. C
Line 3: Page 1, Col. D
Line 4: Page 1, Col. E
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Line 7: Sum of Line 6
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Line 9: Prior month Line 9 + Current month Line 8
Line 10: Prime Rate / 12
Line 11: (Prior Month Line 9 + Current Month Line 9) / 2 x Line 10
Line 12: Company Forecast
Line 13: Page 1, Col. J

PSNH d/b/a Eversource Energy
2020 System Benefits Charge Calculation (LBR Component)
($ in 000's)

Year	Forecasted LBR Revenue	Prior Year Deferral with Interest	Current Year Interest	Total LBR Revenue	Forecasted Distribution (MWH)	SBC Rate LBR Portion (cents/kWh)
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
2020	$ 5,446	$ 412	$ 22	$ 5,881	7,800,306	0.075

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Page 5, Line 21, Col. O / 1000
Col. C: Page 6, Line 7, Col. N
Col. D: Page 7, Line 6, Col. O
Col. E: Col. B + Col. C + Col. D
Col. F: Company Forecast
Col. G: (Col. E * 100) / Col. F

PSNH d/b/a Eversource Energy
Monthly and Cumulative Savings and Lost Base Revenue
January 1, 2020 to December 31, 2020

Line	Description	Cumulative Annual kWh Savings / Monthly kW Savings 12/31/2019	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020*	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2020 Annual kWh and Monthly kW Savings	Cumulative Annual kWh and Monthly kW Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O	
1	Residential Annual kWh Savings (2017, 2018, 2019, & 2020)	45,248,065	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	1,436,600	17,239,200	62,487,265
2	C&I Annual kWh Savings (2017 & 2018)	94,971,106	-	-	-	-	-	-	-	-	-	-	-	-	-	94,971,106
3	C&I Annual kWh Savings (2019 & 2020)	68,612,477	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	7,448,058	89,376,700	157,989,177
4	C&I Monthly Installed kW Savings	8,703	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	12,195	20,898

			Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	June 2020	Jul 2020	Aug 2020*	Sep 2020	Oct 2020	Nov 2020	Dec 2020	Total 2020 Lost Base Revenue
5	Monthly Residential Savings (2020)		59,858	59,858	59,858	59,858	59,858	59,858	59,858	59,858	59,858	59,858	59,858	59,858	
6	Cumulative Residential Savings	3,770,672	3,830,530	3,950,247	4,069,964	4,189,680	4,309,397	4,429,114	4,548,830	2,275,723	2,395,440	2,515,156	2,634,873	2,754,590	
7	Average Residential kWh Distribution Rate		0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	0.04037	
8	Total Lost Residential Revenue		$ 154,637	$ 159,470	$ 164,303	$ 169,136	$ 173,969	$ 178,801	$ 183,634	$ 91,870	$ 96,703	$ 101,536	$ 106,369	$ 111,202	$ 1,691,628
9	Monthly C&I Savings (2017 & 2018)	7,914,259	7,914,259	7,914,259	7,914,259	7,914,259	7,914,259	7,914,259	7,914,259	-	-	-	-	-	
10	Average C&I kWh Distribution Rate		0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	0.02609	
11	Lost C&I kWh Revenue		$ 206,499	$ 206,499	$ 206,499	$ 206,499	$ 206,499	$ 206,499	$ 206,499	$ -	$ -	$ -	$ -	$ -	
12	Monthly C&I Savings (2020)		310,336	310,336	310,336	310,336	310,336	310,336	310,336	310,336	310,336	310,336	310,336	310,336	
13	Cumulative C&I Savings	5,717,706	6,028,042	6,648,714	7,269,385	7,890,057	8,510,728	9,131,400	9,752,071	10,372,743	10,993,414	11,614,086	12,234,757	12,855,429	
14	Average C&I kWh Distribution Rate		0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	0.01028	
15	Lost C&I kWH Revenue		$ 61,967	$ 68,348	$ 74,728	$ 81,109	$ 87,489	$ 93,869	$ 100,250	$ 106,630	$ 113,011	$ 119,391	$ 125,772	$ 132,152	
16	Monthly C&I kW Savings (2020)		508	508	508	508	508	508	508	508	508	508	508	508	
17	Cumulative Monthly C&I kW Savings	8,703	9,211	10,227	11,243	12,260	13,276	14,292	15,308	16,325	17,341	18,357	19,373	20,390	
18	Average C&I Demand Rate		6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	6.44	
19	Lost C&I Demand Revenue		$ 59,358	$ 65,907	$ 72,456	$ 79,005	$ 85,554	$ 92,103	$ 98,652	$ 105,201	$ 111,750	$ 118,300	$ 124,849	$ 131,398	
20	Total Lost C&I kWh and Demand Revenue		$ 327,825	$ 340,754	$ 353,684	$ 366,613	$ 379,543	$ 392,472	$ 405,401	$ 211,832	$ 224,761	$ 237,691	$ 250,620	$ 263,550	$ 3,754,745
21	**Total Lost Revenue**		**$ 482,462**	**$ 500,224**	**$ 517,986**	**$ 535,749**	**$ 553,511**	**$ 571,273**	**$ 589,036**	**$ 303,702**	**$ 321,464**	**$ 339,226**	**$ 356,989**	**$ 374,751**	**$ 5,446,374**

* LBR reset for measures installed through 12/31/18 as part of DE 19-057 Rate Case
Lines 1-4: Company Forecast
Line 5: Line 1 / 24
Line 6: Prior Month Line 6 + Current Month Line 5
Line 7: Page 8, Column 8
Line 8: Line 6 x Line 7
Line 9: Line 1, Column B / 12
Line 10: Page 8, Column 8
Line 11: Line 9 x Line 10
Line 12: Line 3 / 24
Line 13: Prior Month Line 13 + Current Month Line 12
Line 14: Page 8, Column 7
Line 15: Line 13 x Line 14
Line 16: Line 4 / 12
Line 17: Prior Month Line 17 + Current Month Line 16
Line 18: Page 8, Column 6
Line 19: Line 17 x Line 18
Line 20: Line 11 + Line 15 + Line 19
Line 21: Line 8 + Line 20

PSNH d/b/a Eversource Energy
Lost Base Revenue Reconciliation
January 1, 2019 to December 31, 2019
($ in 000's)

Line	Description	Forecast Carryover 12/31/2018	Actual Jan 2019	Actual Feb 2019	Actual Mar 2019	Actual Apr 2019	Actual May 2019	Actual Jun 2019	Actual Jul 2019	Forecast Aug 2019	Forecast Sep 2019	Forecast Oct 2019	Forecast Nov 2019	Forecast Dec 2019	2019 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Revenue Recovery		438	427	399	377	370	368	433	461	387	381	382	429	4,850
2	Lost Revenues		438	427	399	377	405	368	433	418	433	448	463	477	5,084
3	Current Month (Over)/Under Recovery		0	(0)	(0)	(0)	35	0	0	(43)	46	66	81	48	234
4	Cumulative (Over)/Under Recovery	167	167	167	167	167	202	202	202	159	205	272	352	401	
5	Interest @ Prime Rate		0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.44%	0.44%	0.44%	0.44%	0.44%	
6	Interest on Deferral Balance		1	1	1	1	1	1	1	1	1	1	1	2	11
7	Cummulative (Over)/Under Recovery Incl Carrying Charge		167	168	169	170	206	206	207	166	213	280	362	412	
8	**Monthly Sales (MWh)**		695,005	677,246	632,976	598,783	587,390	583,560	686,764	731,116	613,858	605,369	605,717	680,793	7,698,577
9	**SBC Rate (LBR Component)**		0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	

Line 1: (Line 8 x Line 9) / 100
Line 2: Page 5, Line 21 / 1000
Line 3: Line 2 - Line 1
Line 4: Prior month Line 4 + Current month Line 3
Line 5: Prime Rate / 12
Line 6: (Prior Month Line 4 + Current Month Line 4) / 2 x Line 5
Line 7: Line 4 + Line 6
Line 8: Company Forecast
Line 9: Company Forecast

PSNH d/b/a Eversource Energy
Lost Base Revenue Reconciliation
January 1, 2020 to December 31, 2020
($ in 000's)

Line	Description	Forecast Carryover 12/31/2019	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020*	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2020 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Revenue Recovery		527	489	488	445	454	486	549	548	458	449	447	509	5,850
2	Lost Revenues		482	500	518	536	554	571	589	304	321	339	357	375	5,446
3	Current Month (Over)/Under Recovery		(45)	11	30	90	100	85	40	(245)	(137)	(110)	(90)	(134)	(404)
4	Cumulative (Over)/Under Recovery	412	368	379	409	499	599	684	724	479	342	232	142	8	
5	Interest @ Prime Rate		0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	
6	Interest on Deferral Balance		2	2	2	2	2	3	3	3	2	1	1	0	22
7	Cummulative (Over)/Under Recovery Incl Carrying Charge		369	382	414	506	608	696	739	497	362	253	164	31	
8	**Monthly Sales (MWh)**		702,789	652,464	650,645	593,980	604,996	648,412	731,998	731,104	611,219	598,801	595,841	678,058	7,800,306
9	**SBC Rate (LBR Component)**		0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	

Line 1: (Line 8 x Line 9) / 100
Line 2: Page 5, Line 21 / 1000
Line 3: Line 2 - Line 1
Line 4: Prior month Line 4 + Current month Line 3
Line 5: Prime Rate / 12
Line 6: (Prior Month Line 4 + Current Month Line 4) / 2 x Line 5
Line 7: Line 4 + Line 6
Line 8: Company Forecast
Line 9: Company Forecast

Eversource
Calculation of Forecasted Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants and Distribution Rates*

For the Period 07/01/18 Through 06/30/19

	(1)	(2)	(3) = (1) + (2)	(4)	(5)	(6) = (1) + (4)	(7) = (2) / (5)	(8) = (3) / (5)
	Revenue					Average	Average	Average
	Demand	kWh	Total Demand	Delivery	Delivery	Distribution Rate	Distribution Rate	Distribution Rate
Rate Class	Charges	Charges	and kWh Charges	kW	kWh	$/kW	$/kWh[a]	$/kWh[b]
Residential	$ -	$ 131,195,817	$ 131,195,817	$ -	3,249,868,716	**N/A**	**N/A**	**$ 0.04037**
General Service Rate G	$ 35,321,764	$ 31,374,953	$ 66,696,717	4,046,266	1,709,450,732	$ 7.75	$ 0.01835	$ 0.03902
Primary General Service Rate GV	$ 22,759,682	$ 9,793,092	$ 32,552,774	4,197,661	1,649,988,770	$ 2.33	$ 0.00594	$ 0.01973
Large General Service Rate LG	$ 13,617,216	$ 5,444,911	$ 19,062,127	2,881,986	1,174,957,392	$ 1.89	$ 0.00463	$ 0.01622
Commercial and Industrial	$ 71,698,662	$ 46,612,956	$ 118,311,618	11,125,913	4,534,396,894	**$ 6.44**	**$ 0.01028**	**$ 0.02609**

* Excludes the outdoor lighting rates (Rate OL and Rate EOL), the Customer/Meter charge revenue from each rate, and the on/off peak kWh associated with Rate B >= 115 kV under Rate LG.
(a) For 2019 and 2020 C&I Savings
(b) For 2017 and 2018 C&I Savings

Bill Impacts of Changes in System Benefits Charge - PSNH d/b/a Eversource Energy

	Current Rates*	2020
System Benefits Charge ($/kWh)	$ 0.00586	$ 0.00753
Bill per month, including PSNH default energy service		
Residential Rate R (625 kWh/month)	$ 125.84	$ 126.89
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)	$ 1,828.52	$ 1,845.30
Change from previous rate level - $ per month		
Residential Rate R (625 kWh/month)		$ 1.05
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		$ 16.78
Change from previous rate level - %		
Residential Rate R (625 kWh/month)		0.8%
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		0.9%

* Stated at Eversource's rate levels effective August 1, 2018 - January 31, 2019

Eversource

Calculation of Distribution Revenue at the Rate Levels in Effect July 2018 - June 2019

Based on Billing Determinants for the Twelve Months Ending June 2019

Residential Rate R

Rate	Source	July 1, 2018 - June 30, 2019 Units	Rate/Charge	Revenue
Standard	Customer Charge	5,286,079	$ 12.69	$ 67,080,343
	All kWh	3,121,777,392	$ 0.04141	$ 129,272,802
Uncontrolled Water Heating	Customer Charge	506,285	$ 4.47	$ 2,263,094
	All kWh	91,135,854	$ 0.02030	$ 1,850,058
Controlled Water Heating	Customer Charge	2,918	$ 7.88	$ 22,994
	All kWh	524,553	$ 0.00120	$ 629.5
LCS - Radio-controlled & 8 Hour Switch	Customer Charge	40,798	$ 9.11	$ 371,670
	All kWh	35,355,880	$ 0.00120	$ 42,427
LCS - 8 Hour No Switch	Customer Charge	1,183	$ 7.88	$ 9,322
	All kWh	336,552	$ 0.00120	$ 404
LCS - 10,11 Hour Switch	Customer Charge	57	$ 9.11	$ 519
	All kWh	12,585	$ 0.02448	$ 308
LCS - 10,11 Hour No Switch	Customer Charge	1,119	$ 7.88	$ 8,818
	All kWh	252,948	$ 0.02448	$ 6,192
Time of Day	Customer Charge	498	$ 29.47	$ 14,676
	On Peak kWh	169,331	$ 0.13235	$ 22,411
	Off Peak kWh	303,622	$ 0.00193	$ 586
Total Residential	Customer/Meter	5,838,937		$ 69,771,435
	Demand	-		-
	kWh	3,249,868,716		$ 131,195,817
				$ 200,967,252

General Service Rate G

Rate	Source	July 1, 2018 - June 30, 2019 Units	Rate/Charge	Revenue
Standard	Single Phase Customer Charge	675,014	$ 14.89	$ 10,050,958
	Three Phase Customer Charge	239,567	$ 29.76	$ 7,129,514
	Demand Charge > 5 kW	4,035,091	$ 8.72	$ 35,185,995
	First 500 kWh Charge	273,721,775	$ 0.06986	$ 19,122,203
	Next 1,000 kWh Charge	292,417,611	$ 0.01731	$ 5,061,749
	All Additional kWh Charge	1,129,571,061	$ 0.00612	$ 6,912,975
Time of Day	Single Phase Customer Charge	186	$ 38.57	$ 7,174
	Three Phase Customer Charge	261	$ 55.12	$ 14,386
	Demand Charge	11,174	$ 12.15	$ 135,769
	On peak kWh	332,611	$ 0.04901	$ 16,301
	Off peak kWh	520,671	$ 0.00768	$ 3,999
Space Heating	Meter Charge	4,926	$2.98	$ 14,679
	All kWh	5,298,334	$ 0.03426	$ 181,521
Uncontolled Water Heating	Customer Charge	15,007	$ 4.47	$ 67,081
	All kWh	3,420,255	$ 0.02030	$ 69,431
Controlled Water Heating	Customer Charge	-	$ 7.88	$ -
	All kWh	-	$ 0.00120	$ -
LCS - Radio-controlled & 8 Hour Switch	Customer Charge	2,253	$ 9.11	$ 20,525
	All kWh	4,026,678	$ 0.00120	$ 4,832
LCS - 8 Hour No Switch	Customer Charge	72	$ 7.88	$ 567

	All kWh	65,615	$	0.00120	$	79
LCS - 10,11 Hour Switch	Customer Charge	-	$	9.11	$	-
	All kWh	-	$	0.00120	$	-
LCS - 10,11 Hour No Switch	Customer Charge	23	$	7.88	$	181
	All kWh	76,120	$	0.02448	$	1,863
Total General Service	Customer/Meter	937,309			$	17,305,067
	Demand	4,046,266			$	35,321,764
	kWh	1,709,450,732			$	31,374,953
					$	84,001,784

Primary General Service Rate GV

Rate	Source	July 1, 2018 - June 30, 2019 Units		Rate/Charge		Revenue
Standard	Customer Charge	16,639	$	194.03	$	3,228,465
	Minimum Charge	348	$	893.00	$	310,764
	First 100 kW Demand Charge	1,563,700	$	5.58	$	8,725,446
	All Additional kW Demand Charge	2,597,780	$	5.34000	$	13,872,145
	First 200,000 kWh	1,434,905,655	$	0.00606	$	8,695,528
	All Additional kWh	212,206,386	$	0.00509	$	1,080,131
Rate B < 115 KV	Administrative Charge	127	$	341.84	$	43,414
	Translation Charge	-	$	57.34	$	-
	Demand Charge	36,181	$	4.48	$	162,091
	First 200,000 kWh	2,876,729	$	0.00606	$	17,433
	All Additional kWh	-	$	0.00509	$	-
Space Heating	Meter Charge	-			$	-
	All kWh	-			$	-
Total GV	Customer/Meter	16,766			$	3,582,643
	Demand	4,197,661			$	22,759,682
	kWh	1,649,988,770			$	9,793,092
					$	36,135,417

Large General Service Rate LG

Rate	Source	July 1, 2018 - June 30, 2019 Units		Rate/Charge		Revenue
Standard	Customer Charge	1,276	$	606.47	$	773,856
	Demand Charge	2,614,512	$	4.75	$	12,418,932
	On peak kWh	501,928,315	$	0.00508	$	2,549,796
	Off Peak kWh	654,881,492	$	0.00429	$	2,809,442
Rate B < 115 KV	Administrative Charge	114	$	341.84	$	38,970
	Translation Charge	24	$	57.34	$	1,376
	Demand charge	267,474	$	4.48	$	1,198,284
	On peak kWh	9,899,828	$	0.00508	$	50,291
	Off Peak kWh	8,247,757	$	0.00429	$	35,383
Rate B >= 115 KV	Administrative Charge	86	$	341.84	$	29,398
	Translation Charge	-	$	57.34	$	-
	Demand charge	1,155,454	$	-	$	-
	On peak kWh	21,967,130	$	-	$	-
	Off Peak kWh	43,187,962	$	-	$	-
Total LG	Customer/Meter	1,476			$	843,600
	Demand	4,037,440			$	13,617,216
	kWh	1,240,112,484			$	5,444,911
					$	19,905,727

Outdoor Lighting Rate OL

Type	Fixture	July 1, 2018 - June 30, 2019 Units	Rate/Charge	Revenue
High Pressure Sodium	4,000 Lumens	42,695	$ 15.83	$ 675,862
	5,800 Lumens	7,288	$ 15.83	$ 115,366
	9,500 Lumens	10,975	$ 21.05	$ 231,027
	16,000 Lumens	9,923	$ 29.77	$ 295,401
	30,000 Lumens	15,512	$ 30.51	$ 473,258
	50,000 Lumens	22,865	$ 30.85	$ 705,393
	130,000 Lumens	4,146	$ 49.51	$ 205,244
	12,000 Lumens	98	$ 21.77	$ 2,133
	34,200 Lumens	60	$ 27.87	$ 1,672
Mercury	3,500 Lumens	58,940	$ 13.96	$ 822,807
	7,000 Lumens	11,383	$ 16.80	$ 191,233
	11,000 Lumens	741	$ 20.77	$ 15,391
	20,000 Lumens	5,058	$ 25.65	$ 129,745
	56,000 Lumens	1,641	$ 40.77	$ 66,895
	15,000 Lumens	36	$ 23.76	$ 855
Metal Halide	5,000 Lumens	2,731	$ 16.51	$ 45,092
	8,000 Lumens	1,601	$ 22.60	$ 36,182
	13,500 Lumens	1,491	$ 31.67	$ 47,232
	20,000 Lumens	3,666	$ 31.67	$ 116,094
	36,000 Lumens	5,418	$ 31.96	$ 173,165
	100,000 Lumens	3,223	$ 47.91	$ 154,398
Incandescent	600 Lumens	1,061	$ 9.12	$ 9,676
	1,000 Lumens	2,811	$ 10.18	$ 28,616
	2,500 Lumens	28	$ 13.06	$ 366
Fluorescent	20,000 Lumens	24	$ 34.79	$ 835
Total Rate OL	Fixtures	213,415		$ 4,543,939
	Demand	-		
	kWh	17,180,251		
				$ 4,543,939

Outdoor Lighting Rate EOL

Type	Fixture	July 1, 2018 - June 30, 2019 Units	Rate/Charge	Revenue
High Pressure Sodium	4,000 Lumens	51,546	$ 8.42	$ 434,017
	5,800 Lumens	2,465	$ 8.42	$ 20,755
	9,500 Lumens	5,218	$ 10.36	$ 54,058
	16,000 Lumens	6,896	$ 11.39	$ 78,545
	30,000 Lumens	21,702	$ 11.39	$ 247,186
	50,000 Lumens	1,562	$ 11.76	$ 18,369
	130,000 Lumens	682	$ 22.32	$ 15,222
Metal Halide	5,000 Lumens	9,458	$ 8.75	$ 82,758
	8,000 Lumens	1,043	$ 11.57	$ 12,068
	13,000 Lumens	-	$ 12.35	$ -
	13,500 Lumens	1,063	$ 13.00	$ 13,819
	20,000 Lumens	846	$ 13.22	$ 11,184
	36,000 Lumens	513	$ 13.59	$ 6,972
	100,000 Lumens	1,236	$ 24.21	$ 29,924

LED's	Per Fixture	380,162	$ 3.37	$	1,281,146
	Per Watt	15,401,338	$ 0.0513	$	790,089
	Maintenance credit (contract)	12	($1.90)	$	(23)
Total Rate EOL	Fixtures	484,392		$	3,096,089
	Demand	-		$	-
	kWh	11,028,776		$	-
				$	3,096,089

Total Retail

Type	Source	July 1, 2018 - June 30, 2019 Units	Revenue
Total Retail	Customer/Meter	6,794,488	$ 91,502,745
	Fixtures	697,807	$ 7,640,028
	Demand	12,281,367	$ 71,698,662
	kWh	7,877,629,729	$ 177,808,774
			$ 348,650,208

Lost Base Revenue

Summary of Data Included in the Calculation of the Average Distribution Rates*

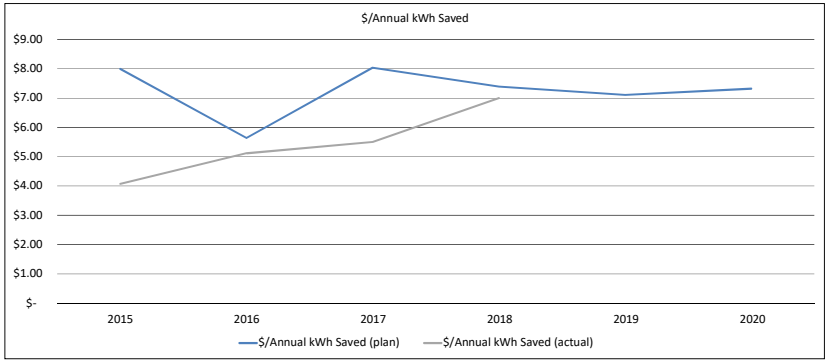
Type	Source	July 1, 2018 - June 30, 2019 Units	Revenue
Total Residential	Demand	-	$ -
	kWh	3,249,868,716	$ 131,195,817
			$ 131,195,817
Total General Service	Demand	4,046,266	$ 35,321,764
	kWh	1,709,450,732	$ 31,374,953
			$ 66,696,717
Total GV	Demand	4,197,661	$ 22,759,682
	kWh	1,649,988,770	$ 9,793,092
			$ 32,552,774
Total LG	Demand	2,881,986	$ 13,617,216
	kWh	1,174,957,392	$ 5,444,911
			$ 19,062,127
Total	Demand	11,125,913	$ 71,698,662
	kWh	7,784,265,610	$ 177,808,774
			$ 249,507,435

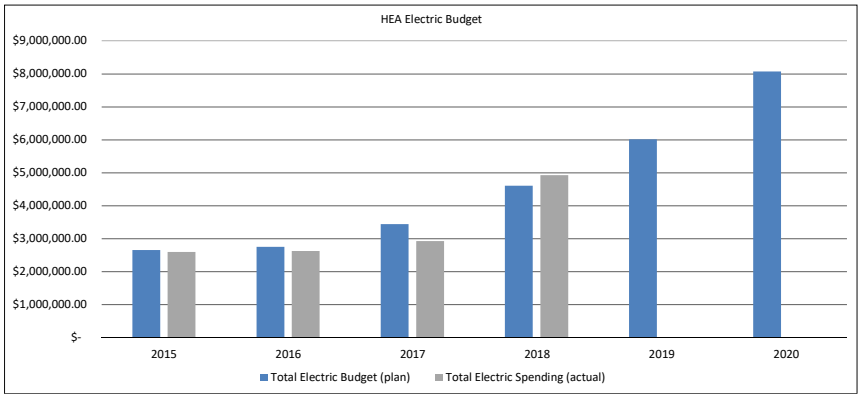
* The Lost Base Revenue calculation excludes the outdoor lighting rates (Rate OL and Rate EOL), the Customer/Meter charge revenue from each rate, and the on/off peak kWh associated with Rate B >= 115 kV under Rate LG.

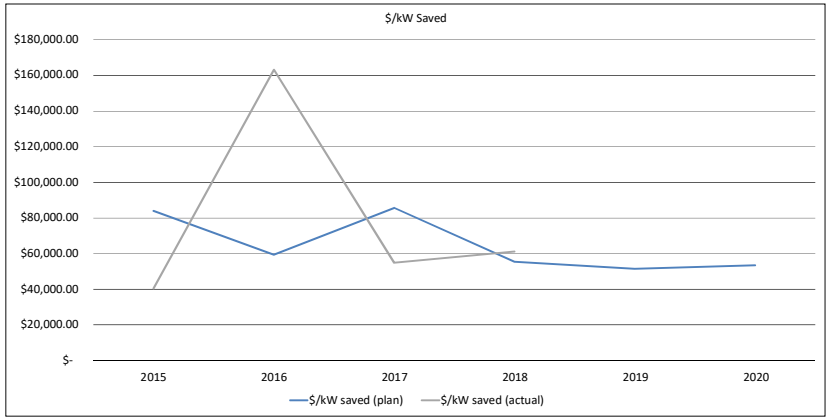
Home Energy Assistance

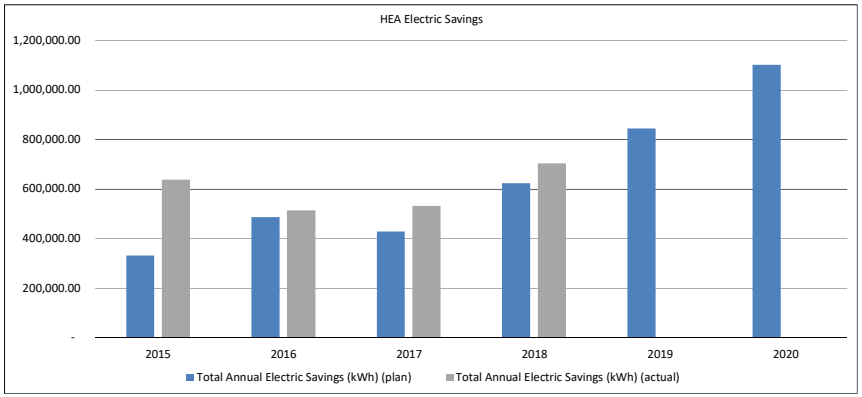
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 2,661,464.00	$ 2,751,286.00	$ 3,450,394.00	$ 4,611,266.00	$ 6,015,106.66	$ 8,076,318.93
	Total Annual Electric Savings (kWh) (plar	332,704.68	487,614.55	429,219.81	623,609.04	845,586.10	1,102,644.60
	$/Annual kWh Saved (plan)	$ 8.00	$ 5.64	$ 8.04	$ 7.39	$ 7.11	$ 7.32
2)	Total Electric Budget	$ 2,661,464.00	$ 2,751,286.00	$ 3,450,394.00	$ 4,611,266.00	$ 6,015,106.66	$ 8,076,318.93
	Total kW saved	31.70	46.33	40.26	83.25	116.74	151.12
	$/kW saved (plan)	$ 83,961.98	$ 59,383.90	$ 85,705.87	$ 55,388.90	$ 51,526.89	$ 53,442.66
3)	Total Electric Budget	$ 2,661,464.00	$ 2,751,286.00	$ 3,450,394.00	$ 4,611,266.00	$ 6,015,106.66	$ 8,076,318.93
	Total Fuel Neutral MMBtu Saved	7,527.20	8,371.96	11,489.26	14,683.27	21,015.45	26,820.91
	$/Total Fuel Neutral MMBtu Saved (plan	$ 353.58	$ 328.63	$ 300.31	$ 314.05	$ 286.22	$ 301.12

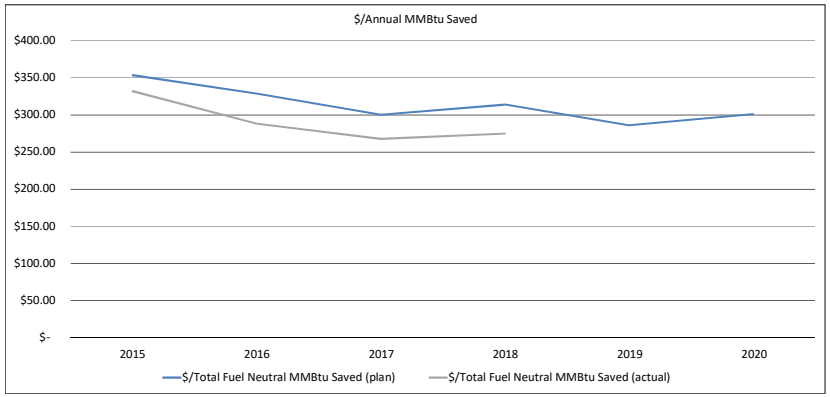
Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 2,602,622.35	$ 2,630,799.37	$ 2,930,672.42	$ 4,934,976.47
	Total Annual Electric Savings (kWh) (actu	638,554.22	514,041.71	532,325.13	704,706.70
	$/Annual kWh Saved (actual)	$ 4.08	$ 5.12	$ 5.51	$ 7.00
2)	Total Electric Spending	$ 2,602,622.35	$ 2,630,799.37	$ 2,930,672.42	$ 4,934,976.47
	Total kW saved	64.34	16.12	53.36	80.75
	$/kW saved (actual)	$ 40,451.13	$ 163,221.09	$ 54,918.84	$ 61,113.05
3)	Total Electric Spending	$ 2,602,622.35	$ 2,630,799.37	$ 2,930,672.42	$ 4,934,976.47
	Total Fuel Neutral MMBtu Saved	7,839.29	9,126.57	10,943.68	17,951.87
	$/Total Fuel Neutral MMBtu Saved (actu	$ 332.00	$ 288.26	$ 267.80	$ 274.90







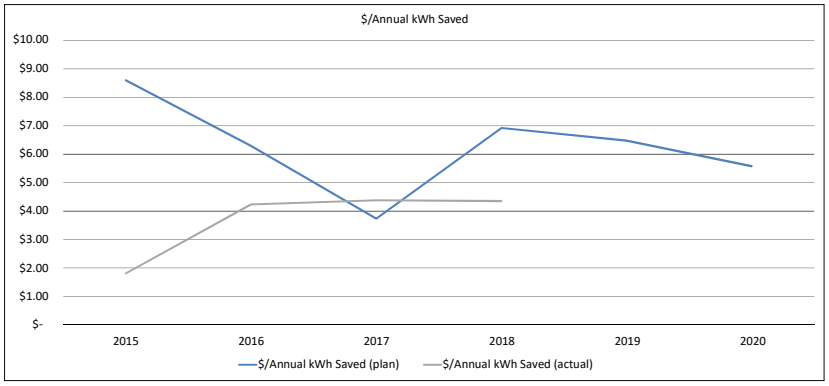


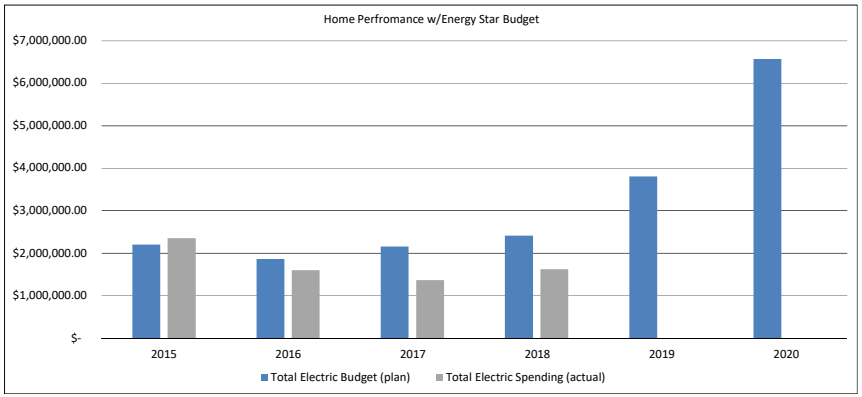


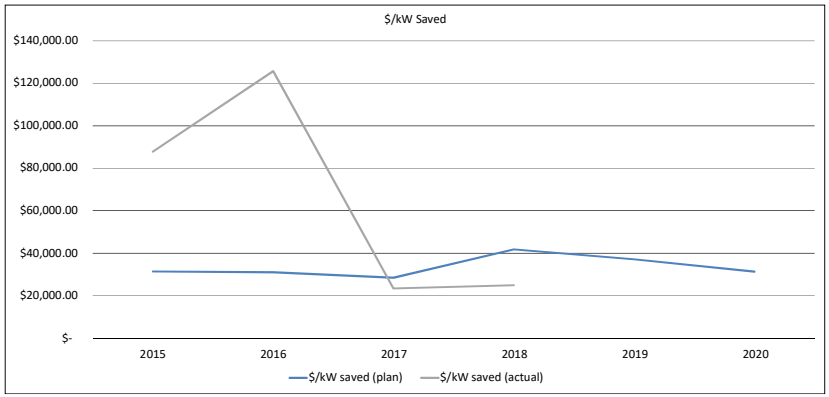
Home Performance w/Energy Star

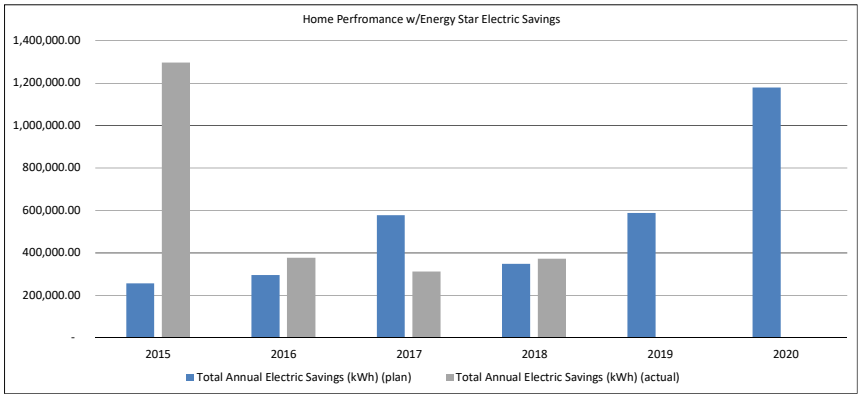
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 2,203,268.95	$ 1,860,400.33	$ 2,161,078.61	$ 2,415,741.54	$ 3,808,340.70	$ 6,577,509.32
	Total Annual Electric Savings (kWh) (plar	256,056.96	295,674.17	578,126.50	348,885.75	587,878.50	1,178,594.79
	$/Annual kWh Saved (plan)	$ 8.60	$ 6.29	$ 3.74	$ 6.92	$ 6.48	$ 5.58
2)	Total Electric Budget	$ 2,203,268.95	$ 1,860,400.33	$ 2,161,078.61	$ 2,415,741.54	$ 3,808,340.70	$ 6,577,509.32
	Total kW saved	70.29	59.98	75.98	57.84	102.69	210.06
	$/kW saved (plan)	$ 31,344.04	$ 31,015.03	$ 28,442.09	$ 41,764.27	$ 37,085.52	$ 31,312.53
3)	Total Electric Budget	$ 2,203,268.95	$ 1,860,400.33	$ 2,161,078.61	$ 2,415,741.54	$ 3,808,340.70	$ 6,577,509.32
	Total Fuel Neutral MMBtu Saved	13,764.71	11,649.95	15,376.05	16,650.12	31,408.42	58,069.10
	$/Total Fuel Neutral MMBtu Saved (plan	$ 160.07	$ 159.69	$ 140.55	$ 145.09	$ 121.25	$ 113.27

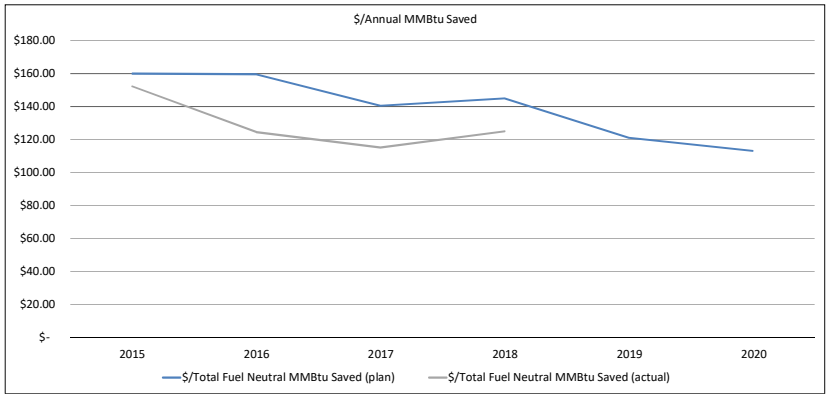
Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 2,349,224.06	$ 1,599,052.72	$ 1,365,080.05	$ 1,623,435.97
	Total Annual Electric Savings (kWh) (actu	1,297,571.81	377,818.52	311,703.00	373,104.96
	$/Annual kWh Saved (actual)	$ 1.81	$ 4.23	$ 4.38	$ 4.35
2)	Total Electric Spending	$ 2,349,224.06	$ 1,599,052.72	$ 1,365,080.05	$ 1,623,435.97
	Total kW saved	26.75	12.71	58.41	65.33
	$/kW saved (actual)	$ 87,835.36	$ 125,789.42	$ 23,371.81	$ 24,850.64
3)	Total Electric Spending	$ 2,349,224.06	$ 1,599,052.72	$ 1,365,080.05	$ 1,623,435.97
	Total Fuel Neutral MMBtu Saved	15,422.74	12,836.50	11,843.32	12,974.04
	$/Total Fuel Neutral MMBtu Saved (actu	$ 152.32	$ 124.57	$ 115.26	$ 125.13







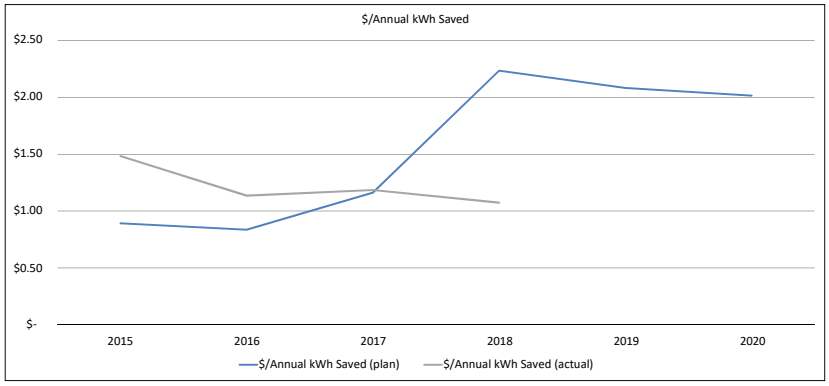


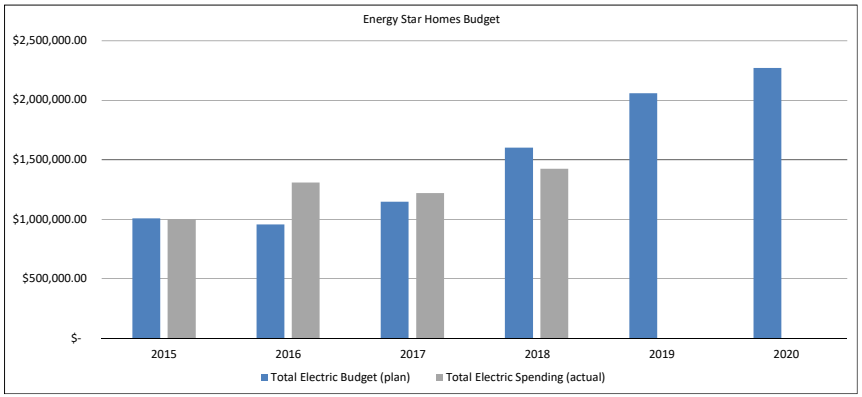


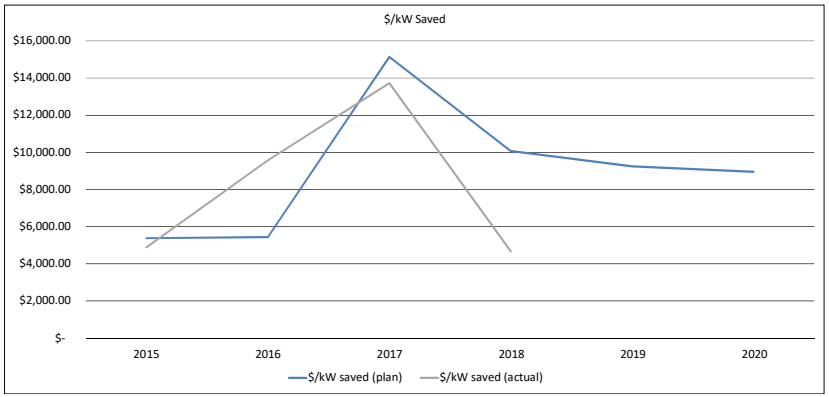
Energy Star Homes

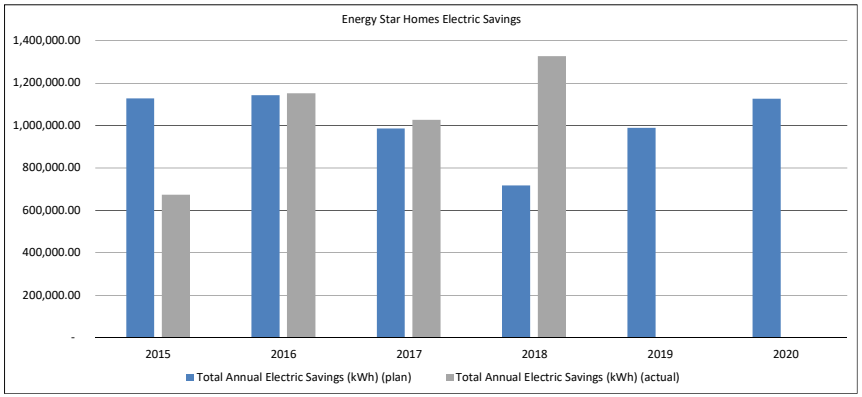
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 1,006,618.95	$ 957,269.48	$ 1,147,210.86	$ 1,603,217.35	$ 2,060,103.01	$ 2,271,812.43
	Total Annual Electric Savings (kWh) (plar	1,127,834.31	1,143,193.79	986,318.15	717,397.53	989,389.19	1,127,346.10
	$/Annual kWh Saved (plan)	$ 0.89	$ 0.84	$ 1.16	$ 2.23	$ 2.08	$ 2.02
2)	Total Electric Budget	$ 1,006,618.95	$ 957,269.48	$ 1,147,210.86	$ 1,603,217.35	$ 2,060,103.01	$ 2,271,812.43
	Total kW saved	187.30	176.08	75.75	159.13	222.81	253.71
	$/kW saved (plan)	$ 5,374.24	$ 5,436.52	$ 15,143.81	$ 10,075.13	$ 9,245.91	$ 8,954.39
3)	Total Electric Budget	$ 1,006,618.95	$ 957,269.48	$ 1,147,210.86	$ 1,603,217.35	$ 2,060,103.01	$ 2,271,812.43
	Total Fuel Neutral MMBtu Saved	5,158.61	5,177.38	9,335.70	7,781.99	11,505.24	11,436.23
	$/Total Fuel Neutral MMBtu Saved (plan	$ 195.13	$ 184.89	$ 122.88	$ 206.02	$ 179.06	$ 198.65

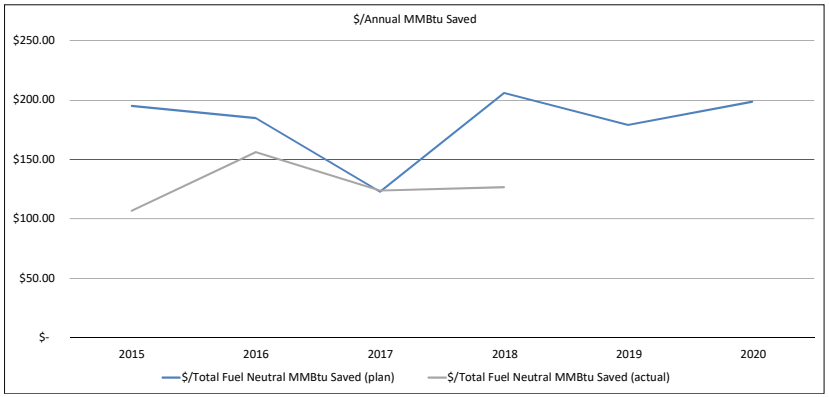
Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 1,000,669.85	$ 1,309,689.49	$ 1,218,908.50	$ 1,426,308.42
	Total Annual Electric Savings (kWh) (actu	674,639.98	1,153,065.16	1,027,593.90	1,327,854.25
	$/Annual kWh Saved (actual)	$ 1.48	$ 1.14	$ 1.19	$ 1.07
2)	Total Electric Spending	$ 1,000,669.85	$ 1,309,689.49	$ 1,218,908.50	$ 1,426,308.42
	Total kW saved	204.73	136.81	88.78	305.62
	$/kW saved (actual)	$ 4,887.75	$ 9,572.72	$ 13,729.43	$ 4,666.98
3)	Total Electric Spending	$ 1,000,669.85	$ 1,309,689.49	$ 1,218,908.50	$ 1,426,308.42
	Total Fuel Neutral MMBtu Saved	9,364.77	8,379.13	9,833.29	11,250.73
	$/Total Fuel Neutral MMBtu Saved (actu	$ 106.85	$ 156.30	$ 123.96	$ 126.77







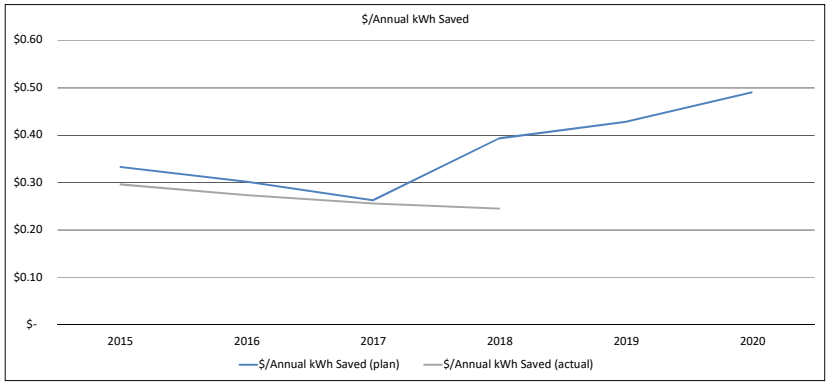


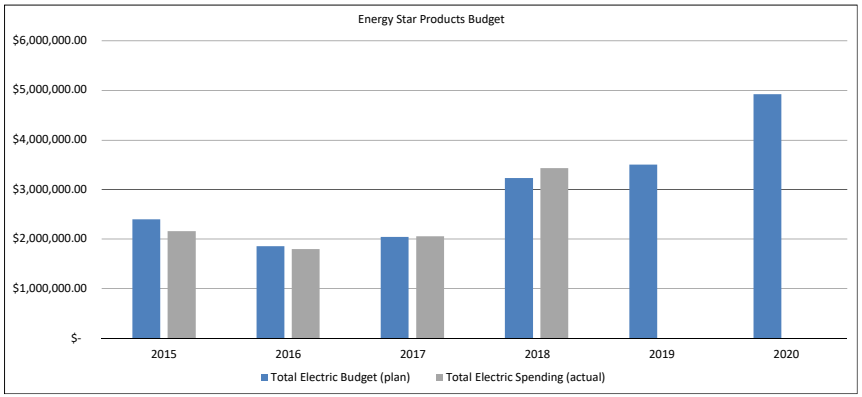


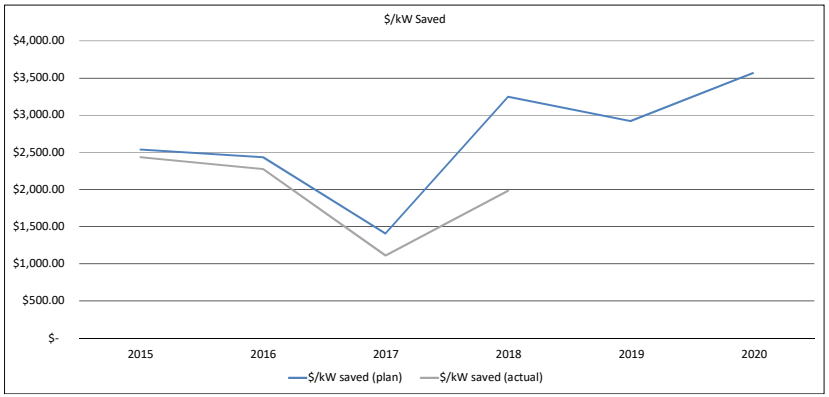
Energy Star Products

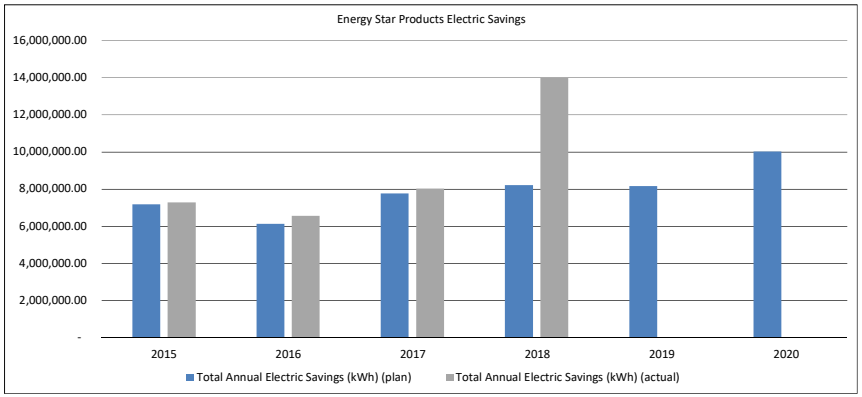
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Total Electric Budget (plan)	$ 2,397,437.10	$ 1,853,017.79	$ 2,044,263.55	$ 3,235,076.39	$ 3,502,801.21	$ 4,924,659.92
	Total Annual Electric Savings (kWh) (plar	7,197,903.64	6,137,671.04	7,773,228.53	8,217,144.12	8,177,720.12	10,038,606.84
	$/Annual kWh Saved (plan)	$ 0.33	$ 0.30	$ 0.26	$ 0.39	$ 0.43	$ 0.49
2)	Total Electric Budget	$ 2,397,437.10	$ 1,853,017.79	$ 2,044,263.55	$ 3,235,076.39	$ 3,502,801.21	$ 4,924,659.92
	Total kW saved	944.51	761.13	1,452.08	996.25	1,198.26	1,380.83
	$/kW saved (plan)	$ 2,538.28	$ 2,434.55	$ 1,407.82	$ 3,247.25	$ 2,923.23	$ 3,566.44
3)	Total Electric Budget	$ 2,397,437.10	$ 1,853,017.79	$ 2,044,263.55	$ 3,235,076.39	$ 3,502,801.21	$ 4,924,659.92
	Total Fuel Neutral MMBtu Saved	2,839.32	1,998.41	681.99	2,545.57	2,709.02	3,560.83
	$/Total Fuel Neutral MMBtu Saved (plan	$ 844.37	$ 927.25	$ 2,997.51	$ 1,270.86	$ 1,293.01	$ 1,383.01

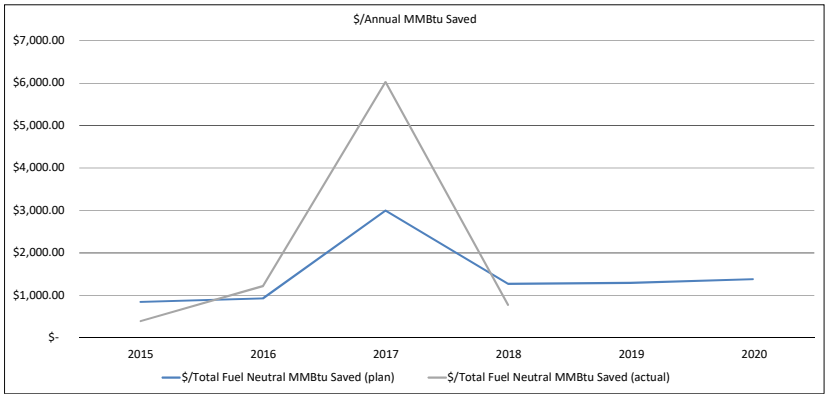
Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Spending (actual)	$ 2,159,065.92	$ 1,799,457.82	$ 2,058,666.85	$ 3,432,567.81
	Total Annual Electric Savings (kWh) (actu	7,288,383.41	6,571,188.82	8,039,990.99	13,993,423.29
	$/Annual kWh Saved (actual)	$ 0.30	$ 0.27	$ 0.26	$ 0.25
2)	Total Electric Spending	$ 2,159,065.92	$ 1,799,457.82	$ 2,058,666.85	$ 3,432,567.81
	Total kW saved	886.37	790.47	1,851.20	1,731.45
	$/kW saved (actual)	$ 2,435.84	$ 2,276.43	$ 1,112.07	$ 1,982.48
3)	Total Electric Spending	$ 2,159,065.92	$ 1,799,457.82	$ 2,058,666.85	$ 3,432,567.81
	Total Fuel Neutral MMBtu Saved	5,526.86	1,478.74	341.59	4,447.45
	$/Total Fuel Neutral MMBtu Saved (actu	$ 390.65	$ 1,216.89	$ 6,026.76	$ 771.81







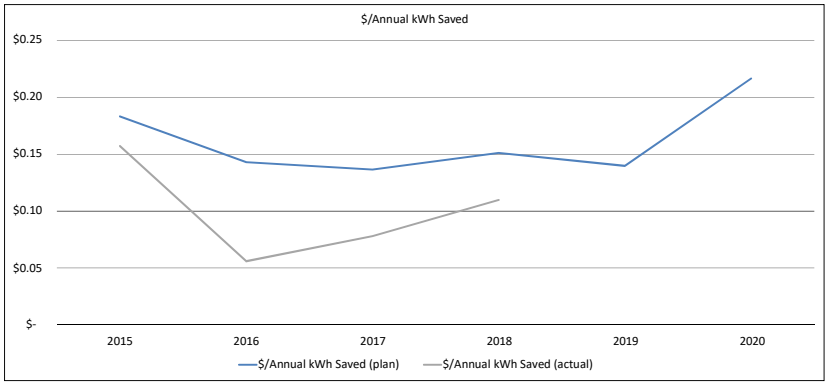


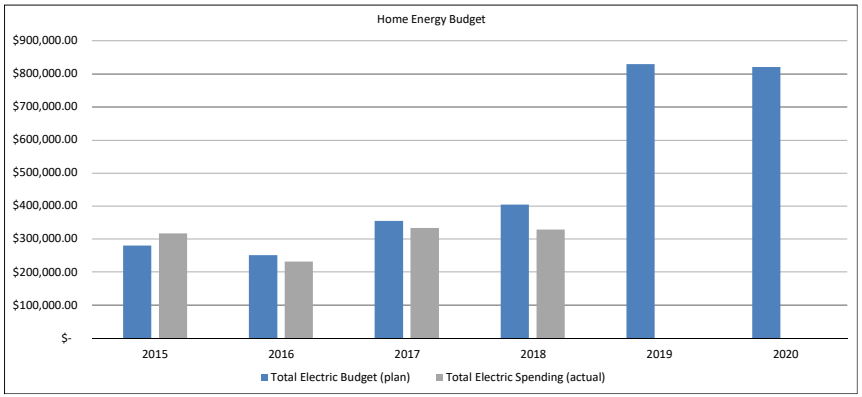


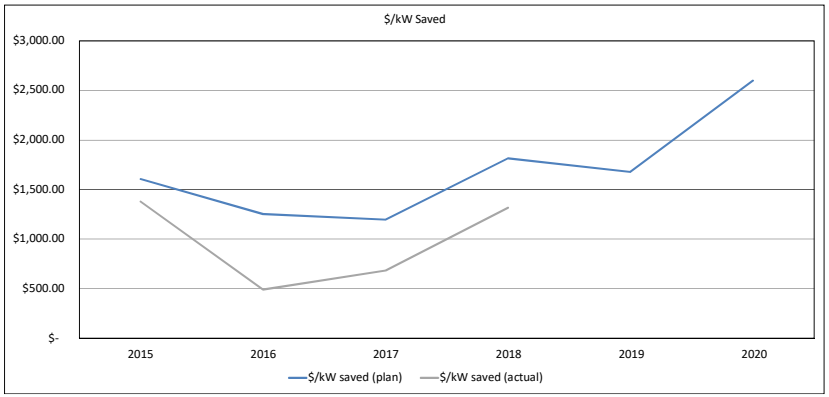
Home Energy Reports

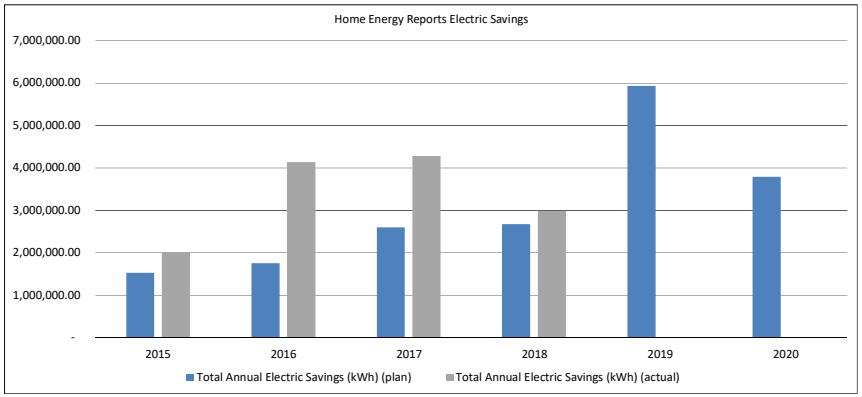
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Total Electric Budget (plan)	$ 280,402.00	$ 251,006.39	$ 355,117.61	$ 404,663.00	$ 829,581.11	$ 821,196.27
	Total Annual Electric Savings (kWh) (plar	1,529,834.00	1,755,680.67	2,600,000.00	2,675,775.15	5,933,600.00	3,792,000.00
	$/Annual kWh Saved (plan)	$ 0.18	$ 0.14	$ 0.14	$ 0.15	$ 0.14	$ 0.22
2)	Total Electric Budget	$ 280,402.00	$ 251,006.39	$ 355,117.61	$ 404,663.00	$ 829,581.11	$ 821,196.27
	Total kW saved	174.64	200.42	296.80	222.98	494.47	316.00
	$/kW saved (plan)	$ 1,605.60	$ 1,252.40	$ 1,196.47	$ 1,814.78	$ 1,677.73	$ 2,598.72
3)	Total Electric Budget	$ 280,402.00	$ 251,006.39	$ 355,117.61	$ 404,663.00	$ 829,581.11	$ 821,196.27
	Total Fuel Neutral MMBtu Saved						
	$/Total Fuel Neutral MMBtu Saved (plan)						

Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Spending (actual)	$ 316,754.26	$ 231,662.02	$ 333,867.14	$ 328,178.45
	Total Annual Electric Savings (kWh) (actu	2,013,872.00	4,142,136.00	4,283,639.00	2,990,649.57
	$/Annual kWh Saved (actual)	$ 0.16	$ 0.06	$ 0.08	$ 0.11
2)	Total Electric Spending	$ 316,754.26	$ 231,662.02	$ 333,867.14	$ 328,178.45
	Total kW saved	229.89	472.85	489.00	249.22
	$/kW saved (actual)	$ 1,377.83	$ 489.93	$ 682.76	$ 1,316.82
3)	Total Electric Spending	$ 316,754.26	$ 231,662.02	$ 333,867.14	$ 328,178.45
	Total Fuel Neutral MMBtu Saved				
	$/Total Fuel Neutral MMBtu Saved (actual)				





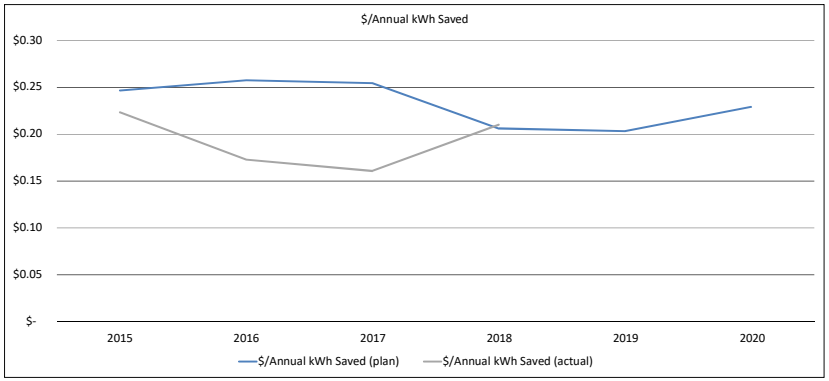


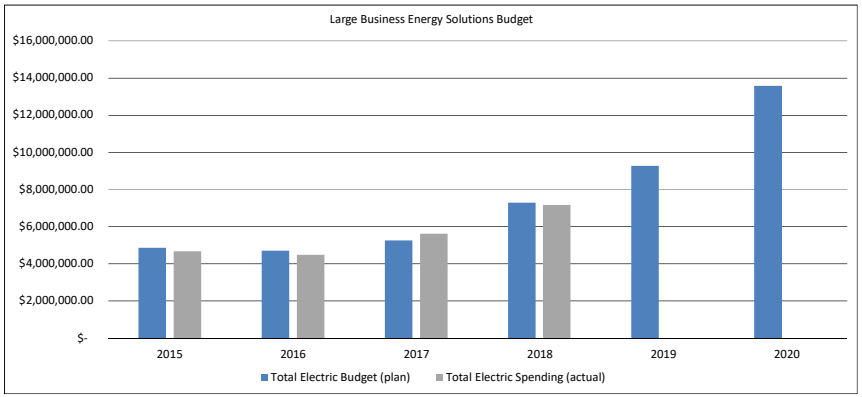


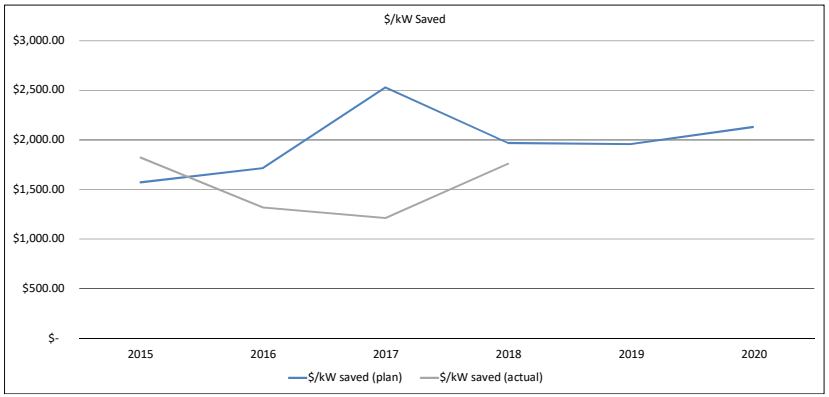
Large Business Energy Solutions

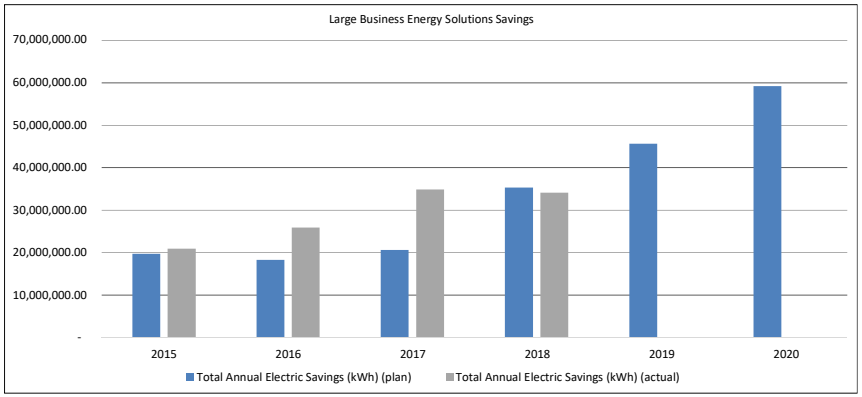
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 4,858,386.57	$ 4,704,790.31	$ 5,257,680.00	$ 7,291,994.08	$ 9,277,317.90	$ 13,583,836.37
	Total Annual Electric Savings (kWh) (plar	19,691,600.38	18,265,965.37	20,649,114.70	35,375,682.52	45,645,047.14	59,273,604.82
	$/Annual kWh Saved (plan)	$ 0.25	$ 0.26	$ 0.25	$ 0.21	$ 0.20	$ 0.23
2)	Total Electric Budget	$ 4,858,386.57	$ 4,704,790.31	$ 5,257,680.00	$ 7,291,994.08	$ 9,277,317.90	$ 13,583,836.37
	Total kW saved	3,090.57	2,739.43	2,076.70	3,702.66	4,740.28	6,375.44
	$/kW saved (plan)	$ 1,572.00	$ 1,717.44	$ 2,531.75	$ 1,969.39	$ 1,957.13	$ 2,130.65
3)	Total Electric Budget	$ 4,858,386.57	$ 4,704,790.31	$ 5,257,680.00	$ 7,291,994.08	$ 9,277,317.90	$ 13,583,836.37
	Total Fuel Neutral MMBtu Saved						
	$/Total Fuel Neutral MMBtu Saved (plan)						

Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 4,674,280.43	$ 4,476,682.34	$ 5,610,438.18	$ 7,168,041.24
	Total Annual Electric Savings (kWh) (actu	20,925,520.22	25,882,542.70	34,891,136.25	34,106,169.33
	$/Annual kWh Saved (actual)	$ 0.22	$ 0.17	$ 0.16	$ 0.21
2)	Total Electric Spending	$ 4,674,280.43	$ 4,476,682.34	$ 5,610,438.18	$ 7,168,041.24
	Total kW saved	2,564.23	3,392.39	4,628.74	4,073.47
	$/kW saved (actual)	$ 1,822.88	$ 1,319.62	$ 1,212.09	$ 1,759.69
3)	Total Electric Spending	$ 4,674,280.43	$ 4,476,682.34	$ 5,610,438.18	$ 7,168,041.24
	Total Fuel Neutral MMBtu Saved				
	$/Total Fuel Neutral MMBtu Saved (actual)				





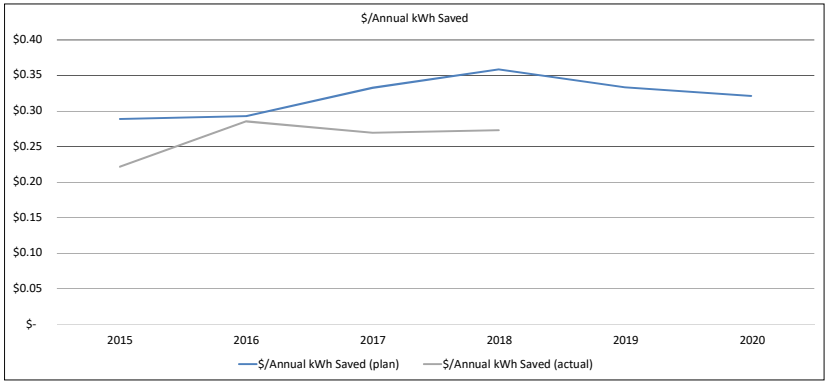


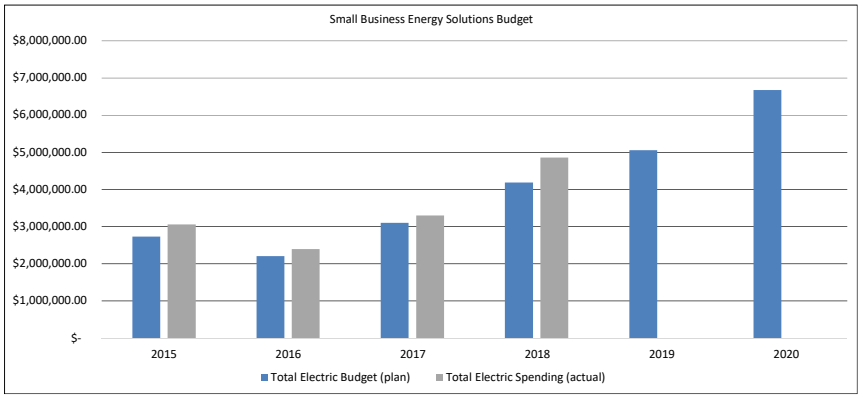


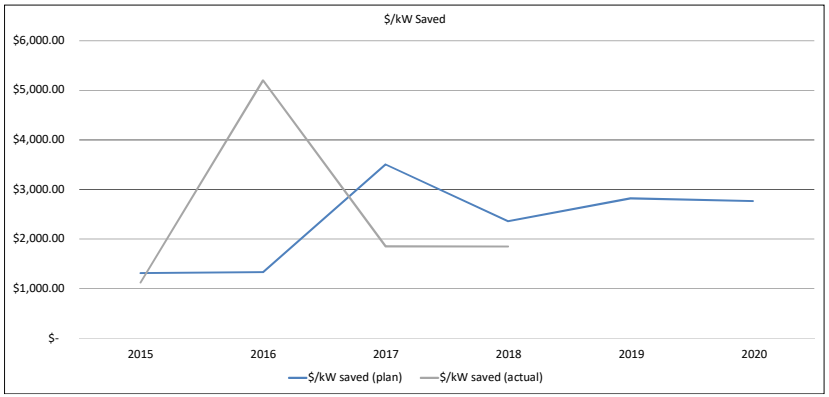
Small Business Energy Solutions

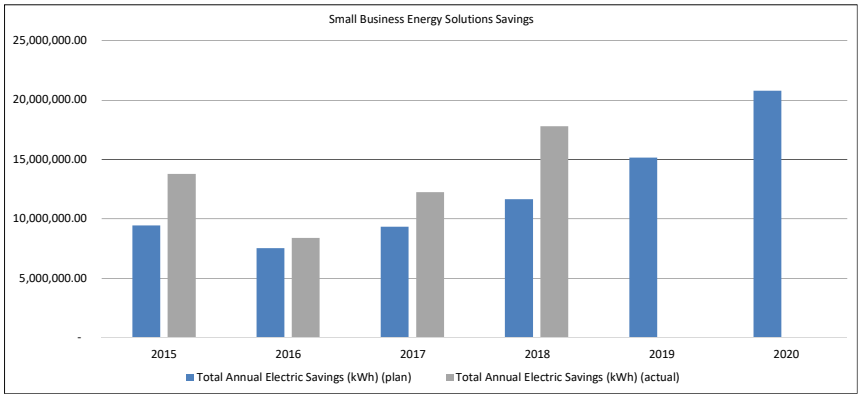
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 2,729,372.64	$ 2,205,961.93	$ 3,104,617.49	$ 4,184,601.47	$ 5,056,170.81	$ 6,678,372.17
	Total Annual Electric Savings (kWh) (plar	9,447,957.26	7,535,748.40	9,330,764.44	11,667,553.31	15,162,512.29	20,790,420.72
	$/Annual kWh Saved (plan)	$ 0.29	$ 0.29	$ 0.33	$ 0.36	$ 0.33	$ 0.32
2)	Total Electric Budget	$ 2,729,372.64	$ 2,205,961.93	$ 3,104,617.49	$ 4,184,601.47	$ 5,056,170.81	$ 6,678,372.17
	Total kW saved	2,082.66	1,659.37	885.51	1,774.87	1,791.78	2,414.33
	$/kW saved (plan)	$ 1,310.52	$ 1,329.39	$ 3,506.02	$ 2,357.70	$ 2,821.87	$ 2,766.14
3)	Total Electric Budget	$ 2,729,372.64	$ 2,205,961.93	$ 3,104,617.49	$ 4,184,601.47	$ 5,056,170.81	$ 6,678,372.17
	Total Fuel Neutral MMBtu Saved						
	$/Total Fuel Neutral MMBtu Saved (plan)						

Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 3,059,995.12	$ 2,401,441.56	$ 3,301,924.13	$ 4,863,267.41
	Total Annual Electric Savings (kWh) (actu	13,805,821.64	8,410,520.19	12,254,082.00	17,810,515.28
	$/Annual kWh Saved (actual)	$ 0.22	$ 0.29	$ 0.27	$ 0.27
2)	Total Electric Spending	$ 3,059,995.12	$ 2,401,441.56	$ 3,301,924.13	$ 4,863,267.41
	Total kW saved	2,731.04	461.50	1,781.57	2,629.00
	$/kW saved (actual)	$ 1,120.45	$ 5,203.55	$ 1,853.38	$ 1,849.86
3)	Total Electric Spending	$ 3,059,995.12	$ 2,401,441.56	$ 3,301,924.13	$ 4,863,267.41
	Total Fuel Neutral MMBtu Saved				
	$/Total Fuel Neutral MMBtu Saved (actual)				





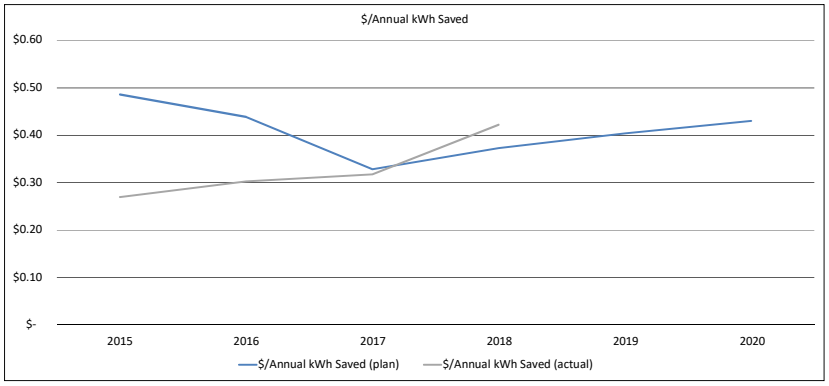


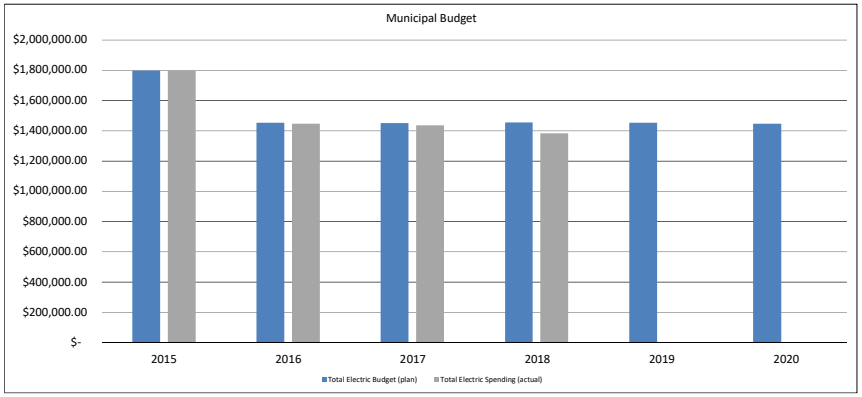


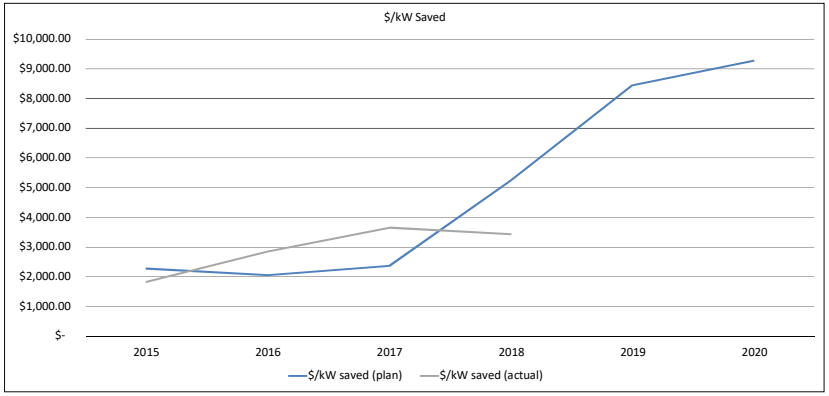
Municipal

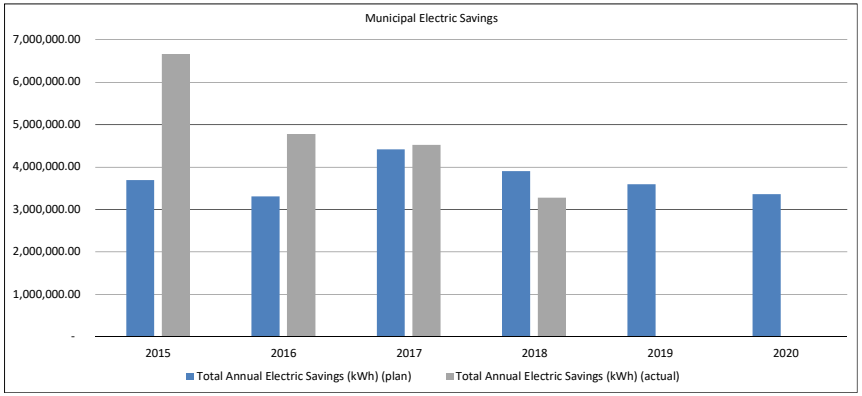
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget (plan)	$ 1,797,393.00	$ 1,453,463.00	$ 1,452,442.83	$ 1,456,555.00	$ 1,453,178.57	$ 1,447,984.57
	Total Annual Electric Savings (kWh) (plar	3,698,108.00	3,312,917.02	4,419,676.13	3,905,245.08	3,599,497.95	3,364,139.17
	$/Annual kWh Saved (plan)	$ 0.49	$ 0.44	$ 0.33	$ 0.37	$ 0.40	$ 0.43
2)	Total Electric Budget	$ 1,797,393.00	$ 1,453,463.00	$ 1,452,442.83	$ 1,456,555.00	$ 1,453,178.57	$ 1,447,984.57
	Total kW saved	791.05	709.12	614.36	277.96	172.13	156.23
	$/kW saved (plan)	$ 2,272.16	$ 2,049.67	$ 2,364.18	$ 5,240.16	$ 8,442.44	$ 9,268.28
3)	Total Electric Budget	$ 1,797,393.00	$ 1,453,463.00	$ 1,452,442.83	$ 1,456,555.00	$ 1,453,178.57	$ 1,447,984.57
	Total Fuel Neutral MMBtu Saved	1,561.73	1,242.64	3,433.10	3,442.82	3,434.84	3,422.56
	$/Total Fuel Neutral MMBtu Saved (plan	$ 1,150.90	$ 1,169.65	$ 423.07	$ 423.07	$ 423.07	$ 423.07

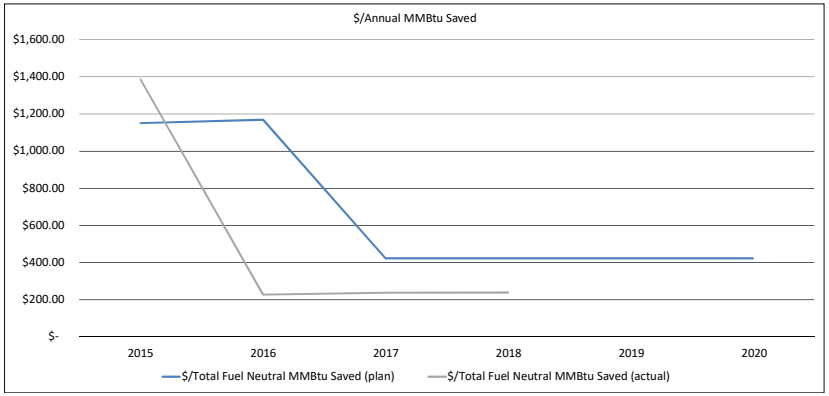
Actuals		2015	2016	2017	2018
1)	Total Electric Spending (actual)	$ 1,798,133.05	$ 1,447,065.12	$ 1,436,276.77	$ 1,384,622.44
	Total Annual Electric Savings (kWh) (actu	6,663,323.93	4,783,558.00	4,524,552.20	3,277,457.00
	$/Annual kWh Saved (actual)	$ 0.27	$ 0.30	$ 0.32	$ 0.42
2)	Total Electric Spending	$ 1,798,133.05	$ 1,447,065.12	$ 1,436,276.77	$ 1,384,622.44
	Total kW saved	983.31	508.31	393.39	403.01
	$/kW saved (actual)	$ 1,828.66	$ 2,846.84	$ 3,651.03	$ 3,435.72
3)	Total Electric Spending	$ 1,798,133.05	$ 1,447,065.12	$ 1,436,276.77	$ 1,384,622.44
	Total Fuel Neutral MMBtu Saved	1,296.50	6,349.80	6,050.72	5,803.47
	$/Total Fuel Neutral MMBtu Saved (actu	$ 1,386.91	$ 227.89	$ 237.37	$ 238.59







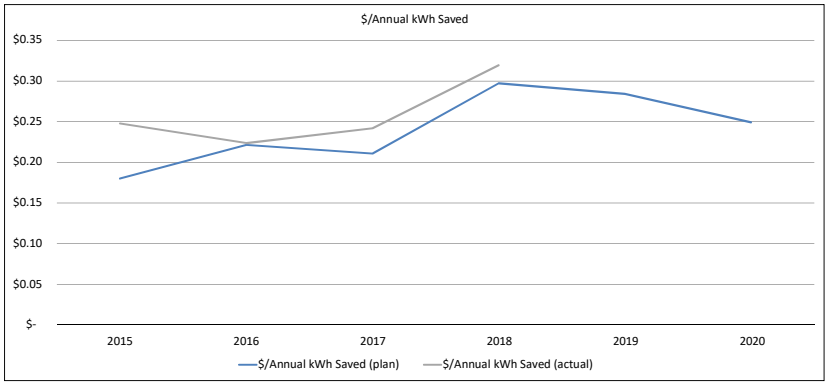


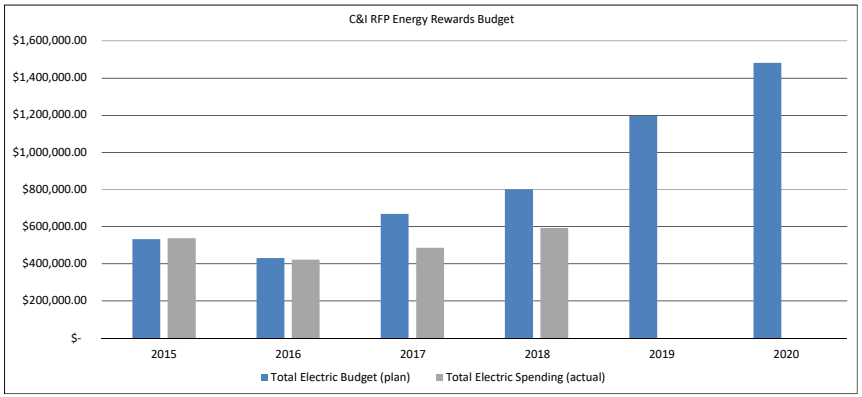


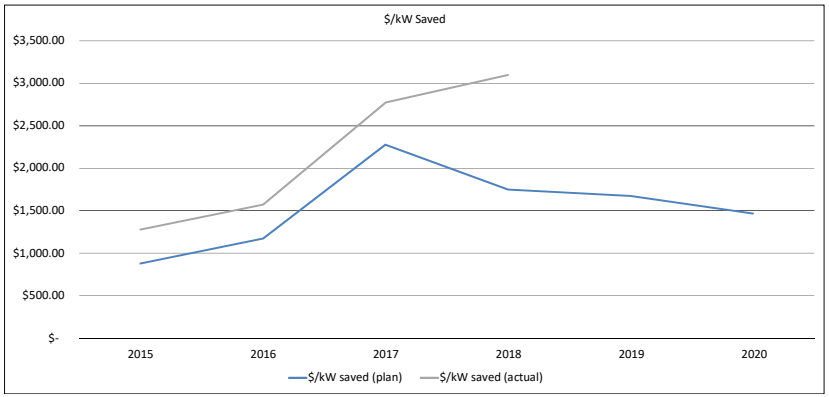
C&I RFP Energy Rewards Program

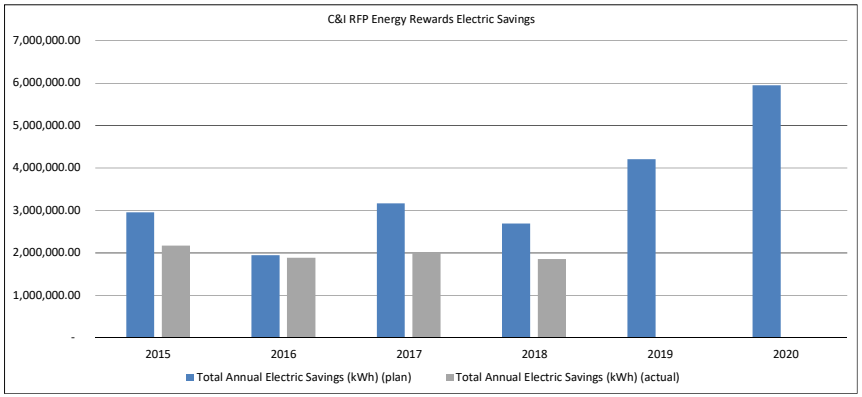
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Total Electric Budget (plan)	$ 532,143.26	$ 431,354.63	$ 668,686.55	$ 801,059.90	$ 1,195,560.67	$ 1,482,952.11
	Total Annual Electric Savings (kWh) (plar	2,955,930.84	1,948,183.50	3,171,974.18	2,693,943.49	4,205,420.01	5,948,560.33
	$/Annual kWh Saved (plan)	$ 0.18	$ 0.22	$ 0.21	$ 0.30	$ 0.28	$ 0.25
2)	Total Electric Budget	$ 532,143.26	$ 431,354.63	$ 668,686.55	$ 801,059.90	$ 1,195,560.67	$ 1,482,952.11
	Total kW saved	606.12	367.83	293.53	457.56	714.28	1,010.34
	$/kW saved (plan)	$ 877.95	$ 1,172.69	$ 2,278.10	$ 1,750.73	$ 1,673.81	$ 1,467.77
3)	Total Electric Budget	$ 532,143.26	$ 431,354.63	$ 668,686.55	$ 801,059.90	$ 1,195,560.67	$ 1,482,952.11
	Total Fuel Neutral MMBtu Saved						
	$/Total Fuel Neutral MMBtu Saved (plan)						

Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Spending (actual)	$ 537,929.38	$ 422,586.60	$ 486,616.60	$ 592,467.61
	Total Annual Electric Savings (kWh) (actu	2,169,714.00	1,888,877.00	2,011,970.00	1,854,063.00
	$/Annual kWh Saved (actual)	$ 0.25	$ 0.22	$ 0.24	$ 0.32
2)	Total Electric Spending	$ 537,929.38	$ 422,586.60	$ 486,616.60	$ 592,467.61
	Total kW saved	420.48	269.00	175.38	191.18
	$/kW saved (actual)	$ 1,279.31	$ 1,570.93	$ 2,774.69	$ 3,099.02
3)	Total Electric Spending	$ 537,929.38	$ 422,586.60	$ 486,616.60	$ 592,467.61
	Total Fuel Neutral MMBtu Saved				
	$/Total Fuel Neutral MMBtu Saved (actual)				









Program Cost-Effectiveness - 2020 PLAN

Program	Total Resource Benefit / Cost Ratio	Benefit ($000)	Utility Costs ($000)	Participant Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Participants Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential											
Home Energy Assistance	1.93	2,315.6	1,201.8	-	122.5	1,649.3	10.5	16.0	124	4,889.8	106,012.6
Energy Star Homes	2.84	1,557.3	359.2	189.4	172.8	3,902.8	17.9	39.8	149	1,746.1	41,666.5
Home Performance with Energy Star	2.06	1,784.2	577.2	287.1	169.1	2,389.1	16.1	26.6	214	4,125.7	65,497.2
Energy Star Products	1.91	846.0	367.4	75.5	845.0	6,614.2	205.6	112.4	13,846	183.9	2,630.6
Home Energy Reports	1.20	145.8	121.3	-	453.1	1,192.1	96.8	70.7	10,256	-	-
ISO-NE Forward Capacity Market Expenses	0.00	-	27.1	-	-	-	-	-		-	-
Sub-Total Residential	**2.07**	**6,649.0**	**2,654.0**	**552.0**	**1,762.4**	**15,747.5**	**346.9**	**265.5**	**24,589**	**10,945.5**	**215,807.0**
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.42	8,804.2	1,898.8	1,739.8	7,475.7	106,440.5	507.6	625.9	129	-	-
Small Business Energy Solutions	1.60	3,316.1	1,208.9	865.5	3,007.1	40,776.4	169.6	218.1	247	-	-
Municipal Energy Solutions	1.74	353.6	166.7	36.7	353.6	4,938.1	12.4	13.3	11	-	-
Education	0.00	-	72.8	-	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	-	63.1	-	-	-	-	-	-	-	-
Sub-Total Commercial, Industrial & Municipal	**2.06**	**12,473.9**	**3,410.3**	**2,642.1**	**10,836.4**	**152,155.0**	**689.6**	**857.3**	**387**	**-**	**-**
Total	**2.07**	**19,123.0**	**6,064.3**	**3,194.0**	**12,598.8**	**167,902.5**	**1,036.6**	**1,122.8**	**24,976**	**10,945.5**	**215,807.0**

Note: a 10% NEI adder is applied to total benefits, and an additional 10% NEI adder is applied to total benefits of the Home Energy Assistance program, excluding water.

Annual kWh Savings	12,598,839	79.7%	**kWh > 55%**	**Lifetime** kWh Savings	167,902,537	72.6%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	3,207,813	20.3%		**Lifetime** MMBTU Savings (in kWh)	63,246,778	27.4%	
	15,806,651	100.0%			**231,149,315**	100.0%	

Present Value Benefits - 2020 PLAN

Program	Total Benefits ($000)	Resource Benefits														Non-Resource Benefits		
		Electric												Non-Electric				
		CAPACITY				ENERGY						Total Electric Resource Benefits			Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE		Other Fuels	Water Benefits				
Residential																		
Home Energy Assistance	$ 2,316	$ 20	$ -	$ 21	$ 18	$ 31	$ 33	$ 12	$ 13	$ 6	$ 153	$ 1,671	$ 6	$ 1,829	$ 122	$ 365	$ 486	
Energy Star Homes	$ 1,557	$ 60	$ -	$ 62	$ 54	$ 60	$ 77	$ 25	$ 32	$ 9	$ 379	$ 991	$ 2	$ 1,372	$ 48	$ 137	$ 185	
Home Performance with Energy Star	$ 1,784	$ 32	$ -	$ 35	$ 30	$ 42	$ 48	$ 17	$ 19	$ 8	$ 232	$ 1,318	$ 10	$ 1,559	$ 70	$ 155	$ 225	
Energy Star Products	$ 846	$ 60	$ -	$ 78	$ 68	$ 155	$ 114	$ 70	$ 48	$ 36	$ 629	$ 42	$ 105	$ 776	$ 3	$ 67	$ 70	
Home Energy Reports	$ 146	$ 11	$ -	$ 17	$ 15	$ 31	$ 26	$ 11	$ 10	$ 11	$ 133	$ -	$ -	$ 133	$ -	$ 13	$ 13	
Res Customer Engagement Platform	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ISO-NE Forward Capacity Market Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Sub-Total Residential	**$ 6,649**	**$ 183**	**$ -**	**$ 214**	**$ 186**	**$ 319**	**$ 298**	**$ 135**	**$ 121**	**$ 69**	**$ 1,525**	**$ 4,022**	**$ 123**	**$ 5,669**	**$ 243**	**$ 737**	**$ 980**	
Commercial, Industrial & Municipal																		
Large Business Energy Solutions	$ 8,804	$ 594	$ -	$ 682	$ 592	$ 1,940	$ 2,181	$ 803	$ 847	$ 365	$ 8,004	$ -	$ -	$ 8,004	$ -	$ 800	$ 800	
Small Business Energy Solutions	$ 3,316	$ 199	$ -	$ 230	$ 199	$ 818	$ 782	$ 332	$ 310	$ 145	$ 3,015	$ -	$ -	$ 3,015	$ -	$ 301	$ 301	
Municipal Energy Solutions	$ 354	$ 10	$ -	$ 12	$ 11	$ 99	$ 105	$ 31	$ 35	$ 17	$ 321	$ -	$ -	$ 321	$ -	$ 32	$ 32	
Education	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
ISO Forward Capacity Market Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
Sub-Total Commercial, Industrial & Municipal	**$ 12,474**	**$ 803**	**$ -**	**$ 924**	**$ 802**	**$ 2,857**	**$ 3,068**	**$ 1,166**	**$ 1,192**	**$ 527**	**$ 11,340**	$ -	**$ -**	**$ 11,340**	**$ -**	**$ 1,134**	**$ 1,134**	
Total	**$ 19,123**	**$ 986**	**$ -**	**$ 1,138**	**$ 987**	**$ 3,176**	**$ 3,367**	**$ 1,302**	**$ 1,313**	**$ 595**	**$ 12,865**	**$ 4,022**	**$ 123**	**$ 17,009**	**$ 243**	**$ 1,871**	**$ 2,114**	

Performance Incentive Calculation - 2020 Plan

Row	Category	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime kWh Savings	167,902,537	*125,926,903*	-	-	1.925%	-	$ 116,738	$ 145,922	-	Program Cost Effectiveness (Page 1 of 3)
2	Annual kWh Savings	12,598,839	*9,449,129*	-	-	0.550%	-	$ 33,354	$ 41,692	-	Program Cost Effectiveness (Page 1 of 3)
3	Summer Peak Demand kW	1,122.7948	*729.8166*	-	-	0.660%	-	$ 40,024	$ 50,030	-	Program Cost Effectiveness (Page 1 of 3)
4	Winter Peak Demand kW	1,036.5618	*673.7652*	-	-	0.440%	-	$ 26,683	$ 33,354	-	Program Cost Effectiveness (Page 1 of 3)
5	Total Resource Benefits	$ 17,009,304		-	-						Present Value Benefits (Page 2 of 3)
6	Total Utility Costs[1]	$ 6,064,297		-	-						Program Cost Effectiveness (Page 1 of 3)
7	Net Benefits	$ 10,945,007	*$ 8,208,755*	-	-	1.925%	-	$ 116,738	$ 145,922	-	Row 5 Minus Row 6
8	**Total**					**5.500%**	**-**	**$ 333,536**	**$ 416,920**	**-**	Sum of Rows 1, 2, 3, 4 & 7

Row	Category	Total Resource Cost Test Planned	Total Resource Cost Test Actual	Source
9	Total Benefits (incl. NEIs)	$ 19,122,952	-	Present Value Benefits (Page 2 of 3)
10	Performance Incentive	$ 333,536	-	Row 8
11	Participant Costs	$ 3,194,023	-	Program Cost Effectiveness (Page 1 of 3)
12	Total Utility Costs	$ 6,064,297	-	Row 6
13	**Total Resource Benefit / Cost Ratio**	**1.99**	**-**	Row 9 Divided by Rows 10+11+12

All dollar values are expressed in 2020 dollars.

[1]In order to avoid circular reference in the calculation of the Performance Incentive (PI), "Total Utility Costs" does not include the value of the PI.

Liberty Utilities Electric Home Energy Assistance Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Oil-Wxn: Air Sealing, Insulation, Water measures	29	10	59	382	500	382	22	19	22	86.9%	86.9%	215,066	81,314	427,983	33	25	50	98.1%	98.1%	21,107	4,622	63,570
Propane-Wxn: Air Sealing, Insulation, Water measures	6	24	27	382	75	153	21	22	22	86.9%	86.9%	42,305	35,108	80,321	22	8	30	98.1%	98.1%	2,712	3,974	17,589
Kerosene-Wxn: Air Sealing, Insulation, Water measures	7	6	20	382	305	416	22	22	22	86.9%	86.9%	51,393	35,243	162,303	23	33	29	98.1%	98.1%	3,565	4,249	12,551
Electric-Wxn: Air Sealing, Insulation, Water measures	5	60	14	5,611	500	477	19	17	18	86.9%	86.9%	471,702	453,790	103,513	-	3	2	98.1%	98.1%	-	2,672	381
Wood Pellets-Wxn: Air Sealing, Insulation, Water measures	1	1	4	382	3,894	3,894	22	21	21	86.9%	86.9%	7,296	69,390	277,481	57	34	57	98.1%	98.1%	1,229	680	4,585
Lighting	358	575	431	61	59	123	5	5	6	86.9%	86.9%	94,456	147,213	267,949	-	0	0.21	100.0%	100.0%	-	328	530
Refrigerators	21	51	51	842	369	580	12	12	12	86.9%	86.9%	185,048	196,026	305,365	-	1	-	100.0%	100.0%	-	634	-
Oil Boiler Replacement, >=87% AFUE	5	1	9	77	-	77	25	25	25	86.9%	86.9%	8,300	-	15,133	16	8	16	100.0%	100.0%	1,984	203	3,617
Oil Furnace Replacment, >=87% ECM	5	4	6	7	5	7	20	20	20	86.9%	86.9%	609	365	699	17	10	17	100.0%	100.0%	1,742	778	1,997
Propane Furnace Replacment, >=95% ECM	2	-	3	131	-	131	20		20	86.9%	86.9%	4,540	-	6,809	17		17	100.0%	100.0%	669	-	1,004
Kerosene Furnace Replacment, >=87% ECM	1	14	1	88	14	73	20	19	22	86.9%	86.9%	1,522	3,335	1,748	9	2	7	100.0%	100.0%	189	525	189
Program Summary*				**73,782**	**82,911**	**122,542**						**1,082,238**	**1,021,785**	**1,649,304**	**1,513**	**999**	**4,890**			**33,195**	**18,665**	**106,013**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. US DOE WAP Collaboration: The federal Weatherization Assistance Program is expected to fund additional work and achieve additional MMBTU Savings.

Liberty Utilities Electric ENERGY STAR® Homes

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
SF-Propane Heated Home	21	28	26	588	570	880	24	21	24	100%	100%	288,348	332,856	540,378	24	74	24	100%	100%	11,696	43,416	14,650
SF-Electric Heated Home	2	-	3	7,789	-	11,619	25	-	23	100%	100%	384,772	-	791,354	-	-	-	100%	100%	-	-	-
MF-Propane Heated Home	4	-	120	848	-	848	24	-	24	100%	100%	80,682	-	2,420,460	9	-	9	100%	100%	899	-	26,977
MF-Electric Heated Home	20	12	-	1,417	2,759	1,417	24	25	24	100%	100%	688,817	817,592	-	-	-	-	100%	100%	-	-	-
Lighting	327	605	511	20	20	22	5	5	11	100%	100%	33,129	59,488	120,838.81	-	-	-	100%	100%	-	-	-
Clothes Washer	7	15	11	89	89	132	14	14	13	100%	100%	8,694	18,627	19,361	0	0.3	0	100%	100%	26	56	40
Refrigerators	42	14	11	41	41	79	12	12	12	100%	100%	20,445.27	6,888	10,402.27	-	-	-	100%	100%	-	-	-
Program Summary*				**68,431**	**62,864**	**172,776**						**1,504,887**	**1,235,450**	**3,902,794**	**533**	**2,084**	**1,746**			**12,621**	**43,473**	**41,666**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Lighting & Appliance Energy Savings have been updated per the EPA Energy Star Appliance Calculators and NH evaluation results.

Liberty Utilities Electric Home Performance with ENERGY STAR®

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Oil-Wxn: Air Sealing, Insulation, Water measures	33	37	61	225	708	296	21	17	15	100.0%	99.0%	157,856	456,643	277,577	39	41	30	100%	100%	27,214	32,605	28,426
Propane-Wxn: Air Sealing, Insulation, Water measures	5	3	25	225	383	580	20	20	19	100.0%	99.0%	22,500	23,345	275,908	43	19	29	100%	100%	4,276	1,261	13,769
Electric-Wxn: Air Sealing, Insulation, Water measures	4	2	6	5,290	4,853	7,344	20	22	21	100.0%	99.0%	423,200	215,405	900,468	-	9	5	100%	100%	-	394.19	649.56
Cord Wood-Wxn: Air Sealing, Insulation, Water measures	-	2	2	-	9,921	10,814	-	22	22	100.0%	99.0%	-	442,200	477,178	42	51	79	100%	100%	-	2,238	3,535
Lighting	254	-	360	30	-	50	5	-	5	100.0%	109.0%	38,604	-	99,555	-	-	-	100%	109%	-	-	-
Refrigerators	7	-	13	804	-	804	12	-	12	100.0%	100.0%	65,324	-	127,470	-	-	-	100%	100%	-	-	-
Baseload Audit - Thermal Savings	-	-	120	-	-	-	-	-	14	0.0%	100.0%	-	-	-	-	-	11	0%	100%	-	-	18,876
Baseload Audit - Electric Savings	-	-	120	-	-	335	-	-	5	0.0%	100.0%	-	-	201,102	-	-	-	0%	100%	-	-	-
Oil Boiler Replacement, >=87% AFUE	3	1	5	142	142	142	25	25	25	100.0%	100.0%	10,949	3,550	18,394	3	3	3	100%	100%	208	68	350
Oil Furnace Replacment, >=87% ECM	2	-	2	168	-	168	20	-	20	100.0%	100.0%	6,720	-	7,264	5	-	5	100%	100%	184	-	199
Propane Furnace Replacment, >=95% ECM	1	1	1	168	168	168	20	20	20	100.0%	100.0%	3,360	3,360	4,166	6	6	6	100%	100%	126	126	156
Program Summary*				**43,888**	**57,194**	**169,081**						**728,513**	**1,144,503**	**2,389,084**	**1,530**	**1,710**	**4,153**			**32,009**	**36,692**	**65,961**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. For LED Annual kWh savings, we assumed the same weighted average energy savings as the lighting program but longer hours use (3 hours/day vs. 2 hours/day as the program requires retrofit lights to be on 3 or more hours/day). The measure life for LEDs has been updated to 5 years
2. Ancillary kWh Savings are no longer separated as they are included in the weatherization measure savings as approporiate.

Liberty Utilities Electric ENERGY STAR® Products Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
LED Lighting Products	27,807	32,864	49,600	20	20	12	5	5	5	89%	89%	2,508,449	2,964,689	2,560,352	-	-	-	89%	89%	-	-	-
Mini Split HP (assumed 1.5 ton) (cooling)-Mini Split Baseline	30	44	122	103	103	103	18	18	18	100%	100%	55,581	81,519	225,880	-	-	-	100%	100%	-	-	-
Mini Split HP (assumed 1.5 ton) (heating)-Electric Resistance Baseline	-	-	-	1,926	1,926	1,926	18	18	18	100%	100%	-	-	-	-	-	-	100%	100%	-	-	-
Mini Split HP (assumed 1.5 ton) (heating) -Mini Split Baseline	30	-	122	328	328	328	18	18	18	100%	100%	177,283	-	720,470	-	-	-	100%	100%	-	-	-
Air Source Heat Pump (cooling) (assumed 3 ton)	2	1	2	220	220	220	18	18	18	100%	100%	7,920	3,960	7,920	-	-	-	100%	100%	-	-	-
Air Source Heat Pump (heating) (assumed 3 ton)	2	-	1	2,087	2,087	2,087	18	18	18	100%	100%	75,133	-	37,567	-	-	-	100%	100%	-	-	-
DHW Heat Pump Water Heater 50 gal	6	10	24	1,384	1,384	1,384	13	13	13	100%	100%	107,952	179,920	431,808	-	-	-	100%	100%	-	-	-
Wifi Thermostat (Heating&Cooling)	7	3	9	25	25	25	15	15	15	100%	100%	2,796	1,119	3,190	7	7	7	100%	100%	742	297	847
ES Dehumidifier	40	174	180	214	214	214	12	12	12	100%	100%	102,720	446,832	462,240	-	-	-	100%	100%	-	-	-
ES Pool Pumps (2 speed)	8	-	2	842	842	842	10	10	10	100%	100%	67,360	-	16,840	-	-	-	100%	100%	-	-	-
ES Pool Pumps (Variable Speed)	8	34	34	1,062	1,062	1,062	10	10	10	100%	100%	84,960	361,080	361,080	-	-	-	100%	100%	-	-	-
ES Clothes Washers	60	182	179	89	89	89	14	14	14	100%	100%	74,480	225,924	221,598	0	0	0	100%	100%	226	685	672
ES Clothes Dryers	140	93	176	156	156	93	14	14	12	100%	100%	305,564	202,982	196,755	0	0	-	100%	100%	864	574	-
ES AC (central) 3 ton	1	2	3	200	200	200	14	14	14	100%	100%	2,799	5,597	8,391	-	-	-	100%	100%	-	-	-
ES Room AC (room)	55	74	68	16	16	16	9	9	9	100%	100%	7,999	10,763	9,890	-	-	-	100%	100%	-	-	-
ES Room Air Purifier	20	42	75	391	391	391	9	9	9	50%	50%	35,145	73,805	131,794	-	-	-	100%	100%	-	-	-
ES Refrigerator	78	147	190	64	64	64	12	12	12	100%	100%	60,185	113,425	146,604	-	-	-	100%	100%	-	-	-
ES Freezers	52	36	40	96	96	53	12	12	16	100%	100%	60,154	41,645	33,600	-	-	-	100%	100%	-	-	-
Primary Refrigerator Recycling/Pickup/Turnin	10	2	8	492	492	492	8	8	8	100%	100%	39,328	7,866	31,462	-	-	-	100%	100%	-	-	-
2nd Refrigerator Pickup/Turnin	90	29	70	755	755	755	8	8	8	100%	100%	543,852	175,160	422,800	-	-	-	100%	100%	-	-	-
2nd Freezer Pickup/Turnin	10	9	20	658	658	658	8	8	8	100%	100%	52,640	47,376	105,280	-	-	-	100%	100%	-	-	-
Room AC Pickup/Turnin	10	-	-	16	16	16	5	5	5	100%	100%	810	-	-	-	-	-	100%	100%	-	-	-
ECM Motors for FHA Furnace Fans	-	-	-	168	168	168	18	18	18	100%	100%	-	-	-	-	-	-	100%	100%	-	-	-
ECM Motor for FWH Circulating Pump	-	-	-	142	142	142	15	15	15	100%	100%	-	-	-	-	-	-	100%	100%	-	-	-
Refrigerator CEE Tier 2+	80	165	62	93	93	96	12	12	12	100%	100%	89,568	184,734	71,722	-	-	-	100%	100%	-	-	-
Washer Tier CEE Tier 2+	10	-	180	229	229	156	12	12	14	100%	100%	27,528	-	392,868	-	-	0.44	100%	100%	-	-	1,111
Dryer Hybrid	10	-	1	472	472	229	12	12	12	100%	100%	56,676	-	2,753	-	-	-	100%	100%	-	-	-
Dryer Heat Pump	-	-	2	-	-	472	-	-	12	0%	100%	-	-	11,335	-	-	-	0%	0%	-	-	-
Program Summary*				**687,811**	**782,495**	**844,952**						**4,546,882**	**5,128,394**	**6,614,198**	**127**	**110**	**184**			**1,833**	**1,557**	**2,631**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. The Annual kWH Savings for LEDs were adjusted to reflect the weighted average of bulbs they are intended to replace (using halogen wattages, per the Energy Security & Independence Act of 2007).
2. Appliance Energy Savings have been updated per the EPA Energy Star Appliance Calculators and NH evaluation results.
3. Program Summary quantity total divides LED Lighting Products by 4, plus all other quantities; Note Heat Pumps are split into two measure lines to account for different load shapes. As such, the quantities are only counted once for Air Source & Ductless Mini-Split systems.

Liberty Utilities Electric Home Energy Reports Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Behavioral Savings	12,000	12,000	10,256	63	83	44	3	3	3	100%	100%	2,000,000	2,604,987	1,192,133	-	-	-	0%	0%	-	-	-
Program Summary*				**760,000**	**1,001,918**	**453,050**						**2,000,000**	**2,604,987**	**1,192,133**	**-**	**-**	**-**			**-**	**-**	**-**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual kWh Savings were developed with program implementation support vendor

Liberty Utilities Electric Large Business Energy Solutions Programs

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Retrofit																						
Lighting	8	7	30	64,901	73,483	57,258	13	13	13	99.9%	99.9%	6,740,051	6,677,439	22,298,915	-	-	-	0%	0%	-	-	-
Lighting - Control	-	5	-	-	10,215	-	-	10	-	99.9%	99.9%	-	510,030	-	-	-	-	0%	0%	-	-	-
Park Lot Lights	2	5	4	91,207	16,379	91,207	13	13	13	99.9%	99.9%	2,368,007	1,063,148	4,736,013	-	-	-	0%	0%	-	-	-
Process	2	-	15	45,771	45,771	4,645	13	13	13	99.9%	99.9%	1,188,352	-	904,421	-	-	-	0%	0%	-	-	-
Custom	3	4	5	413,247	171,769	267,156	13	15	13	99.9%	99.9%	16,093,693	10,291,486	17,340,395	-	-	-	0%	0%	-	-	-
New Equipment & Construction																						
Cooling	1	3	8	49,656	30,909	16,596	15	15	15	99.9%	99.9%	743,791	1,388,940	1,988,632	-	-	-	0%	0%	-	-	-
Lighting	4	9	30	123,822	59,003	17,783	15	15	15	99.9%	99.9%	7,418,745	7,954,120	7,990,746	-	-	-	0%	0%	-	-	-
Park Lot Lights	3	3	10	113,938	66,048	25,266	15	15	15	99.9%	99.9%	5,913,529	2,967,924	3,784,518	-	-	-	0%	0%	-	-	-
Process	5	1	16	79,037	161,919	31,682	15	15	15	99.9%	99.9%	5,919,338	2,425,328	7,592,791	-	-	-	0%	0%	-	-	-
Custom	-	3	8	474,246	210,372	314,810	15	17	16	99.9%	99.9%	-	10,869,127	39,264,311	-	-	-	0%	0%	-	-	-
Lighting - Control	-	-	3	-	-	18,004	-	-	10	99.9%	99.9%	-	-	539,766	-	-	-	0%	0%	-	-	-
Program Summary*				**3,363,035**	**2,945,170**	**7,475,707**						**46,385,506**	**44,147,541**	**106,440,508**	**-**	**-**	**-**			**-**	**-**	**-**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings were updated based on recent trends and reflect expected project sizes.

Liberty Utilities Electric Small Business Energy Solutions Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Retrofit																						
Lighting	29	27	28	30,709	41,502	40,899	13	13	13	99.9%	106.6%	11,615,149	14,614,617	15,869,847	-	-	-	0%	0%	-	-	-
Ext. Lighting	12	-	25	33,742	33,742	24,550	13	13	13	99.9%	102.7%	5,256,260	-	8,194,212	-	-	-	0%	0%	-	-	-
Lighting - Controls	-	5	-	-	5,614	-	-	10	-	99.9%	102.7%	-	280,290	-	-	-	-	0%	0%	-	-	-
Process	3	-	5	23,751	23,751	20,670	13	13	13	99.9%	100.0%	924,971	-	1,343,550	-	-	-	0%	0%	-	-	-
Custom	4	3	5	20,471	42,599	43,038	13	15	14	99.9%	100.0%	1,119,075	1,868,137	3,216,347	-	-	-	0%	0%	-	-	-
Parking Lot Lighting	-	14	15	-	24,550	7,027	-	13	13	99.9%	100.0%	-	4,461,760	1,370,316	-	-	-	0%	0%	-	-	-
New Equipment & Construction Track																						
Cooling	2	4	20	24,088	10,514	3,236	15	15	15	99.9%	100.0%	721,611	629,930	970,674	-	-	-	0%	0%	-	-	-
Lighting	16	12	25	30,112	20,983	10,054	15	15	15	99.9%	106.6%	7,216,587	3,771,532	4,018,987	-	-	-	0%	0%	-	-	-
Ext. Lighting	-	-	5	-	-	22,746	-	-	15	99.9%	102.7%	-	-	1,751,990	-	-	-	0%	0%	-	-	-
Process	3	-	1	14,800	-	14,800	13	-	13	99.9%	100.0%	576,378	-	192,400	-	-	-	0%	0%	-	-	-
Custom	5	2	5	6,874	11,387	21,134	15	17	15	99.9%	100.0%	514,816	387,904	1,585,067	-	-	-	0%	0%	-	-	-
Electric Convection Oven	-	-	1	-	-	3,615	-	-	12	99.9%	86.0%	-	-	37,310	-	-	-	0%	0%	-	-	-
Electric Dishwasher High Temp – Under Counter	-	-	1	-	-	3,898	-	-	10	99.9%	86.0%	-	-	33,525	-	-	-	0%	0%	-	-	-
Electric Hot Food Holding Cabinet Half Size	-	-	1	-	-	1,513	-	-	12	99.9%	86.0%	-	-	15,611	-	-	-	0%	0%	-	-	-
HVAC Upstream - Unitary Air Conditioners	-	-	15	-	-	3,841	-	-	12	99.9%	86.0%	-	-	594,599	-	-	-	0%	0%	-	-	-
HVAC Upstream - Water Source Heat Pump Systems	-	-	68	-	-	425	-	-	12	99.9%	86.0%	-	-	299,433	-	-	-	0%	0%	-	-	-
HVAC Upstream - DMSHP Systems	-	-	4	-	-	1,152	-	-	12	99.9%	86.0%	-	-	44,634	-	-	-	0%	0%	-	-	-
HVAC Upstream - Dual Enthalpy Economizer Controls (DEEC)	-	-	3	-	-	3,674	-	-	10	0.0%	86.0%	-	-	95,011	-	-	-	0%	0%	-	-	-
HVAC Upstream - Circulator Pump	-	-	13	-	-	460	-	-	20	0.0%	86.0%	-	-	101,117	-	-	-	0%	0%	-	-	-
HVAC Upstream - VRF	-	-	7	-	-	8,794	-	-	20	0.0%	86.0%	-	-	1,041,797	-	-	-	0%	0%	-	-	-
Park Lot Lights	-	3	-	-	64,223	-	-	15	-	99.9%	102.7%	-	2,885,903	-	-	-	-	0%	0%	-	-	-
Program Summary*				**2,058,734**	**2,126,374**	**3,007,126**						**27,944,848**	**28,900,075**	**40,776,426**								

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings were updated based on recent trends and reflect expected project sizes.

Liberty Utilities Electric Municipal Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Retrofit																						
Lighting	4	4	1	14,056	10,174	11,203	13	13	13	100.0%	106.6%	730,887	529,060	230,955	-	-	-	0.0%	0.0%	-	-	-
Park Lot Lights	-	1	-	-	232,931	-	-	15	14	100.0%	102.7%	-	3,493,962	-	-	-	-	0.0%	0.0%	-	-	-
Lighting - Controls	-	5	-	-	15,517	-	-	10	0	100.0%	102.7%	-	775,866	-	-	-	-	0.0%	0.0%	-	-	-
																				-		
New Equipment & Construction Track																				-		
Cooling	-	-	1	-	10,514	936	-	15	15	100.0%	100.0%	-	-	14,040	-	-	-	0.0%	0.0%	-	-	-
Lighting	8	5	1	19,689	22,232	22,232	15	15	15	100.0%	106.6%	2,293,144	1,667,364	355,482	-	-	-	0.0%	0.0%	-	-	-
Park Lot Lights	-	5	1	-	4,796	232,931	-	15	15	100.0%	102.7%	-	359,688	3,588,299	-	-	-	0.0%	0.0%	-	-	-
Custom	1	1	-	75,968	-	75,968	15	25	15	100.0%	100.0%	1,139,520	-	-	-	95	-	100.0%	0.0%	-	2,363	-
Lighting Controls	6	-	4	1,469	-	15,517	10	10	10	100.0%	100.0%	88,153	-	620,693	-	-	-	0.0%	0.0%	-	-	-
VFDs	1	-	1	15,577	15,577	15,577	13	13	13	100.0%	100.0%	101,253	-	125,554	-	-	-	0.0%	0.0%	-	-	-
DMSHP (any, SEER >= 20, HSPF >= 10, Cooling)	2	-	2	124	124	124	12	12	12	100.0%	100.0%	2,473	-	3,066	-	-	-	0.0%	0.0%	-	-	-
DMSHP (oil, SEER >= 20, HSPF >= 10, Heating)	2	-	-	536	536	536	12	12	12	100.0%	100.0%	12,874	-	-	-	-	-	0.0%	0.0%	-	-	-
DMSHP (LP, SEER >= 20, HSPF >= 10, Heating)	1	-	-	536	536	536	12	12	12	100.0%	100.0%	6,437	-	-	-	-	-	0.0%	0.0%	-	-	-
Energy Star Wifi Thermostat (DMSHP)	3	-	-	110	110	110	15	15	15	100.0%	100.0%	4,936	-	-	-	-	-	0.0%	0.0%	-	-	-
Bolier: LP Condensing AFUE >= 90%. up to 301 - 499 MBH	1	-	-	-	-	-	25	25	25	100.0%	100.0%	-	-	-	16	-	-	100.0%	0.0%	396	-	-
Bolier: Oil AFUE >= 85%. up to 301 - 499 MBH	1	-	-	-	-	-	25	25	25	100.0%	100.0%	-	-	-	24	-	-	100.0%	0.0%	592	-	-
Program Summary*				**303,815**	**486,351**	**353,603**						**4,379,678**	**6,825,940**	**4,938,090**	**40**	**95**	**-**			**988.8**	**2,362.5**	**0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings were updated based on recent trends and reflect expected project sizes.
2. Since this is funded by RGGI, the 2018-2020 Plan includes some Weatherization Projects and as well as incentives for customers replacing heating systems to upgrade to more efficient models.

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
2020 System Benefits Charge ("SBC") Calculation
($ in 000's)

Year	EE Total Budget	RGGI Revenues	FCM Revenues	Other Revenues	Carryforward with Interest	Current Year Interest	SBC Requirement	Forecasted Distribution (MWH)	SBC Rate EE Portion (cents/kWh)	SBC Rate EAP Portion (cents/kWh)	SBC Rate LBR Portion (cents/kWh)	2020 Total SBC Rate (cents/kWh)
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M
2020	$ 5,194	$ 217	$ 609	$ -	$ (693)	$ (25)	$ 5,085	924,743	0.528	0.150	0.036	0.714

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Company Forecast
Col. C: Company Forecast
Col. D: Company Forecast
Col. E: Company Forecast
Col. F: Page 2, Line 9 Col. N + Line 11 Col. O
Col. G: Page 3, Line 11, Col. O
Col. H: Col. B - Col. C - Col. D - Col. E - Col. F - Col. G
Col. I: Company Forecast
Col. J: (Col. H / Col. I) x 100
Col. K: EAP Portion of SBC Rate
Col. L: Page 4, Col. G
Col. M: Col. J + Col. K + Col. L

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Energy Efficiency Expense & SBC Revenue Reconcilliation
January 1, 2019 to December 31, 2019
($ in 000's)

Line	Description	Carryover 12/31/18	Actual Jan-19	Actual Feb-19	Actual Mar-19	Actual Apr-19	Actual May-19	Actual Jun-19	Actual Jul-19	Actual Aug-19	Forecast Sep-19	Forecast Oct-19	Forecast Nov-19	Forecast Dec-19	2019 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	SBC Revenues		$253	$282	$277	$260	$256	$262	$322	$341	$290	$265	$268	$293	$3,369
2	RGGI Revenues		$0	$0	$53	$53	$0	$0	$0	$0	$53	$0	$0	$53	$214
3	FCM Revenues		$66	$66	$66	$66	$68	$68	$56	$56	$53	$53	$53	$53	$723
4	Other Revenues		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	**Total Revenues**		**$319**	**$348**	**$397**	**$380**	**$324**	**$330**	**$379**	**$397**	**$396**	**$318**	**$320**	**$399**	**$4,307**
6	Program Expenses		$191	$93	$237	$223	$224	$212	$186	$112	$285	$285	$285	$285	$2,620
7	**Total Program Expenses**		**$191**	**$93**	**$237**	**$223**	**$224**	**$212**	**$186**	**$112**	**$285**	**$285**	**$285**	**$285**	**$2,620**
8	Current Month (Over)/Under Recovery		-$127	-$255	-$159	-$156	-$100	-$118	-$193	-$285	-$111	-$32	-$35	-$114	
9	Cumulative (Over)/Under Recovery	(693)	(821)	(1,076)	(1,235)	(1,392)	(1,492)	(1,609)	(1,802)	(2,088)	(2,199)	(2,231)	(2,266)	(2,380)	
10	Interest @ Prime Rate		0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	
11	**Interest on Deferral Balance**		**$ (3)**	**$ (4)**	**$ (5)**	**$ (6)**	**$ (7)**	**$ (7)**	**$ (8)**	**$ (9)**	**$ (10)**	**$ (10)**	**$ (10)**	**$ (11)**	**$ (91)**
12	**Monthly Sales (MWh)**		79,161	75,764	74,413	69,733	68,703	70,167	86,361	87,796	76,569	69,399	69,969	76,708	904,743
13	**EE SBC Rate**		0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	0.373	

Line 1: (Line 12 x Line 13) / 100
Line 2: Company Forecast
Line 3: Company Forecast
Line 4: Company Forecast
Line 5: Sum of Lines 1 through Lines 4
Line 6: Company Forecast
Line 7: Sum of Line 6
Line 8: Line 7 - Line 5
Line 9: Prior month Line 9 + Current month Line 8
Line 10: Prime Rate / 12
Line 11: (Prior Month Line 9 + Current Month Line 9) / 2 x Line 10
Line 12: Company Forecast
Line 13: 2017 approved rate

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Energy Efficiency Expense & SBC Revenue Reconcilliation
January 1, 2020 to December 31, 2020
($ in 000's)

Line	Description	Carryover 12/31/2019	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2020 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	SBC Revenues		$432	$388	$389	$367	$383	$408	$474	$468	$405	$382	$374	$413	$4,883
2	RGGI Revenues		$0	$0	$54	$0	$0	$54	$0	$0	$54	$0	$0	$54	$217
3	FCM Revenues		$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$53	$633
4	Other Revenues		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	**Total Revenues**		**$485**	**$441**	**$496**	**$420**	**$436**	**$515**	**$527**	**$521**	**$512**	**$435**	**$426**	**$520**	**$5,732**
6	Program Expenses		$433	$433	$433	$433	$433	$433	$433	$433	$433	$433	$433	$433	$5,194
7	**Total Program Expenses**		**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$433**	**$5,194**
8	Current Month (Over)/Under Recovery		($52)	($8)	($63)	$13	($3)	($82)	($94)	($88)	($79)	($2)	$6	($87)	
9	Cumulative (Over)/Under Recovery	$693	$641	$633	$570	$583	$580	$498	$404	$316	$237	$235	$242	$154	
10	Interest @ Prime Rate		0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	
11	**Interest on Deferral Balance**		**$3**	**$3**	**$3**	**$3**	**$3**	**$2**	**$2**	**$2**	**$1**	**$1**	**$1**	**$1**	**$25**
12	**Monthly Sales (MWh)**		81,795	73,535	73,683	69,469	72,548	77,218	89,822	88,689	76,631	72,340	70,789	78,223	924,743
13	**EE SBC Rate**		0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	

Line 1: (Line 12 x Line 13) / 100
Line 2: Page 1, Col. C
Line 3: Page 1, Col. D
Line 4: Page 1, Col. E
Line 5: Sum of Lines 1 through Lines 4
Line 6: Page 1, Col. B
Line 7: Sum of Line 6
Line 8: Line 7 - Line 5
Line 9: Prior month Line 9 + Current month Line 8
Line 10: Prime Rate / 12
Line 11: (Prior Month Line 9 + Current Month Line 9) / 2 x Line 10
Line 12: Company Forecast
Line 13: Page 1, Col. J

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
2020 System Benefits Charge Calculation (LBR Component)
($ in 000's)

Year	Forecasted LBR Revenue	Prior Year Deferral with Interest	Current Year Interest	Total LBR Revenue	Forecasted Distribution (MWH)	SBC Rate LBR Portion (cents/kWh)
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
2020	$ 328	$ -	$ 5	$ 333	924,743	0.036

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Page 5, Line 21, Col. O / 1000
Col. C: Page 6, Line 7, Col. N
Col. D: Page 7, Line 6, Col. O
Col. E: Col. B + Col. C + Col. D
Col. F: Company Forecast
Col. G: (Col. E * 100) / Col. F

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Monthly and Cumulative Savings and Lost Base Revenue
January 1, 2020 to December 31, 2020

Line	Description	Cumulative Annual kWh 12/31/2019	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2020 Annual kWh and Monthly kW Savings	Cumulative Annual kWh and Monthly kW
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O	
1	Residential Annual kWh Savings (2019)	2,246,439	146,882	146,882	146,882	146,882	146,882	146,882	146,882	146,882	146,882	146,882	146,882	146,882	1,762,578	4,009,017
2	C&I Annual kWh Savings (2017 & 2018)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	C&I Annual kWh Savings (2019)	6,977,921	903,036	903,036	903,036	903,036	903,036	903,036	903,036	903,036	903,036	903,036	903,036	903,036	10,836,436	17,814,357
4	C&I Monthly Installed kW Savings*	901	120	120	120	120	120	120	120	120	120	120	120	120	1,444	2,345

Line	Description		Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	June 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020	Total 2020 Lost Base Revenue
5	Monthly Residential Savings (2019)		11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	
6	Cumulative Residential Savings	187,203	198,503	209,803	221,103	232,403	243,703	255,003	266,303	277,603	288,903	300,203	311,503	322,803	
7	Average Residential kWh Distribution Rate		0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	0.04694	
8	Total Lost Residential Revenue		$ 9,317	$ 9,848	$ 10,378	$ 10,909	$ 11,439	$ 11,969	$ 12,500	$ 13,030	$ 13,561	$ 14,091	$ 14,621	$ 15,152	$ 146,816
9	Monthly C&I Savings (2017 & 2018)	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	Average C&I kWh Distribution Rate		-	-	-	-	-	-	-	-	-	-	-	-	
11	Lost C&I kWh Revenue		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
12	Monthly C&I Savings (2019)		69,500	69,500	69,500	69,500	69,500	69,500	69,500	69,500	69,500	69,500	69,500	69,500	
13	Cumulative C&I Savings	581,493	650,993	720,493	789,993	859,493	928,993	998,493	1,067,993	1,137,493	1,206,993	1,276,493	1,345,993	1,415,493	
14	Average C&I kWh Distribution Rate		0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	0.00873	
15	Lost C&I kWH Revenue		$ 5,681	$ 6,287	$ 6,894	$ 7,500	$ 8,107	$ 8,713	$ 9,320	$ 9,926	$ 10,533	$ 11,139	$ 11,746	$ 12,352	$ 108,200
16	Monthly C&I kW Savings (2019)		60	60	60	60	60	60	60	60	60	60	60	60	
17	Cumulative Monthly C&I kW Savings	75	135	256	376	496	617	737	857	978	1,098	1,218	1,339	1,459	
18	Average C&I Demand Rate		7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	
19	Lost C&I Demand Revenue		$ 1,035	$ 1,956	$ 2,877	$ 3,798	$ 4,719	$ 5,640	$ 6,561	$ 7,482	$ 8,403	$ 9,324	$ 10,245	$ 11,166	$ 73,210
20	Total Lost C&I kWh and Demand Revenue		$ 6,716	$ 8,244	$ 9,771	$ 11,299	$ 12,826	$ 14,354	$ 15,881	$ 17,409	$ 18,936	$ 20,464	$ 21,991	$ 23,519	$ 181,410
21	**Total Lost Revenue**		**$ 16,034**	**$ 18,091**	**$ 20,149**	**$ 22,207**	**$ 24,265**	**$ 26,323**	**$ 28,381**	**$ 30,439**	**$ 32,497**	**$ 34,555**	**$ 36,613**	**$ 38,671**	**$ 328,225**

Lines 1-3: Company Forecast
Line 4: Line 1 + Line 2 + Line 3
Line 5: Company Forecast
Line 6: Line 5
Line 7: Line 2 / 12
Line 8: Prior Month Line 8 + Current Month Line 7
Line 9: Page 8, Column 7
Line 10: Line 8 x Line 9
Line 11: Line 1 / 12
Line 12: Page 8, Column 8
Line 14: Line 3 / 12
Line 15: Prior Month Line 15 + Current Month Line 14
Line 16: Page 8, Column 7
Line 17: Line 15 x Line 16
Line 18: Line 5 / 12
Line 19: Prior Month Line 19 + Current Month Line 18
Line 20: Page 8, Column 6
Line 21: Line 19 x Line 20
Line 22: Line 10 + Line 13 + Line 17 + Line 21

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Lost Base Revenue Reconciliation
January 1, 2019 to December 31, 2019
($ in 000's)

Line	Description	Forecast Carryover 12/31/2019	Actual Jan 2019	Actual Feb 2019	Actual Mar 2019	Actual Apr 2019	Actual May 2019	Actual Jun 2019	Actual Jul 2019	Actual Aug 2019	Forecast Sep 2019	Forecast Oct 2019	Forecast Nov 2019	Forecast Dec 2019	2019 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Revenue Recovery		9	9	9	8	8	8	10	11	9	9	9	9	109
2	Lost Revenues		16	18	20	22	24	26	28	30	32	35	37	39	328
3	Current Month (Over)/Under Recovery		7	9	11	14	16	18	18	19	23	26	28	29	219
4	Cumulative (Over)/Under Recovery	-	7	16	28	41	57	75	93	113	136	162	190	219	
5	Interest @ Prime Rate		0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%	
6	Interest on Deferral Balance		0	0	0	0	0	0	0	0	1	1	1	1	5
7	Cummulative (Over)/Under Recovery Incl Carrying Charge		7	16	28	42	58	76	95	115	138	165	194	224	
8	**Monthly Sales (MWh)**		79,161	75,764	74,413	69,733	68,703	70,168	86,361	91,292	75,714	72,447	70,911	78,141	912,808
9	**SBC Rate (LBR Component)**		0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	

Line 1: (Line 7 x Line 8) / 100
Line 2: Page 5, Line 21 / 1000
Line 3: Line 2 - Line 1
Line 4: Prior month Line 4 + Current month Line 3
Line 5: Prime Rate / 12
Line 6: (Prior Month Line 4 + Current Month Line 4) / 2 x Line 5
Line 7: Company Forecast
Line 8: Company Forecast

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Calculation of Forecasted Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants and Distribution Rates for 2018*

For the Period 01/01/18 Through 12/31/18

Rate Class	(1) Revenue Demand Charges[(a)]	(2) Revenue kWh Charges	(3) = (1) + (2) Revenue Total Demand and kWh Charges	(4) Delivery kW	(5) Delivery kWh	(6) = (1) + (4) Average Distribution Rate $/kW	(7) = (2) / (5) Average Distribution Rate $/kWh	(8) = (3) / (5) Average Distribution Rate $/kWh
Rate D	$ -	$ 13,035,007	$ 13,035,007	$ -	277,704,434	**N/A**	**N/A**	**$ 0.04694**
Rate D-10	$ -	$ 209,851	$ 209,851	$ -				
Rate T	$ -	$ 755,506	$ 755,506	$ -				
Total Residential	$ -	$ 14,000,364	$ 14,000,364	$ -				
Rate G-1	$ 7,281,389	$ 1,153,820	$ 8,435,209	951,328	379,184,992	$ 7.65	$ 0.00304	$ 0.02225
Rate G-2	$ -	$ 290,067	$ 290,067	-	147,993,116	$ -	$ 0.00196	$ 0.00196
Rate G-3	$ -	$ 3,913,193	$ 3,913,193	-	88,095,304	$ -	$ 0.04442	$ 0.04442
Rate V	$ -	$ 14,998	$ 14,998	-	328,389	$ -	$ 0.04567	$ 0.04567
Total Commercial and Industrial	$ 7,281,389	$ 5,372,078	$ 12,653,467	951,328	615,601,801	**$ 7.65**	**$ 0.00873**	**$ 0.02055**

* Excludes the outdoor lighting Rate OL and the Customer/Meter charge revenue from each rate. Used billing determinants from DE 19-064
(a) For Rate G-2, the demand charge is excluded from the average rate calculation as ratchet for rate class is under internal review.

Bill Impacts of Changes in System Benefits Charge - Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities

	Current Rates*	2020
System Benefits Charge ($/kWh)	$ 0.00535	$ 0.00714
Bill per month, including PSNH default energy service		
Residential Rate D (650 kWh/month)	$ 112.82	$ 113.98
Rate G-2, 25 kW, 9,000 kWh per month	$ 874.40	$ 892.30
Change from previous rate level - $ per month		
Residential Rate D (650 kWh/month)		$ 1.16
Rate G-2, 25 kW, 9,000 kWh per month		$ 17.90
Change from previous rate level - %		
Residential Rate D (650 kWh/month)		1.03%
Rate G-2, 25 kW, 9,000 kWh per month		2.05%

* Stated at Liberty's most recent rate levels (effective August 1, 2019). Rate G-2 energy service rate is based on September 1, 2019 rate.

Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities
Calculation of Distribution Revenue at the Rate Levels in Effect During 2018
Based on Billing Determinants for the Twelve Months Ending December 2018

Residential Rate D

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2018 Total Units	Revenue
Standard	Customer Charge	176,526	$ 14.54	$ 2,566,688	248,053	$ 14.02	$ 3,477,703	424,579	$ 6,044,391
	First 250 kWh	39,838,615	$ 0.04061	$ 1,617,846	56,130,610	$ 0.04299	$ 2,413,055	95,969,225	$ 4,030,901
	Excess 250 kWh	73,632,339	$ 0.05273	$ 3,882,633	106,438,717	$ 0.04883	$ 5,197,403	180,071,056	$ 9,080,036
Off Peak kWh 16 Hour	All kWh	509,683	$ 0.04185	$ 21,330	610,765	$ 0.04039	$ 24,669	1,120,448	$ 45,999
Farm kWh	All kWh	400,714	$ 0.04576	$ 18,337	494,066	$ 0.04416	$ 21,818	894,780	$ 40,155
D-6 kWh	All kWh	351,911	$ 0.04262	$ 14,998	417,462	$ 0.04414	$ 18,427	769,373	$ 33,425
Total Residential	Customer/Meter	176,526		$ 2,566,688	248,053		$ 3,477,703	424,579	$ 6,044,391
	Demand	-		-	-		-	-	-
	kWh	114,733,262		$ 5,555,145	164,091,620		$ 7,675,371	278,824,882	$ 13,230,516
				$ 8,121,833			$ 11,153,074		$ 19,274,907

Residential Rate D-10

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	2,203	$ 14.54	$ 32,032	3,074	$ 14.02	$ 43,097	5,277	$ 75,129
	On Peak kWh	954,934	$ 0.10422	$ 99,523	1,082,684	$ 0.10054	$ 108,853	2,037,618	$ 208,376
	Off Peak kWh	1,877,474	$ 0.00141	$ 2,647	1,714,187	$ 0.00139	$ 2,383	3,591,661	$ 5,030
Total Rate D-10	Customer/Meter	2,203		$ 32,032	3,074		$ 43,097	5,277	$ 75,129
	Demand	-		$ -	-		$ -	-	$ -
	kWh	2,832,408		$ 102,170	2,796,871		$ 111,236	5,629,279	$ 213,406
				$ 134,202			$ 154,333		$ 288,535

Commercial & Industrial Rate G-1

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	674	$ 378.73	$ 255,264	1,089	$ 365.24	$ 397,746	1,763	$ 653,010
	Demand Charge	369,367	$ 8.07	$ 2,980,792	646,696	$ 7.78	$ 5,031,295	1,016,063	$ 8,012,087
	On Peak kWh	80,641,269	$ 0.00516	$ 416,109	82,981,478	$ 0.00501	$ 415,737	163,622,747	$ 831,846
	Off Peak kWh	63,018,220	$ 0.00152	$ 95,788	142,540,567	$ 0.00150	$ 213,811	205,558,787	$ 309,599
	Credit for High Voltage Delivery	148,120	$ (0.44)	$ (65,173)	206,229	$ (0.42)	$ (86,616)	354,349	$ (151,789)
Total Rate G-1	Customer/Meter	674		$ 255,264	1,089		$ 397,746	1,763	$ 653,010
	Demand	369,367		$ 2,980,792	646,696		$ 5,031,295	1,016,063	$ 8,012,087
	kWh	143,807,609		$ 446,724	225,728,274		$ 542,932	369,535,883	$ 989,656
				$ 3,682,780			$ 5,971,973		$ 9,654,753

Commercial Rate G-2

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	4,535	$ 63.15	$ 286,385	6,347	$ 60.90	$ 386,532	10,882	$ 672,918
	Demand Charge	206,641	$ 8.12	$ 1,677,925	303,467	$ 7.83	$ 2,376,147	510,108	$ 4,054,072
	All kWh	60,196,695	$ 0.00200	$ 120,393	87,796,421	$ 0.00196	$ 172,081	147,993,116	$ 292,474
	Credit for High Voltage Delivery	720	$ (0.44)	$ (317)	1,229	$ (0.42)	$ (516)	1,949	$ (833)
Total Rate G-2	Customer/Meter	4,535		$ 286,385	6,347		$ 386,532	10,882	$ 672,918
	Demand	206,641		$ 1,677,925	303,467		$ 2,376,147	510,108	$ 4,054,072
	kWh	60,197,415		$ 120,077	87,797,650		$ 171,565	147,995,065	$ 291,641
				$ 2,084,387			$ 2,934,244		$ 5,018,630

General Service Rate G-3

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	28,321	$ 14.54	$ 411,787	39,719	$ 14.02	$ 556,860	68,040	$ 968,648
	All kWh	37,047,833	$ 0.04603	$ 1,705,312	51,047,471	$ 0.04442	$ 2,267,529	88,095,304	$ 3,972,840
Total Rate G-3	Customer/Meter	28,321		$ 411,787	39,719		$ 556,860	68,040	$ 968,648
	Demand	-		$ -	-		$ -	-	$ -
	kWh	37,047,833		$ 1,705,312	51,047,471		$ 2,267,529	88,095,304	$ 3,972,840
				$ 2,117,099			$ 2,824,389		$ 4,941,488

Electric Heat Rate T

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	4,866	$ 12.54	$ 61,020	6,700	$ 14.02	$ 93,934	11,566	$ 154,954
	All kWh	8,096,077	$ 0.04004	$ 324,167	7,255,996	$ 0.03865	$ 280,444	15,352,073	$ 604,611
Total Rate T	Customer/Meter	4,866		$ 61,020	6,700		$ 93,934	11,566	$ 154,954
	Demand	-		$ -	-		$ -	-	$ -
	kWh	8,096,077		$ 324,167	7,255,996		$ 280,444	15,352,073	$ 604,611
				$ 385,187			$ 374,378		$ 759,565

Electric Heat Rate V

Rate	Source	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
Standard	Customer Charge	90	$ 14.54	$ 1,309	121	$ 14.02	$ 1,696	211	$ 3,005
	All kWh	149,692	$ 0.04732	$ 7,083	178,697	$ 0.04567	$ 8,161	328,389	$ 15,245
Total Rate V	Customer/Meter	90		$ 1,309	121		$ 1,696	211	$ 3,005
	Demand	-		$ -	-		$ -	-	$ -
	kWh	149,692		$ 7,083	178,697		$ 8,161	328,389	$ 15,245
				$ 8,392			$ 9,858		$ 18,250

Outdoor Lighting Rate OL

Type	Fixture	January 1, 2018 - May 31, 2018 Units	Rate/Charge	Revenue	June 1, 2018 - December 31, 2018 Units	Rate/Charge	Revenue	2017 Total Units	Revenue
High Pressure Sodium	HPS RWY 50W	11,289	$ 7.64	$ 86,248	17,958	$ 7.36	$ 132,171	29,247	$ 218,419
	HPS RWY 100W	1,770	$ 9.27	$ 16,408	13,659	$ 8.93	$ 121,975	15,429	$ 138,383
	HPS RWY 250W	517	$ 16.28	$ 8,417	3,622	$ 15.70	$ 56,865	4,139	$ 65,282
	HPS RWY 400W	240	$ 21.21	$ 5,090	593	$ 20.45	$ 12,127	833	$ 17,217
	HPS POST 100W	402	$ 10.67	$ 4,289	3,202	$ 10.29	$ 32,949	3,604	$ 37,238
	HPS FLD 250W	258	$ 16.42	$ 4,236	1,791	$ 15.83	$ 28,352	2,049	$ 32,588
	HPS FLD 400W	431	$ 22.67	$ 9,771	2,943	$ 21.86	$ 64,334	3,374	$ 74,105
Incandescent	INC RWY 103W	23	$ 10.21	$ 235	161	$ 9.84	$ 1,584	184	$ 1,819
Mercury	MV RWY 100W	64	$ 7.38	$ 472	449	$ 7.11	$ 3,192	513	$ 3,665
	MV RWY 175W	145	$ 8.99	$ 1,304	865	$ 8.66	$ 7,491	1,010	$ 8,794
	MV RWY 400W	51	$ 16.99	$ 866	350	$ 16.38	$ 5,733	401	$ 6,599
	MV RWY 1000W	1	$ 32.23	$ 32	7	$ 31.08	$ 218	8	$ 250
	MV FLD 400W	22	$ 18.78	$ 413	142	$ 18.11	$ 2,572	164	$ 2,985
	MV FLD 1000W	-	$ 32.44	$ -	-	$ 31.28	$ -	-	$ -
POLES	WOOD	119	$ 9.01	$ 1,072	804	$ 8.68	$ 6,979	923	$ 8,051
	POLE FIBER DIRECT EMBEDDED	245	$ 9.33	$ 2,286	1,948	$ 8.99	$ 17,513	2,193	$ 19,798
	POLE FIBER RWY <25FT	132	$ 15.83	$ 2,090	1,122	$ 15.26	$ 17,122	1,254	$ 19,211
	POLE FIBER RWY =>25FT	4	$ 26.44	$ 106	32	$ 25.49	$ 816	36	$ 921
	POLE METAL EMBEDDED	162	$ 18.86	$ 3,055	1,214	$ 18.18	$ 22,071	1,376	$ 25,126
	POLE METAL =>25FT	101	$ 22.74	$ 2,297	713	$ 21.93	$ 15,636	814	$ 17,933
LED	LED 30W	14	$ 11.28	$ 158	103	$ 10.87	$ 1,120	117	$ 1,278
	LED 50W	31	$ 11.74	$ 364	603	$ 11.32	$ 6,826	634	$ 7,190
	LED 130W	32	$ 13.57	$ 434	1,117	$ 13.08	$ 14,610	1,149	$ 15,045
	LED 190W	4	$ 17.86	$ 71	26	$ 17.22	$ 448	30	$ 519
	LED 50W URD	13	$ 12.90	$ 168	101	$ 12.44	$ 1,256	114	$ 1,424
	LED 90W FLOOD	-	$ 13.01	$ -	17	$ 12.54	$ 213	17	$ 213
	LED 130W FLOOD	-	$ 14.24	$ -	28	$ 13.73	$ 384	28	$ 384
	LED 50W BARN	-	$ 4.97	$ -	2	$ 4.79	$ 10	2	$ 10
	All kWh	-	$ (0.00004)	$ -	-	$ -	$ -	-	$ -
Total Rate OL	Fixtures	16,070		$ 149,883	53,572		$ 574,564	69,642	$ 724,447
	Demand								
	kWh	-			-			-	
				$ 149,883			$ 574,564		$ 724,447

Total Retail

Type	Source	January 1, 2017 - June 30, 2017 Units	Revenue	July 1, 2017 - December 31, 2017 Units	Revenue	2017 Total Units	Revenue
Total Retail	Customer/Meter	217,215	$ 3,614,484.51	302,029	$ 4,957,570	519,244	$ 8,572,055
	Fixtures	16,070	$ 149,883	53,572	$ 574,564	69,642	$ 724,447
	Demand	576,008	$ 4,658,717	950,163	$ 7,320,309	1,526,171	$ 11,979,026
	kWh	366,864,296	$ 8,260,678	538,896,579	$ 11,057,237	905,760,875	$ 19,317,915
			$ 16,683,762		$ 23,909,681		$ 40,593,443

Lost Base Revenue

Summary of Data Included in the Calculation of the Average Distribution Rates*

Type	Source	January 1, 2017 - June 30, 2017 Units	Revenue	July 1, 2017 - December 31, 2017 Units	Revenue	2017 Total Units	Revenue
Total Rate D	Demand	-	$ -	-	$ -	-	$ -
	kWh	114,733,262	$ 5,555,145	164,091,620	$ 7,675,371	278,824,882	$ 13,230,516
			$ 5,555,145		$ 7,675,371		$ 13,230,516
Total Rate D-10	Demand	-	$ -	-	$ -	-	$ -
	kWh	2,832,408	$ 102,170	2,796,871	$ 111,236	5,629,279	$ 213,406
			$ 102,170		$ 111,236		$ 213,406
Total Rate G-1	Demand	369,367	$ 2,980,792	646,696	$ 5,031,295	1,016,063	$ 8,012,087
	kWh	143,807,609	$ 446,724	225,728,274	$ 542,932	369,535,883	$ 989,656
			$ 3,427,516		$ 5,574,227		$ 9,001,742
Total Rate G-2	Demand	206,641	$ 1,677,925	303,467	$ 2,376,147	510,108	$ 4,054,072
	kWh	60,197,415	$ 120,077	87,797,650	$ 171,565	147,995,065	$ 291,641
			$ 1,798,002		$ 2,547,711		$ 4,345,713
Total Rate G-3	Demand	-	$ -	-	$ -	-	$ -
	kWh	37,047,833	$ 1,705,312	51,047,471	$ 2,267,529	88,095,304	$ 3,972,840
			$ 1,705,312		$ 2,267,529		$ 3,972,840
Total Rate T	Demand	-	$ -	-	$ -	-	$ -
	kWh	8,096,077	$ 324,167	7,255,996	$ 280,444	15,352,073	$ 604,611
			$ 324,167		$ 280,444		$ 604,611
Total Rate V	Demand	-	$ -	-	$ -	-	$ -
	kWh	149,692	$ 7,083	178,697	$ 8,161	328,389	$ 15,245
			$ 7,083		$ 8,161		$ 15,245
Total	Demand	576,008	$ 4,658,717	165,041,783	$ 7,407,441	1,526,171	$ 12,066,158
	kWh	329,816,463	$ 6,555,366	487,849,108	$ 8,789,709	801,985,109	$ 19,317,915
			$ 11,214,083		$ 16,197,150		$ 31,384,073

cost of the Company's (i) Electric Assistance Program and (ii) energy efficiency core programs and any other such energy efficiency programs, as approved by the Commission.

The Company shall implement its Electric Assistance Program as approved by the Commission from time to time. The System Benefits Charge will fund the Company's Electric Assistance Program and such other system benefits as are required by law or approved by the Commission.

The Company will reconcile on an annual basis actual costs incurred of the Electric Assistance Program, including development, implementation, and ongoing administrative and maintenance costs against the actual amounts charged to customers through the portion of the System Benefits Charge attributable to the Electric Assistance Program, set at a level of 0.150¢ per kilowatt-hour in accordance with RSA 374-F:4, VIII (c), and shall be in addition to the portion of the System Benefits Charge relating to the Company's energy efficiency core programs stated below.

The Company shall implement its energy efficiency core programs as approved by the Commission from time to time. The Company's cost of implementing the energy efficiency core programs shall be recovered through the portion of the System Benefits Charge attributable to such programs, set at a level of 0.528¢ per kilowatt-hour in accordance with 2001 N.H. Laws 29:14, which shall be in addition to the portion of the System Benefits Charge relating to the Company's low income customer protection programs stated above. Any difference between the actual energy efficiency funds expended and the funds collected through the System Benefits Charge at 0.528¢ per kilowatt-hour during a calendar year shall, with interest calculated at the average prime rate for each month, be added to or subtracted from the amount to be expended in the following calendar year. If actual amounts are not available for any period, they shall be estimated for purposed of the above calculations and adjusted the following year based on actual data.

The Company shall implement its lost revenue mechanism as approved by the Commission in accordance with Order No. 25,932 in Docket No. DE 15-137 Energy Efficiency Resource Standard, set at a level of 0.034¢. The lost revenue portion of the System Benefits Charge shall be established annually based on a forecast of lost revenue for the prospective year. Any difference between the actual lost revenue and the amount of lost revenue recovered through the System Benefits Charge shall be refunded or recouped with interest during the succeeding year.

Any adjustment of the System Benefits Charge shall be in accordance with a notice filed with the Commission setting forth the amount of the increase or decrease, and the new System Benefits Charge amount. The notice shall further specify the effective date of such adjustment, which shall not be earlier than thirty days after the filing of the notice, or such other date as the Commission may authorize.

cost of the Company's (i) Electric Assistance Program and (ii) energy efficiency core programs and any other such energy efficiency programs, as approved by the Commission.

The Company shall implement its Electric Assistance Program as approved by the Commission from time to time. The System Benefits Charge will fund the Company's Electric Assistance Program and such other system benefits as are required by law or approved by the Commission.

The Company will reconcile on an annual basis actual costs incurred of the Electric Assistance Program, including development, implementation, and ongoing administrative and maintenance costs against the actual amounts charged to customers through the portion of the System Benefits Charge attributable to the Electric Assistance Program, set at a level of 0.150¢ per kilowatt-hour in accordance with RSA 374-F:4, VIII (c), and shall be in addition to the portion of the System Benefits Charge relating to the Company's energy efficiency core programs stated below.

The Company shall implement its energy efficiency core programs as approved by the Commission from time to time. The Company's cost of implementing the energy efficiency core programs shall be recovered through the portion of the System Benefits Charge attributable to such programs, set at a level of 0.528~~373~~¢ per kilowatt-hour in accordance with 2001 N.H. Laws 29:14, which shall be in addition to the portion of the System Benefits Charge relating to the Company's low income customer protection programs stated above. Any difference between the actual energy efficiency funds expended and the funds collected through the System Benefits Charge at 0.~~373~~528¢ per kilowatt-hour during a calendar year shall, with interest calculated at the average prime rate for each month, be added to or subtracted from the amount to be expended in the following calendar year. If actual amounts are not available for any period, they shall be estimated for purposed of the above calculations and adjusted the following year based on actual data.

The Company shall implement its lost revenue mechanism as approved by the Commission in accordance with Order No. 25,932 in Docket No. DE 15-137 Energy Efficiency Resource Standard, set at a level of 0.03~~412~~¢. The lost revenue portion of the System Benefits Charge shall be established annually based on a forecast of lost revenue for the prospective year. Any difference between the actual lost revenue and the amount of lost revenue recovered through the System Benefits Charge shall be refunded or recouped with interest during the succeeding year.

Any adjustment of the System Benefits Charge shall be in accordance with a notice filed with the Commission setting forth the amount of the increase or decrease, and the new System Benefits Charge amount. The notice shall further specify the effective date of such adjustment, which shall not be earlier than thirty days after the filing of the notice, or such other date as the Commission may authorize.

System Benefits Charge

Electric Assistance Program (EAP)	0.150¢
Energy Efficiency Programs	0.528¢
Lost Revenue Mechanism	0.034¢
Total System Benefit Charge	0.712¢

42. Late Payment Charge

The rates and charges billed under this Tariff are net, billed monthly and payable upon presentation of the bill. However, Customers who receive Delivery Service under Residential Rate D, Residential Time-of-Day Rate D-10, OR General Service Rate G-3, may elect to pay for all service rendered under these rates, as well as Energy Service Rate ES, on a Levelized Payment Plan available upon application to the Company.

For Customers rendered Delivery Service under General Service Rate G-3, General Long Hour Service Rate G-2 or General Service Time-of-Use Rate G-1, all amounts previously billed but remaining unpaid after the due date printed on the bill shall be subject to a late payment charge of one and one-half percent (1 ½ %) thereof, such amounts to include any prior unpaid late payment charges.

The late payment charge is not applicable to Customers taking service under Rate D and Rate D-10, or past due balances of General Service Rate G-3 or Outdoor Lighting Rate M Customers who are abiding by the terms of an extended payment arrangement agreed to by the Company.

43. Provisions for Billing Charges Associated with Meter Diversions and Damage to Company Equipment in Connection Therewith

In case of loss or damage to the Company's property on a Customer's premises the Customer shall pay to the Company the value of the property or the cost of making good the loss or damage.

In those cases where, as a result of or in connection with diversion of electricity supplied by the Company to the Customer's premises, whether such diversion is carried out by bypassing the meter or other measuring device or by other means, the Company incurs expense for labor and/or materials, the Customer responsible therefore will be charged the costs incurred by the Company for such labor and materials. The costs so chargeable may include, but are not limited to, the cost of investigating the diversion and the miscellaneous charges for service associated therewith, the cost of supplying and installing an exchange meter, the cost of furnishing and installing tamper-resistant devices, the cost of testing the meter associated with the diversion and the cost of replacement of a meter which has been damaged.

System Benefits Charge

Electric Assistance Program (EAP)	0.150¢
Energy Efficiency Programs	0.528~~373~~¢
Lost Revenue Mechanism	0.0341~~2~~¢
Total System Benefit Charge	0.712~~535~~¢

42. Late Payment Charge

The rates and charges billed under this Tariff are net, billed monthly and payable upon presentation of the bill. However, Customers who receive Delivery Service under Residential Rate D, Residential Time-of-Day Rate D-10, OR General Service Rate G-3, may elect to pay for all service rendered under these rates, as well as Energy Service Rate ES, on a Levelized Payment Plan available upon application to the Company.

For Customers rendered Delivery Service under General Service Rate G-3, General Long Hour Service Rate G-2 or General Service Time-of-Use Rate G-1, all amounts previously billed but remaining unpaid after the due date printed on the bill shall be subject to a late payment charge of one and one-half percent (1 ½ %) thereof, such amounts to include any prior unpaid late payment charges.

The late payment charge is not applicable to Customers taking service under Rate D and Rate D-10, or past due balances of General Service Rate G-3 or Outdoor Lighting Rate M Customers who are abiding by the terms of an extended payment arrangement agreed to by the Company.

43. Provisions for Billing Charges Associated with Meter Diversions and Damage to Company Equipment in Connection Therewith

In case of loss or damage to the Company's property on a Customer's premises the Customer shall pay to the Company the value of the property or the cost of making good the loss or damage.

In those cases where, as a result of or in connection with diversion of electricity supplied by the Company to the Customer's premises, whether such diversion is carried out by bypassing the meter or other measuring device or by other means, the Company incurs expense for labor and/or materials, the Customer responsible therefore will be charged the costs incurred by the Company for such labor and materials. The costs so chargeable may include, but are not limited to, the cost of investigating the diversion and the miscellaneous charges for service associated therewith, the cost of supplying and installing an exchange meter, the cost of furnishing and installing tamper-resistant devices, the cost of testing the meter associated with the diversion and the cost of replacement of a meter which has been damaged.

NHPUC No. 20 - ELECTRICITY
LIBERTY UTILITIES

Eleventh Revised Page 117
Superseding Tenth Revised Page 117
Summary of Rates

RATES EFFECTIVE JANUARY 1, 2020
FOR USAGE ON AND AFTER JANUARY 1, 2020

Rate	Blocks	Distribution Charge	REP/ VMP	**Net Distribution Charge**	Transmission Charge	Stranded Cost Charge	Storm Recovery Adjustment Factor	System Benefits Charge	Electricity Consumption Tax	**Total Delivery Service**	Energy Service	**Total Rate**
D	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04898	0.00052	**0.04950**	0.02732	(0.00106)	-	0.00712	-	**0.08288**	0.07710	**$ 0.15998**
Off Peak Water Heating Use 16 Hour Control[1]	All kWh	$ 0.04229	0.00052	**0.04281**	0.02732	(0.00106)	-	0.00712	-	**0.07619**	0.07710	**$ 0.15329**
Off Peak Water Heating Use 6 Hour Control[1]	All kWh	$ 0.04308	0.00052	**0.04360**	0.02732	(0.00106)	-	0.00712	-	**0.07698**	0.07710	**$ 0.15408**
Farm[1]	All kWh	$ 0.04623	0.00052	**0.04675**	0.02732	(0.00106)	-	0.00712	-	**0.08013**	0.07710	**$ 0.15723**
D-10	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	On Peak kWh	$ 0.10528	0.00052	**0.10580**	0.02388	(0.00105)	-	0.00712	-	**0.13575**	0.07710	**$ 0.21285**
	Off Peak kWh	$ 0.00145	0.00052	**0.00197**	0.02388	(0.00105)	-	0.00712	-	**0.03192**	0.07710	**$ 0.10902**
G-1	Customer Charge	$ 382.48		**382.48**						**382.48**		**$ 382.48**
	Demand Charge	$ 8.14		**8.14**						**8.14**		**$ 8.14**
	On Peak kWh	$ 0.00523	0.00052	**0.00575**	0.02130	(0.00105)	-	0.00712	-	**0.03312**		
									Effective 8/1/19, usage on or after		0.05959	**$ 0.09271**
									Effective 9/1/19, usage on or after		0.05880	**$ 0.09192**
									Effective 10/1/19, usage on or after		0.05905	**$ 0.09217**
									Effective 11/1/19, usage on or after		0.06951	**$ 0.10263**
									Effective 12/1/19, usage on or after		0.09042	**$ 0.12354**
									Effective 1/1/20, usage on or after		0.10663	**$ 0.13975**
	Off Peak kWh	$ 0.00156	0.00052	**0.00208**	0.02130	(0.00105)	-	0.00712	-	**0.02945**		
									Effective 8/1/19, usage on or after		0.05959	**$ 0.08904**
									Effective 9/1/19, usage on or after		0.05880	**$ 0.08825**
									Effective 10/1/19, usage on or after		0.05905	**$ 0.08850**
									Effective 11/1/19, usage on or after		0.06951	**$ 0.09896**
									Effective 12/1/19, usage on or after		0.09042	**$ 0.11987**
									Effective 1/1/20, usage on or after		0.10663	**$ 0.13608**
G-2	Customer Charge	$ 63.77		**63.77**						**63.77**		**$ 63.77**
	Demand Charge	$ 8.19		**8.19**						**8.19**		**$ 8.19**
	All kWh	$ 0.00205	0.00052	**0.00257**	0.02437	(0.00102)	-	0.00712	-	**0.03304**		
									Effective 8/1/19, usage on or after		0.05959	**$ 0.09263**
									Effective 9/1/19, usage on or after		0.05880	**$ 0.09184**
									Effective 10/1/19, usage on or after		0.05905	**$ 0.09209**
									Effective 11/1/19, usage on or after		0.06951	**$ 0.10255**
									Effective 12/1/19, usage on or after		0.09042	**$ 0.12346**
									Effective 1/1/20, usage on or after		0.10663	**$ 0.13967**
G-3	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04651	0.00052	**0.04703**	0.02486	(0.00104)	-	0.00712	-	**0.07797**	0.07710	**$ 0.15507**
M	All kWh	$ -	0.00052	**0.00052**	0.01483	(0.00103)	-	0.00712	-	**0.02144**	0.07710	**$ 0.09854**
T	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04047	0.00052	**0.04099**	0.02762	(0.00108)	-	0.00712	-	**0.07465**	0.07710	**$ 0.15175**
V	Minimum Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04782	0.00052	**0.04834**	0.02515	(0.00103)	-	0.00712	-	**0.07958**	0.07710	**$ 0.15668**

[1] Rate is a subset of Domestic Rate D

Issued by: /s/Susan L. Fleck
Susan L. Fleck
Title: President

Dated: XX XX, 20XX
Effective: January 1, 2020

Authorized by NHPUC Order No. xx, xxx in Docket DE 17-136, Dated xx xx, 20xx

NHPUC No. 20 - ELECTRICITY
LIBERTY UTILITIES

~~Tenth~~ Revised Page 117
Superseding ~~Ninth~~ Revised Page 117
Summary of Rates

RATES EFFECTIVE ~~AUGUST 1, 2019~~
FOR USAGE ON AND AFTER ~~AUGUST 1, 2019~~

Rate	Blocks	Distribution Charge	REP/ VMP	**Net Distribution Charge**	Transmission Charge	Stranded Cost Charge	Storm Recovery Adjustment Factor	System Benefits Charge	Electricity Consumption Tax	**Total Delivery Service**	Energy Service	**Total Rate**
D	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04898	0.00052	**0.04950**	0.02732	(0.00106)	-	~~0.00535~~	-	~~**0.08111**~~	0.07710	~~**$ 0.15821**~~
Off Peak Water Heating Use 16 Hour Control[1]	All kWh	$ 0.04229	0.00052	**0.04281**	0.02732	(0.00106)	-	~~0.00535~~	-	~~**0.07442**~~	0.07710	~~**$ 0.15152**~~
Off Peak Water Heating Use 6 Hour Control[1]	All kWh	$ 0.04308	0.00052	**0.04360**	0.02732	(0.00106)	-	~~0.00535~~	-	~~**0.07521**~~	0.07710	~~**$ 0.15231**~~
Farm[1]	All kWh	$ 0.04623	0.00052	**0.04675**	0.02732	(0.00106)	-	~~0.00535~~	-	~~**0.07836**~~	0.07710	~~**$ 0.15546**~~
D-10	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	On Peak kWh	$ 0.10528	0.00052	**0.10580**	0.02388	(0.00105)	-	~~0.00535~~	-	~~**0.13398**~~	0.07710	~~**$ 0.21108**~~
	Off Peak kWh	$ 0.00145	0.00052	**0.00197**	0.02388	(0.00105)	-	~~0.00535~~	-	~~**0.03015**~~	0.07710	~~**$ 0.10725**~~
G-1	Customer Charge	$ 382.48		**382.48**						**382.48**		**$ 382.48**
	Demand Charge	$ 8.14		**8.14**						**8.14**		**$ 8.14**
	On Peak kWh	$ 0.00523	0.00052	**0.00575**	0.02130	(0.00105)	-	~~0.00535~~	-	~~**0.03135**~~		
									Effective 8/1/19, usage on or after		0.05959	~~**$ 0.09094**~~
									Effective 9/1/19, usage on or after		0.05880	~~**$ 0.09015**~~
									Effective 10/1/19, usage on or after		0.05905	~~**$ 0.09040**~~
									Effective 11/1/19, usage on or after		0.06951	~~**$ 0.10086**~~
									Effective 12/1/19, usage on or after		0.09042	~~**$ 0.12177**~~
									Effective 1/1/20, usage on or after		0.10663	~~**$ 0.13798**~~
	Off Peak kWh	$ 0.00156	0.00052	**0.00208**	0.02130	(0.00105)	-	~~0.00535~~	-	~~**0.02768**~~		
									Effective 8/1/19, usage on or after		0.05959	~~**$ 0.08727**~~
									Effective 9/1/19, usage on or after		0.05880	~~**$ 0.08648**~~
									Effective 10/1/19, usage on or after		0.05905	~~**$ 0.08673**~~
									Effective 11/1/19, usage on or after		0.06951	~~**$ 0.09719**~~
									Effective 12/1/19, usage on or after		0.09042	~~**$ 0.11810**~~
									Effective 1/1/20, usage on or after		0.10663	~~**$ 0.13431**~~
G-2	Customer Charge	$ 63.77		**63.77**						**63.77**		**$ 63.77**
	Demand Charge	$ 8.19		**8.19**						**8.19**		**$ 8.19**
	All kWh	$ 0.00205	0.00052	**0.00257**	0.02437	(0.00102)	-	~~0.00535~~	-	~~**0.03127**~~		
									Effective 8/1/19, usage on or after		0.05959	~~**$ 0.09086**~~
									Effective 9/1/19, usage on or after		0.05880	~~**$ 0.09007**~~
									Effective 10/1/19, usage on or after		0.05905	~~**$ 0.09032**~~
									Effective 11/1/19, usage on or after		0.06951	~~**$ 0.10078**~~
									Effective 12/1/19, usage on or after		0.09042	~~**$ 0.12169**~~
									Effective 1/1/20, usage on or after		0.10663	~~**$ 0.13790**~~
G-3	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04651	0.00052	**0.04703**	0.02486	(0.00104)	-	~~0.00535~~	-	~~**0.07620**~~	0.07710	~~**$ 0.15330**~~
M	All kWh	$ -	0.00052	**0.00052**	0.01483	(0.00103)	-	~~0.00535~~	-	~~**0.01967**~~	0.07710	~~**$ 0.09677**~~
T	Customer Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04047	0.00052	**0.04099**	0.02762	(0.00108)	-	~~0.00535~~	-	~~**0.07288**~~	0.07710	~~**$ 0.14998**~~
V	Minimum Charge	$ 14.67		**14.67**						**14.67**		**$ 14.67**
	All kWh	$ 0.04782	0.00052	**0.04834**	0.02515	(0.00103)	-	~~0.00535~~	-	~~**0.07781**~~	0.07710	~~**$ 0.15491**~~

[1] Rate is a subset of Domestic Rate D

Dated: ~~July 11, 2019~~
Effective: ~~August 1, 2019~~

Issued by: /s/Susan L. Fleck
Susan L. Fleck
Title: President

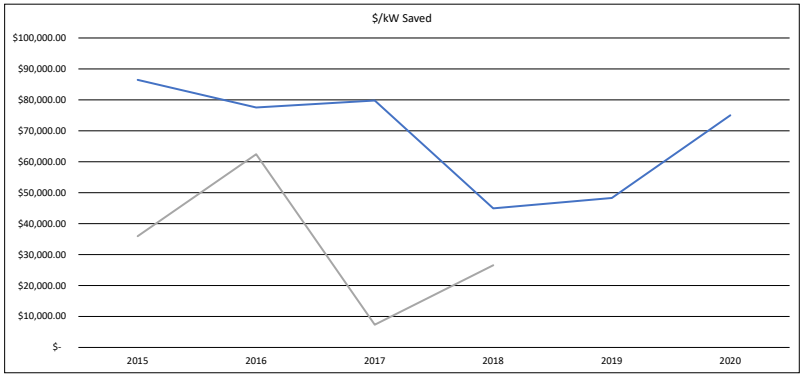
Authorized by NHPUC Order No. ~~26,264~~ in Docket DE ~~19-059~~, Dated ~~June 24, 2019~~

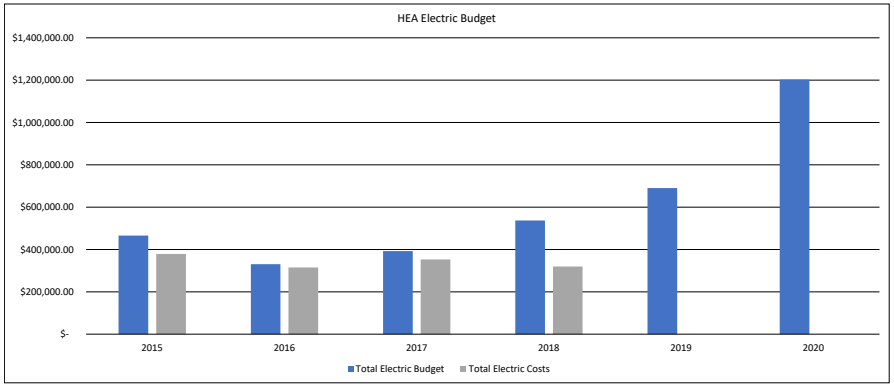
Home Energy Assistance

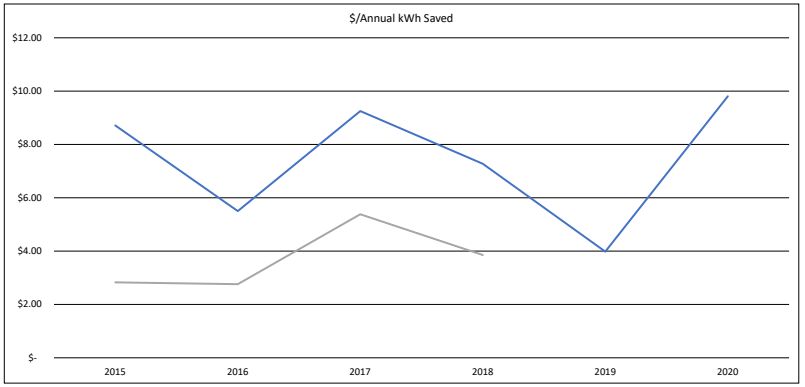
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 465,548.53	$ 330,589.02	$ 392,167.81	$ 536,897.99	$ 690,347.57	$ 1,201,848.73
	Annual Electric Savings Plan (kWh)	53,434.31	60,075.89	42,395.61	73,782.18	173,346.85	122,542.44
	$/Annual kWh Plan	$ 8.71	$ 5.50	$ 9.25	$ 7.28	$ 3.98	$ 9.81
2)	Total Electric Budget	$ 465,548.53	$ 330,589.02	$ 392,167.81	$ 536,897.99	$ 690,347.57	$ 1,201,848.73
	Total summer peak kW Plan	5.38	4.26	4.92	11.95	14.29	16.02
	$/kW Plan	$ 86,467.08	$ 77,552.06	$ 79,786.89	$ 44,945.12	$ 48,311.93	$ 75,013.17
3)	Total Electric Budget	$ 465,548.53	$ 330,589.02	$ 392,167.81	$ 536,897.99	$ 690,347.57	$ 1,201,848.73
	Total Annual MMBtu Plan	1,242.74	960.66	966.87	1,513.48	1,997.75	4,889.84
	$/Annual MMBtu Plan	$ 374.61	$ 344.13	$ 405.61	$ 354.74	$ 345.56	$ 245.78

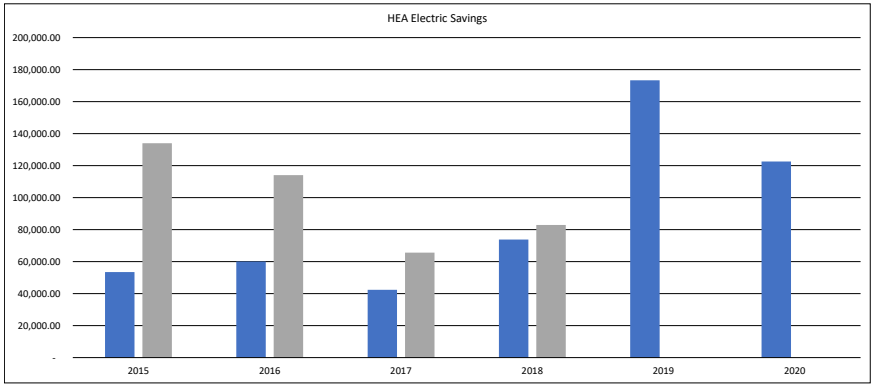
Home Energy Assistance

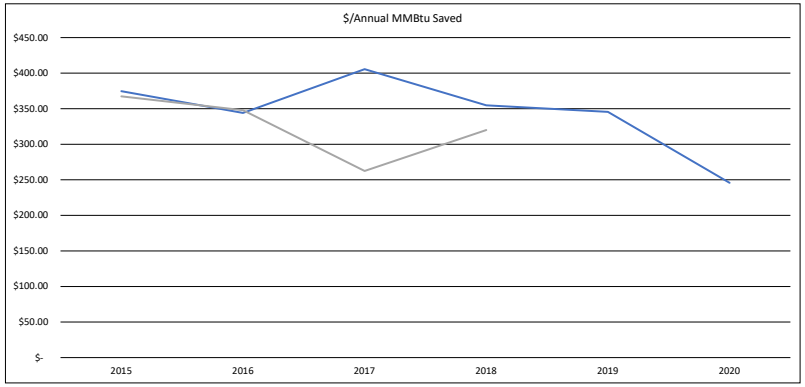
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 378,874.12	$ 314,957.99	$ 352,987.37	$ 319,646.44
	Annual Electric Savings Actual (kWh)	134,001.08	114,076.40	65,578.70	82,911.32
	$/Annual kWh Actual	$ 2.83	$ 2.76	$ 5.38	$ 3.86
2)	Total Electric Costs	$ 378,874.12	$ 314,957.99	$ 352,987.37	$ 319,646.44
	Total summer peak kW Actual	10.54	5.04	48.06	12.04
	$/kW Actual	$ 35,939.11	$ 62,434.91	$ 7,345.02	$ 26,558.81
3)	Total Electric Costs	$ 378,874.12	$ 314,957.99	$ 352,987.37	$ 319,646.44
	Total Annual MMBtu Actual	1,031.25	905.27	1,344.94	998.82
	$/Annual MMBtu Actual	$ 367.39	$ 347.91	$ 262.45	$ 320.02









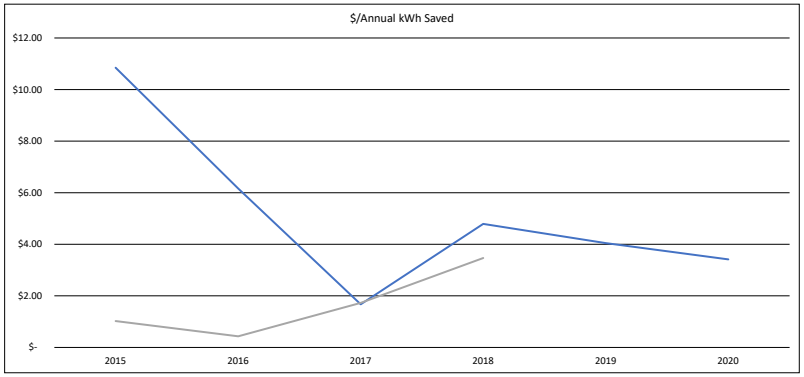


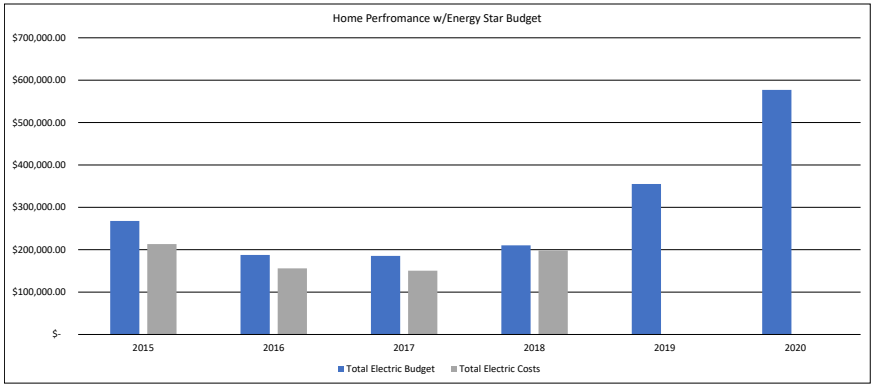
Home Performance w/Energy Star

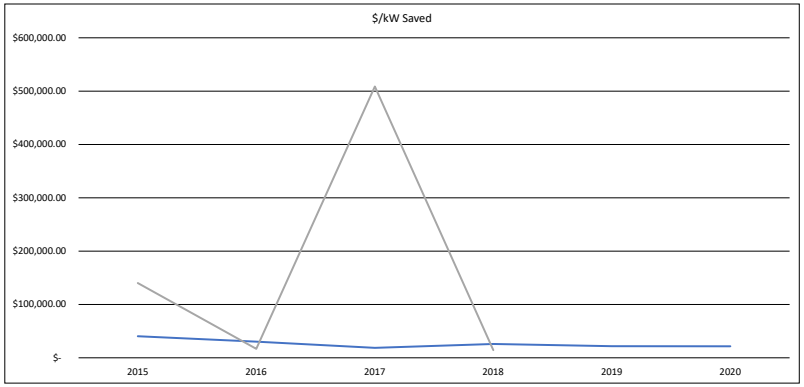
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 267,815.68	$ 187,613.45	$ 185,502.63	$ 210,304.44	$ 355,054.17	$ 577,161.92
	Annual Electric Savings Plan (kWh)	24,689.24	30,442.48	110,909.35	43,887.81	87,789.63	169,081.22
	$/Annual kWh Plan	$ 10.85	$ 6.16	$ 1.67	$ 4.79	$ 4.04	$ 3.41
2)	Total Electric Budget	$ 267,815.68	$ 187,613.45	$ 185,502.63	$ 210,304.44	$ 355,054.17	$ 577,161.92
	Total summer peak kW Plan	6.62	6.20	9.94	8.10	16.29	26.64
	$/kW Plan	$ 40,437.10	$ 30,241.93	$ 18,661.03	$ 25,963.96	$ 21,799.23	$ 21,666.27
3)	Total Electric Budget	$ 267,815.68	$ 187,613.45	$ 185,502.63	$ 210,304.44	$ 355,054.17	$ 577,161.92
	Total Annual MMBtu Plan	1,394.32	1,029.31	1,224.48	1,530.01	2,452.03	4,125.69
	$/Annual MMBtu Plan	$ 192.08	$ 182.27	$ 151.49	$ 137.45	$ 144.80	$ 139.89

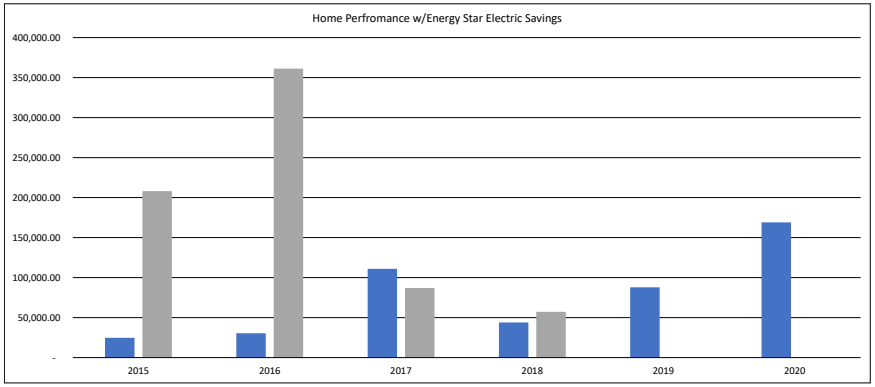
Home Performance w/Energy Star

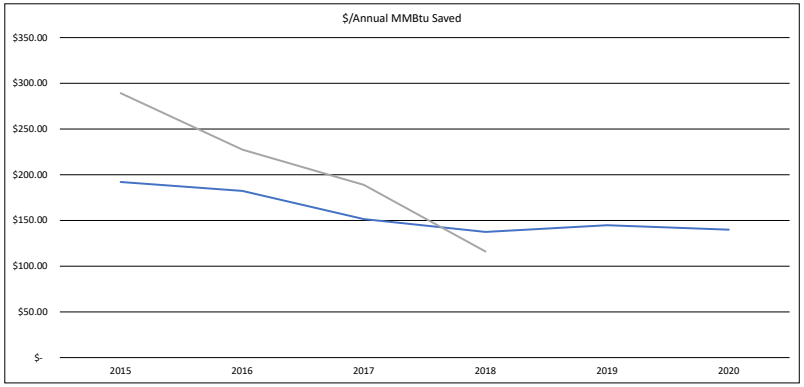
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 213,206.14	$ 155,978.47	$ 150,522.13	$ 198,333.60
	Annual Electric Savings Actual (kWh)	208,056.02	361,214.88	87,034.75	57,194.00
	$/Annual kWh Actual	$ 1.02	$ 0.43	$ 1.73	$ 3.47
2)	Total Electric Costs	$ 213,206.14	$ 155,978.47	$ 150,522.13	$ 198,333.60
	Total summer peak kW Actual	1.52	9.32	0.30	13.80
	$/kW Actual	$ 140,107.53	$ 16,730.56	$ 508,674.12	$ 14,369.57
3)	Total Electric Costs	$ 213,206.14	$ 155,978.47	$ 150,522.13	$ 198,333.60
	Total Annual MMBtu Actual	737.17	685.57	796.59	1,709.56
	$/Annual MMBtu Actual	$ 289.22	$ 227.52	$ 188.96	$ 116.01









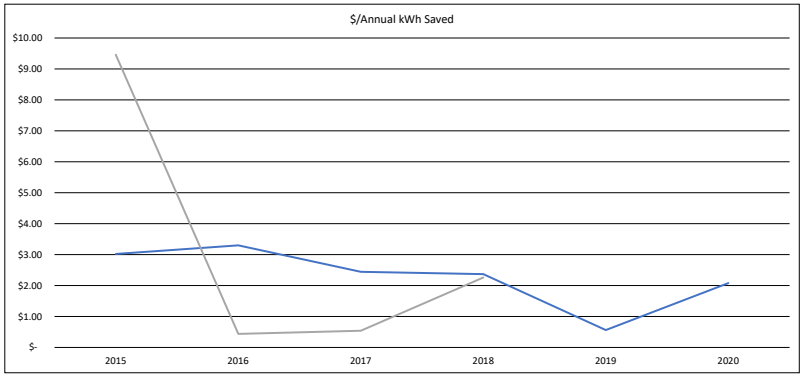


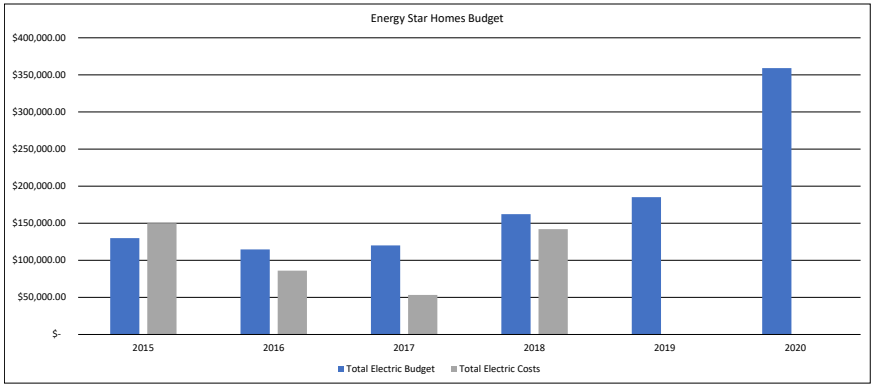
Energy Star Homes

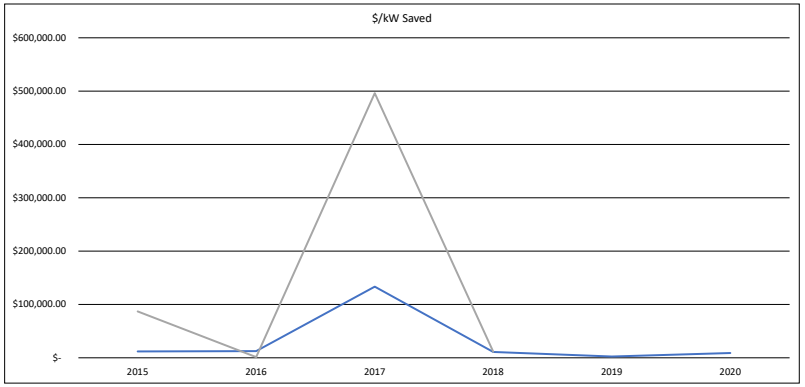
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 129,850.03	$ 114,652.66	$ 120,031.11	$ 162,234.85	$ 185,137.81	$ 359,195.01
	Annual Electric Savings Plan (kWh)	42,970.69	34,754.68	49,089.91	68,431.30	329,428.18	172,775.98
	$/Annual kWh Plan	$ 3.02	$ 3.30	$ 2.45	$ 2.37	$ 0.56	$ 2.08
2)	Total Electric Budget	$ 129,850.03	$ 114,652.66	$ 120,031.11	$ 162,234.85	$ 185,137.81	$ 359,195.01
	Total summer peak kW Plan	10.91	9.11	0.90	14.91	76.83	39.79
	$/kW Plan	$ 11,899.51	$ 12,590.64	$ 133,400.23	$ 10,880.75	$ 2,409.86	$ 9,027.79
3)	Total Electric Budget	$ 129,850.03	$ 114,652.66	$ 120,031.11	$ 162,234.85	$ 185,137.81	$ 359,195.01
	Total Annual MMBtu Plan	1,186.87	888.95	1,105.64	533.16	1,171.12	1,746.11
	$/Annual MMBtu Plan	$ 109.41	$ 128.98	$ 108.56	$ 304.29	$ 158.09	$ 205.71

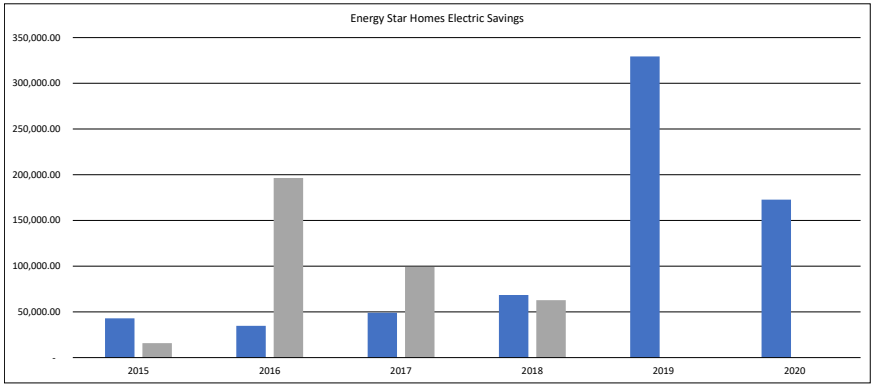
Energy Star Homes

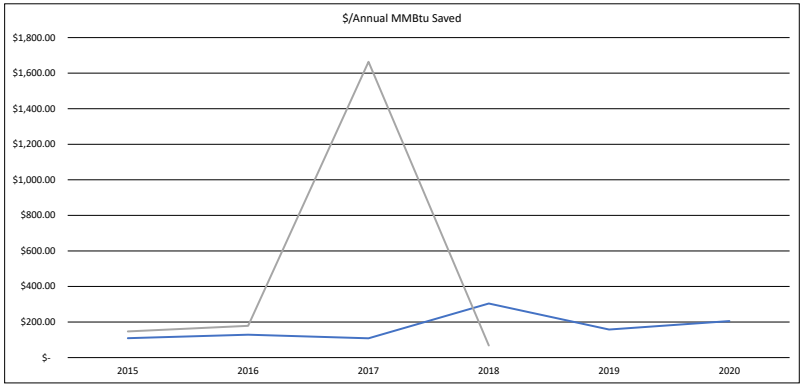
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 149,953.01	$ 85,986.60	$ 53,359.58	$ 141,967.71
	Annual Electric Savings Actual (kWh)	15,851.36	196,439.12	99,035.15	62,863.80
	$/Annual kWh Actual	$ 9.46	$ 0.44	$ 0.54	$ 2.26
2)	Total Electric Costs	$ 149,953.01	$ 85,986.60	$ 53,359.58	$ 141,967.71
	Total summer peak kW Actual	1.72	64.41	0.11	12.49
	$/kW Actual	$ 87,032.94	$ 1,334.91	$ 496,168.23	$ 11,368.13
3)	Total Electric Costs	$ 149,953.01	$ 85,986.60	$ 53,359.58	$ 141,967.71
	Total Annual MMBtu Actual	1,017.91	480.69	32.07	2,084.36
	$/Annual MMBtu Actual	$ 147.32	$ 178.88	$ 1,663.95	$ 68.11









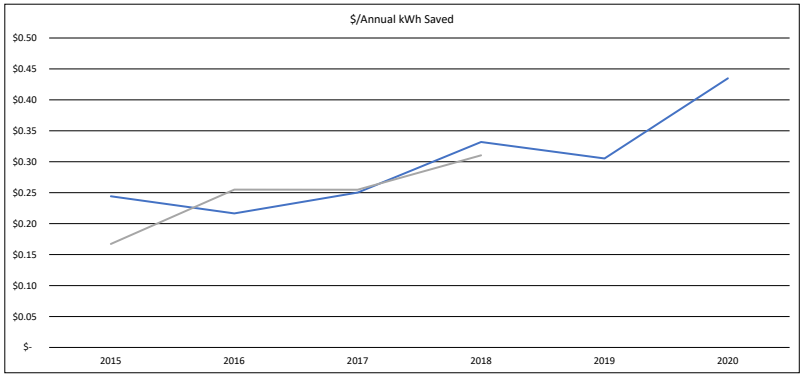


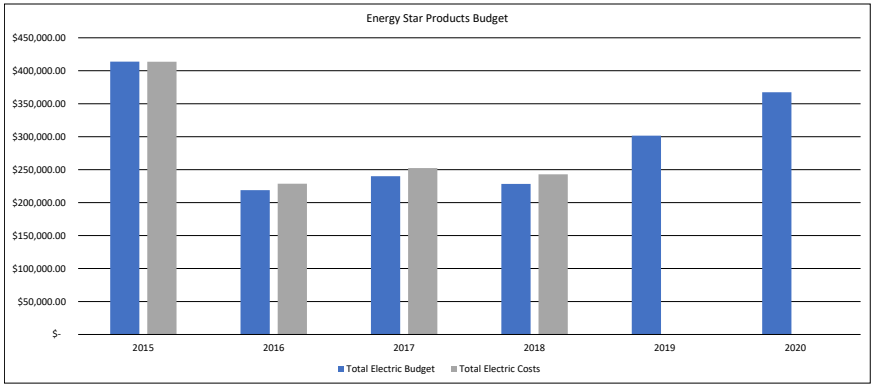
Energy Star Products

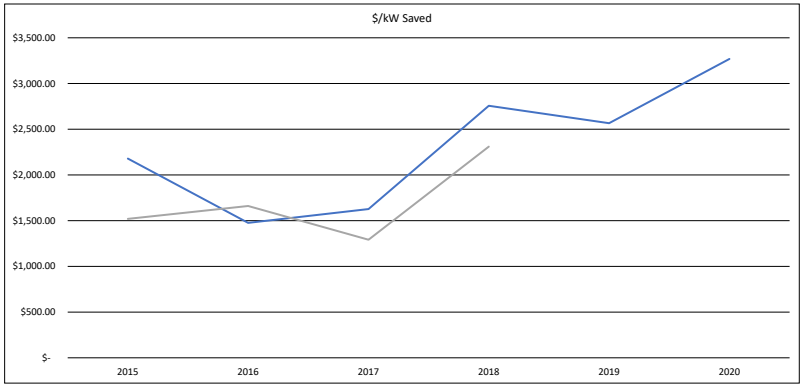
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 413,896.97	$ 218,882.36	$ 240,062.22	$ 228,330.53	$ 301,611.91	$ 367,436.22
	Annual Electric Savings Plan (kWh)	1,694,349.54	1,010,711.28	959,637.02	687,811.49	987,874.85	844,952.37
	$/Annual kWh Plan	$ 0.24	$ 0.22	$ 0.25	$ 0.33	$ 0.31	$ 0.43
2)	Total Electric Budget	$ 413,896.97	$ 218,882.36	$ 240,062.22	$ 228,330.53	$ 301,611.91	$ 367,436.22
	Total summer peak kW Plan	189.91	148.30	147.58	82.84	117.55	112.41
	$/kW Plan	$ 2,179.47	$ 1,475.95	$ 1,626.67	$ 2,756.42	$ 2,565.89	$ 3,268.79
3)	Total Electric Budget	$ 413,896.97	$ 218,882.36	$ 240,062.22	$ 228,330.53	$ 301,611.91	$ 367,436.22
	Total Annual MMBtu Plan	142.88	86.18	22.38	127.38	131.99	183.87
	$/Annual MMBtu Plan	$ 2,896.73	$ 2,539.71	$ 10,728.47	$ 1,792.52	$ 2,285.09	$ 1,998.37

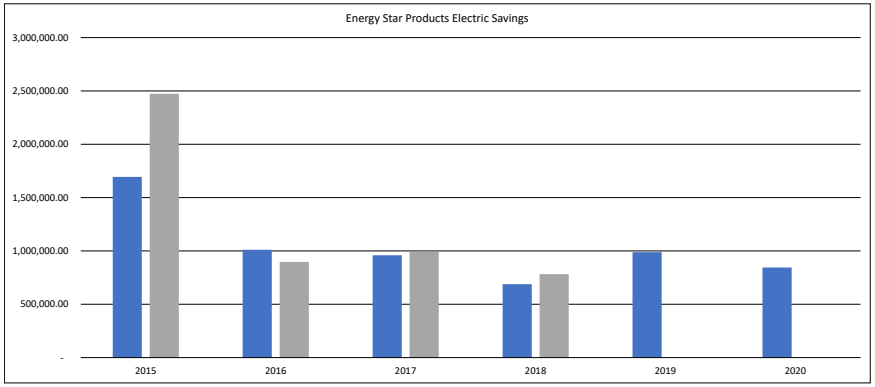
Energy Star Products

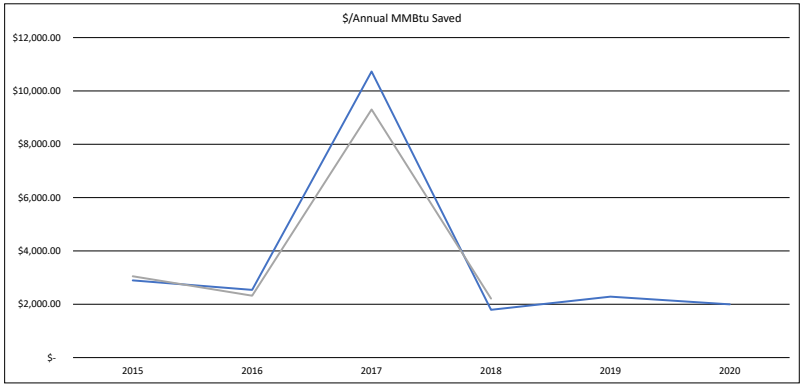
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 413,643.25	$ 228,647.55	$ 252,360.43	$ 242,907.54
	Annual Electric Savings Actual (kWh)	2,473,522.93	896,766.75	990,531.96	782,494.70
	$/Annual kWh Actual	$ 0.17	$ 0.25	$ 0.25	$ 0.31
2)	Total Electric Costs	$ 413,643.25	$ 228,647.55	$ 252,360.43	$ 242,907.54
	Total summer peak kW Actual	272.18	137.68	195.41	105.17
	$/kW Actual	$ 1,519.74	$ 1,660.70	$ 1,291.44	$ 2,309.77
3)	Total Electric Costs	$ 413,643.25	$ 228,647.55	$ 252,360.43	$ 242,907.54
	Total Annual MMBtu Actual	135.63	98.49	27.12	109.77
	$/Annual MMBtu Actual	$ 3,049.87	$ 2,321.58	$ 9,305.12	$ 2,212.86









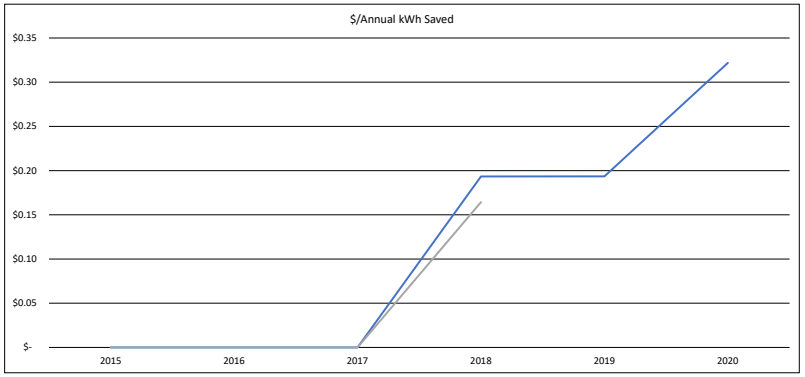


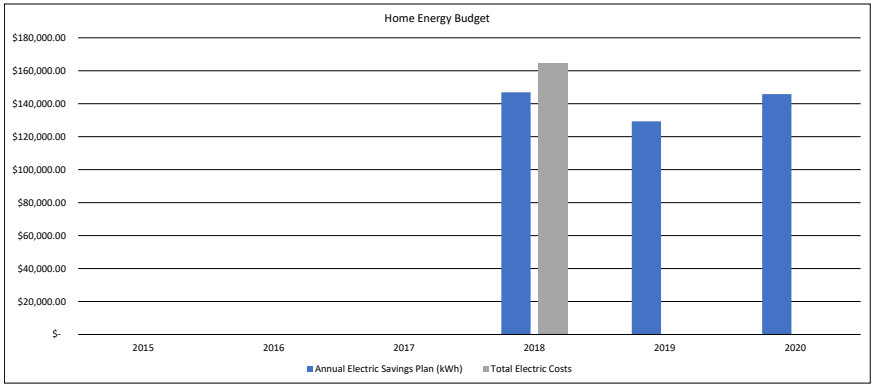
Home Energy Reports

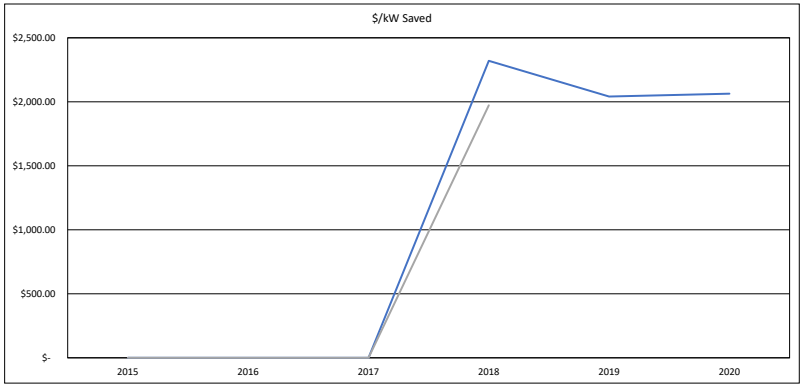
Planned		2015	2016	2017	2018	2019	2020
1)	Annual Electric Savings Plan (kWh)	$ -	$ -	$ -	$ 146,950.00	$ 129,300.00	$ 145,823.39
	Annual Electric Savings Plan (kWh)	-	-	-	760,000.00	668,000.00	453,050.35
	$/Annual kWh Plan	$ -	$ -	$ -	$ 0.19	$ 0.19	$ 0.32
2)	Total Electric Budget	$ -	$ -	$ -	$ 146,950.00	$ 129,300.00	$ 145,823.39
	Total summer peak kW Plan	-	-	-	63.33	63.33	70.68
	$/kW Plan	$ -	$ -	$ -	$ 2,320.26	$ 2,041.58	$ 2,063.22
3)	Total Electric Budget	$ -	$ -	$ -	$ 146,950.00	$ 129,300.00	$ 145,823.39
	Total Annual MMBtu Plan	-	-	-	-	-	-
	$/Annual MMBtu Plan	$ -	$ -	$ -	$ -	$ -	$ -

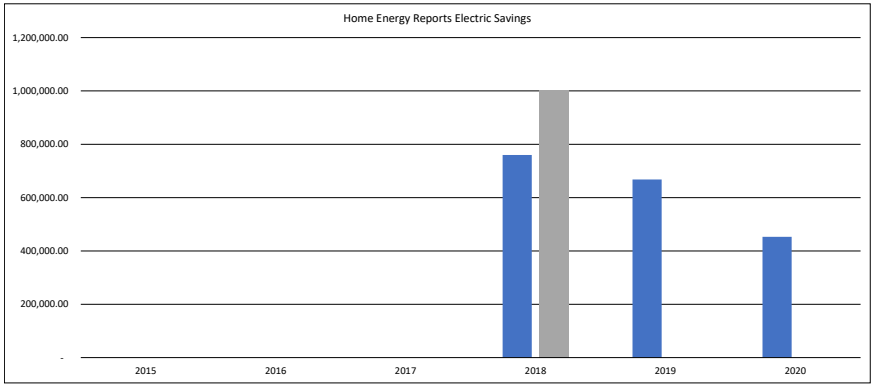
Home Energy Reports

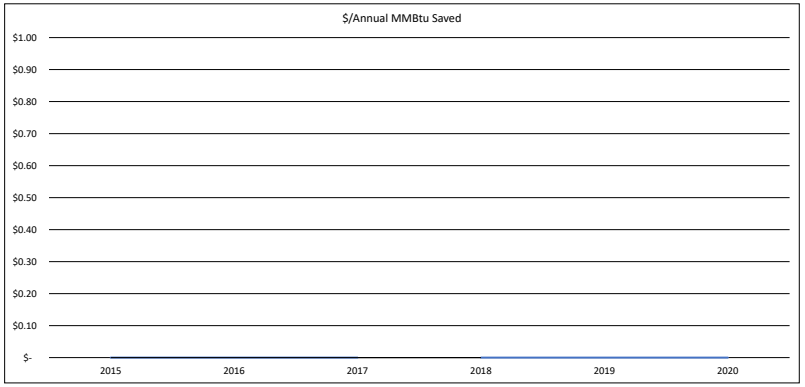
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ -	$ -	$ -	$ 164,702.60
	Annual Electric Savings Actual (kWh)	-	-	-	1,001,918.20
	$/Annual kWh Actual	$ -	$ -	$ -	$ 0.16
2)	Total Electric Costs	$ -	$ -	$ -	$ 164,702.60
	Total summer peak kW Actual	-	-	-	83.49
	$/kW Actual	$ -	$ -	$ -	$ 1,972.65
3)	Total Electric Costs	$ -	$ -	$ -	$ 164,702.60
	Total Annual MMBtu Actual	-	-	-	
	$/Annual MMBtu Actual	$ -	$ -	$ -	$ -









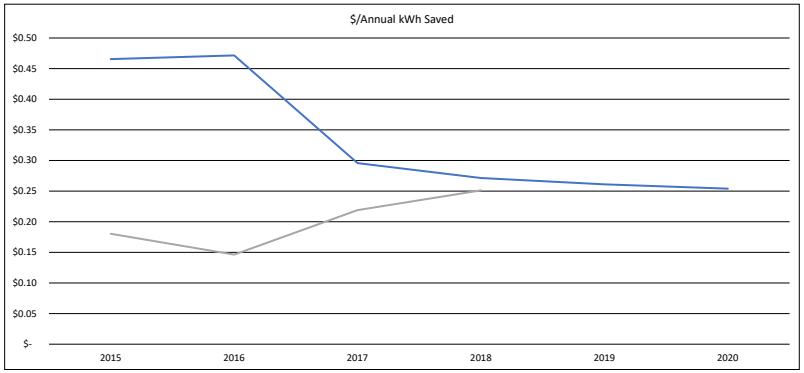


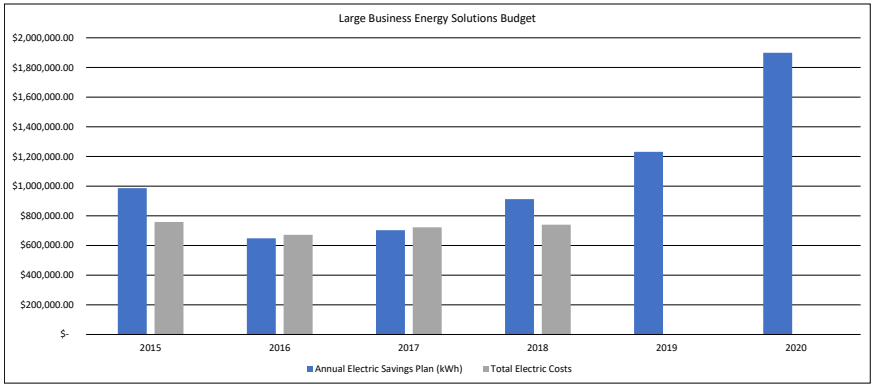
Large Business Energy Solutions

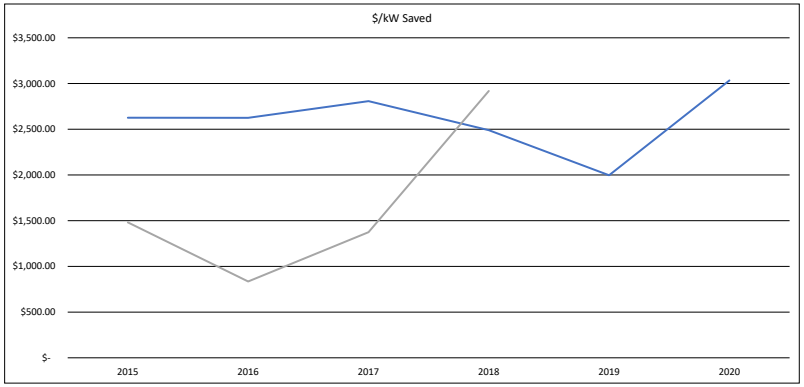
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Annual Electric Savings Plan (kWh)	$ 986,516.79	$ 648,100.80	$ 703,049.76	$ 912,650.57	$ 1,231,211.44	$ 1,898,823.97
	Annual Electric Savings Plan (kWh)	2,119,438.41	1,374,366.90	2,378,148.71	3,363,034.81	4,717,156.03	7,475,706.83
	$/Annual kWh Plan	$ 0.47	$ 0.47	$ 0.30	$ 0.27	$ 0.26	$ 0.25
2)	Total Electric Budget	$ 986,516.79	$ 648,100.80	$ 703,049.76	$ 912,650.57	$ 1,231,211.44	$ 1,898,823.97
	Total summer peak kW Plan	375.77	246.88	250.40	366.51	616.65	625.86
	$/kW Plan	$ 2,625.32	$ 2,625.16	$ 2,807.71	$ 2,490.11	$ 1,996.63	$ 3,033.96
3)	Total Electric Budget	$ 986,516.79	$ 648,100.80	$ 703,049.76	$ 912,650.57	$ 1,231,211.44	$ 1,898,823.97
	Total Annual MMBtu Plan	-	-	-	-	-	-
	$/Annual MMBtu Plan	$ -	$ -	$ -	$ -	$ -	$ -

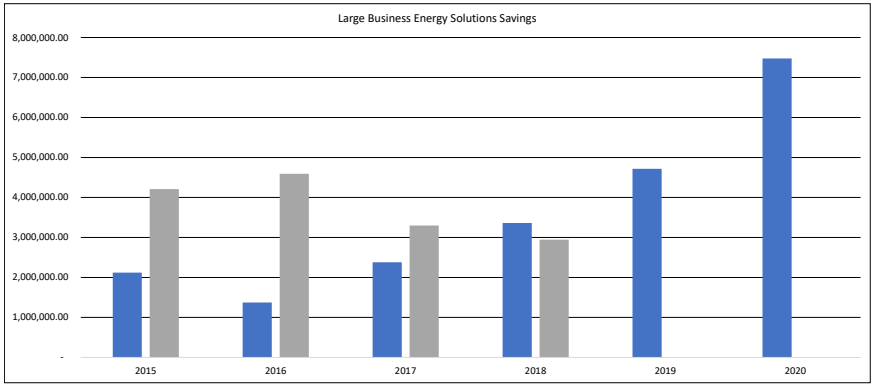
Large Business Energy Solutions

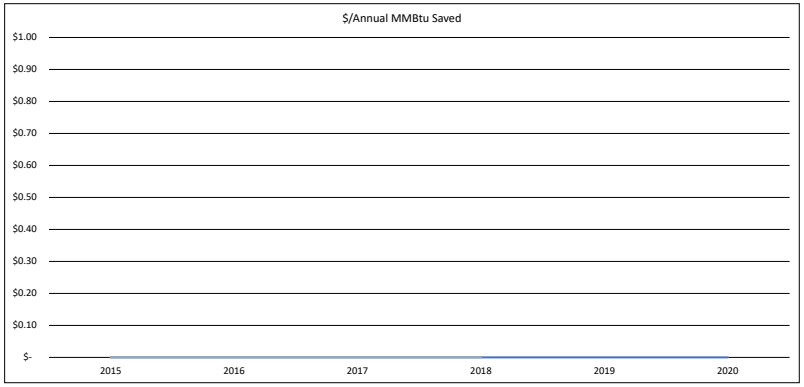
Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Costs	$ 758,942.69	$ 671,700.75	$ 722,352.73	$ 739,766.19
	Annual Electric Savings Actual (kWh)	4,209,731.13	4,591,503.58	3,298,929.54	2,945,170.28
	$/Annual kWh Actual	$ 0.18	$ 0.15	$ 0.22	$ 0.25
2)	Total Electric Costs	$ 758,942.69	$ 671,700.75	$ 722,352.73	$ 739,766.19
	Total summer peak kW Actual	512.42	804.65	525.73	253.49
	$/kW Actual	$ 1,481.09	$ 834.77	$ 1,374.01	$ 2,918.28
3)	Total Electric Costs	$ 758,942.69	$ 671,700.75	$ 722,352.73	$ 739,766.19
	Total Annual MMBtu Actual	-	-	-	-
	$/Annual MMBtu Actual	$ -	$ -	$ -	$ -









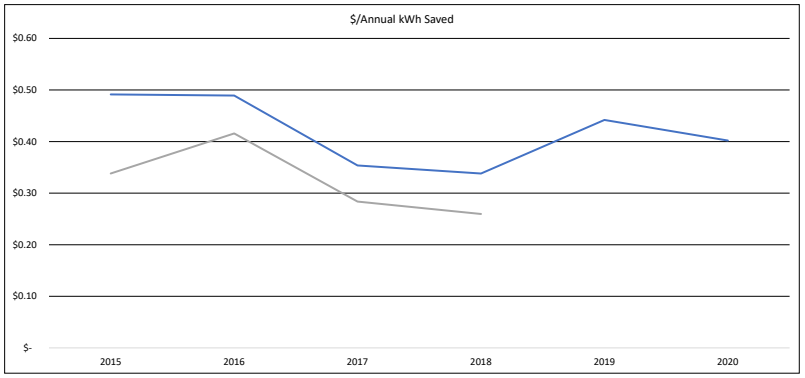


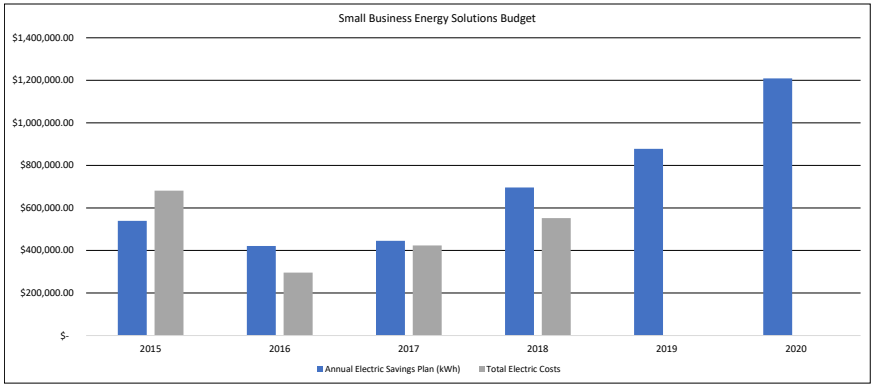
Small Business Energy Solutions

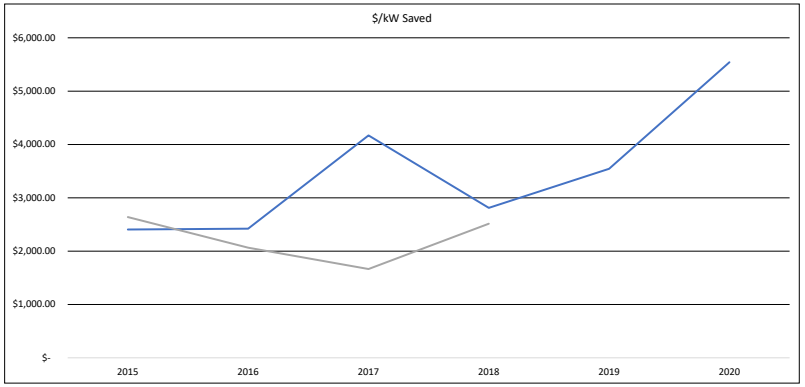
Planned		2015	2016	2017	2018	2019	2020
1)	Annual Electric Savings Plan (kWh)	$ 539,501.37	$ 421,265.52	$ 445,264.85	$ 695,978.13	$ 877,784.36	$ 1,208,871.38
	Annual Electric Savings Plan (kWh)	1,097,858.23	860,961.22	1,259,303.25	2,058,733.62	1,986,225.15	3,007,126.22
	$/Annual kWh Plan	$ 0.49	$ 0.49	$ 0.35	$ 0.34	$ 0.44	$ 0.40
2)	Total Electric Budget	$ 539,501.37	$ 421,265.52	$ 445,264.85	$ 695,978.13	$ 877,784.36	$ 1,208,871.38
	Total summer peak kW Plan	224.27	173.92	106.80	247.48	247.65	218.14
	$/kW Plan	$ 2,405.55	$ 2,422.14	$ 4,169.17	$ 2,812.23	$ 3,544.45	$ 5,541.82
3)	Total Electric Budget	$ 539,501.37	$ 421,265.52	$ 445,264.85	$ 695,978.13	$ 877,784.36	$ 1,208,871.38
	Total Annual MMBtu Plan	-	-	-	-	-	-
	$/Annual MMBtu Plan	$ -	$ -	$ -	$ -	$ -	$ -

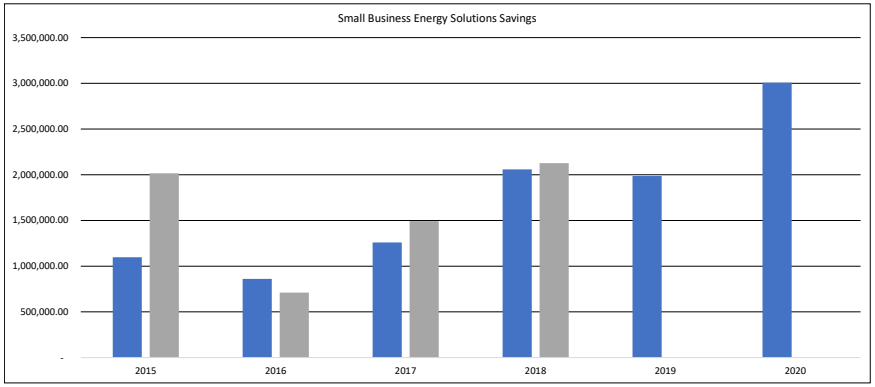
Small Business Energy Solutions

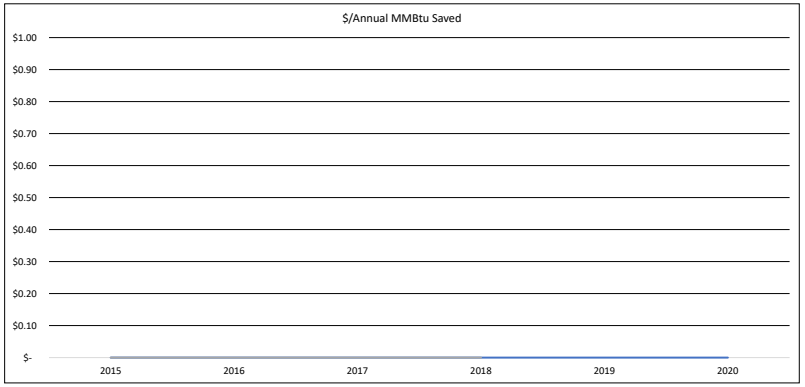
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 681,255.21	$ 295,732.97	$ 423,319.49	$ 552,031.47
	Annual Electric Savings Actual (kWh)	2,015,429.01	711,323.10	1,492,157.24	2,126,374.28
	$/Annual kWh Actual	$ 0.34	$ 0.42	$ 0.28	$ 0.26
2)	Total Electric Costs	$ 681,255.21	$ 295,732.97	$ 423,319.49	$ 552,031.47
	Total summer peak kW Actual	258.17	143.16	254.31	219.57
	$/kW Actual	$ 2,638.78	$ 2,065.69	$ 1,664.55	$ 2,514.11
3)	Total Electric Costs	$ 681,255.21	$ 295,732.97	$ 423,319.49	$ 552,031.47
	Total Annual MMBtu Actual	-	-	-	-
	$/Annual MMBtu Actual	$ -	$ -	$ -	$ -









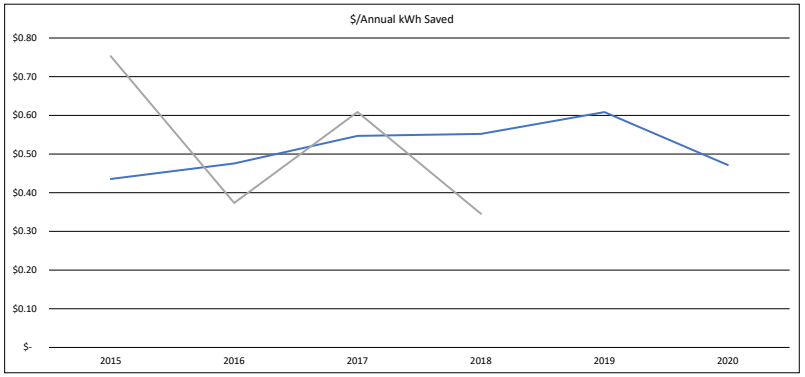


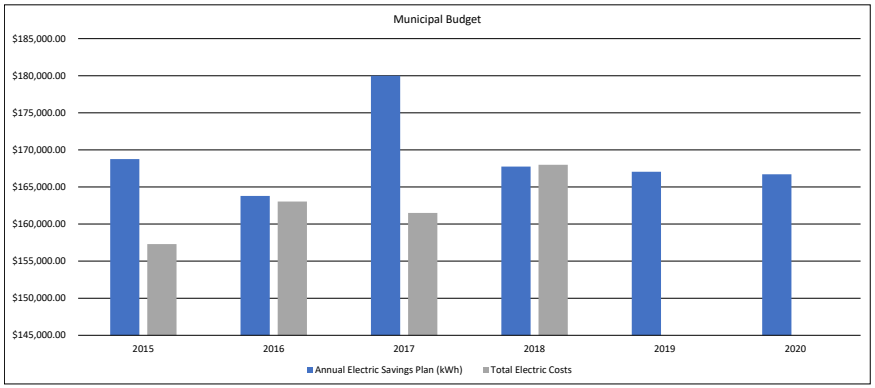
Municipal

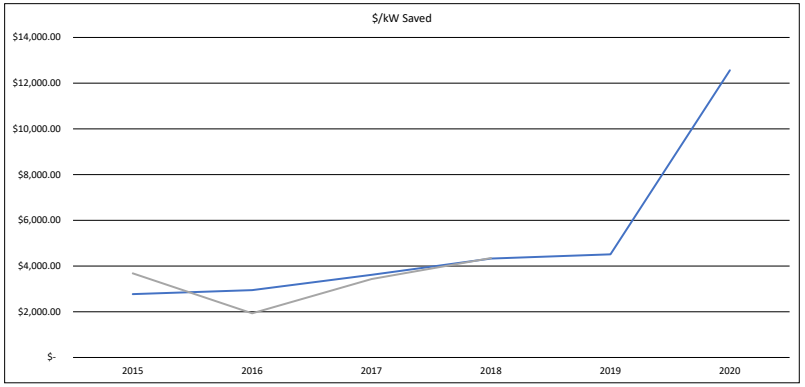
Planned		2015	2016	2017	2018	2019	2020
1)	Annual Electric Savings Plan (kWh)	$ 168,757.07	$ 163,787.53	$ 179,990.30	$ 167,754.53	$ 167,047.78	$ 166,712.82
	Annual Electric Savings Plan (kWh)	387,462.02	344,320.92	329,094.14	303,814.79	274,539.99	353,603.33
	$/Annual kWh Plan	$ 0.44	$ 0.48	$ 0.55	$ 0.55	$ 0.61	$ 0.47
2)	Total Electric Budget	$ 168,757.07	$ 163,787.53	$ 179,990.30	$ 167,754.53	$ 167,047.78	$ 166,712.82
	Total summer peak kW Plan	60.88	55.57	49.75	38.77	37.03	13.27
	$/kW Plan	$ 2,771.77	$ 2,947.59	$ 3,618.26	$ 4,327.39	$ 4,510.93	$ 12,563.97
3)	Total Electric Budget	$ 168,757.07	$ 163,787.53	$ 179,990.30	$ 167,754.53	$ 167,047.78	$ 166,712.82
	Total Annual MMBtu Plan	167.47	159.50	-	39.55	59.41	-
	$/Annual MMBtu Plan	$ 1,007.71	$ 1,026.91	$ -	$ 4,241.36	$ 2,811.83	$ -

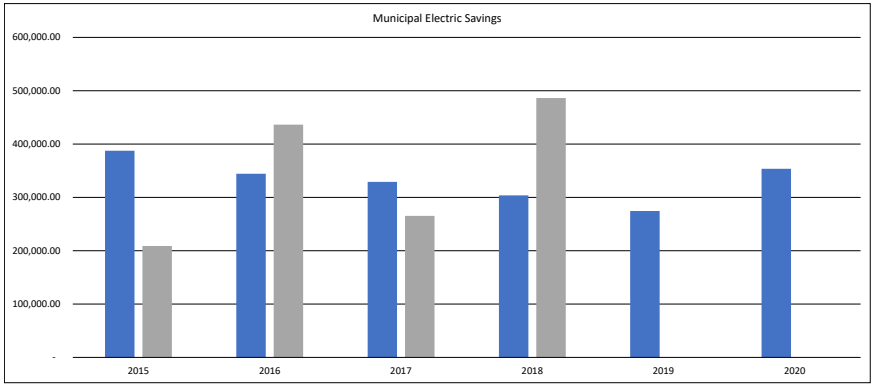
Municipal

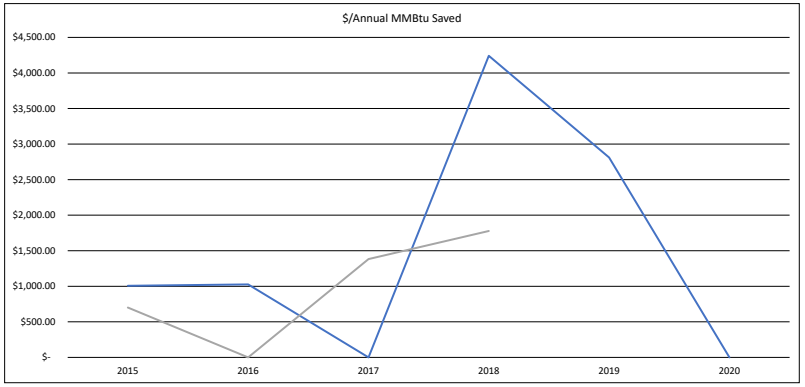
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 157,291.46	$ 163,041.91	$ 161,504.59	$ 167,984.97
	Annual Electric Savings Actual (kWh)	208,878.40	436,335.10	265,410.20	486,351.10
	$/Annual kWh Actual	$ 0.75	$ 0.37	$ 0.61	$ 0.35
2)	Total Electric Costs	$ 157,291.46	$ 163,041.91	$ 161,504.59	$ 167,984.97
	Total summer peak kW Actual	42.75	84.37	47.08	38.61
	$/kW Actual	$ 3,679.72	$ 1,932.35	$ 3,430.31	$ 4,350.56
3)	Total Electric Costs	$ 157,291.46	$ 163,041.91	$ 161,504.59	$ 167,984.97
	Total Annual MMBtu Actual	224.40	-	116.80	94.50
	$/Annual MMBtu Actual	$ 700.94	$ -	$ 1,382.74	$ 1,777.62











Program Cost-Effectiveness - 2020 PLAN

	Total Resource Benefit / Cost Ratio	Benefit ($000)	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.50	1,161.1	775.3	-	71.3	968.3	7.0	12.6	418	2,329.9	46,634.7
Energy Star Homes	1.87	1,360.4	540.5	185.4	163.9	3,896.3	39.5	25.0	89	1,490.7	37,136.7
Home Performance with Energy Star	2.51	2,899.4	708.3	446.8	169.0	2,861.4	16.8	39.7	868	6,066.0	119,858.1
Energy Star Products	1.98	2,435.7	858.4	369.8	2,710.1	18,293.4	683.9	357.4	49,672	424.3	5,940.8
ISO-NE Forward Capacity Market Expenses	0.00	-	6.0	-	-	-	-	-		-	-
Sub-Total Residential	**2.02**	**7,856.5**	**2,888.6**	**1,002.0**	**3,114.1**	**26,019.4**	**747.2**	**434.8**	**51,047**	**10,311.0**	**209,570.4**
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.03	3,294.5	635.5	983.8	2,564.1	33,333.9	388.8	353.5	39	-	-
Small Business Energy Solutions	1.30	1,366.4	593.0	457.9	1,209.6	15,939.1	72.9	108.2	119	-	-
Municipal Energy Solutions	0.96	246.8	163.3	93.4	128.8	1,674.0	10.1	13.1	12	245.8	3,195.0
Education	0.00	-	76.4	-	-	-	-	-	-	-	-
ISO Forward Capacity Market Expenses	0.00	-	14.0	-	-	-	-	-	-	-	-
Sub-Total Commercial & Industrial	**1.63**	**4,907.6**	**1,482.2**	**1,535.1**	**3,902.5**	**50,947.0**	**471.8**	**474.8**	**170**	**245.8**	**3,195.0**
Smart Start	0.00	-	5.0	-	-	-	-	-	-	-	-
Total	**1.85**	**12,764.1**	**4,375.8**	**2,537.1**	**7,016.7**	**76,966.5**	**1,218.9**	**909.6**	**51,217**	**10,556.8**	**212,765.4**

Note: a 10% NEI adder is applied to total benefits excluding water.

Annual kWh Savings	7,016,661	69.4%	**kWh > 55%**	**Lifetime** kWh Savings	76,966,456	55.2%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	3,093,887	30.6%		**Lifetime** MMBTU Savings (in kWh)	62,355,397	44.8%	
	10,110,547	100.0%			**139,321,853**	100.0%	

Present Value Benefits - 2020 PLAN

	Total Benefits ($000)	Resource Benefits ($000)																Non-Resource Benefits ($000)		
		Electric												Non-Electric		Total Resource Benefits				
		CAPACITY				ENERGY														
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE	Total Electric Benefit	Other Fuels	Water Benefit			Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits
Residential Programs																				
Home Energy Assistance	$ 1,161	$ 13	$ -	$ 15	$ 13	$ 17	$ 20	$ 7	$ 8	$ 3	$ 96	$ 828	$ -	$ 924	$ 52	$ 185	$ 237			
Energy Star Homes	$ 1,360	$ 39	$ -	$ 40	$ 34	$ 75	$ 82	$ 17	$ 21	$ 8	$ 317	$ 872	$ 9	$ 1,198	$ 44	$ 119	$ 162			
Home Performance with Energy Star	$ 2,899	$ 45	$ -	$ 49	$ 43	$ 45	$ 60	$ 18	$ 24	$ 8	$ 292	$ 2,232	$ -	$ 2,524	$ 123	$ 252	$ 375			
Energy Star Products	$ 2,436	$ 168	$ -	$ 227	$ 197	$ 451	$ 298	$ 208	$ 139	$ 112	$ 1,801	$ 90	$ 349	$ 2,240	$ 6	$ 189	$ 195			
ISO-NE Forward Capacity Market Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			
Sub-Total Residential	**$ 7,857**	**$ 265**	**$ -**	**$ 330**	**$ 287**	**$ 589**	**$ 461**	**$ 250**	**$ 192**	**$ 132**	**$ 2,505**	**$ 4,023**	**$ 359**	**$ 6,887**	**$ 224**	**$ 745**	**$ 970**			
Commercial/Industrial Programs																				
Large Business Energy Solutions	$ 3,294	$ 310	$ -	$ 362	$ 314	$ 772	$ 676	$ 258	$ 179	$ 124	$ 2,995	$ -	$ -	$ 2,995	$ -	$ 299	$ 299			
Small Business Energy Solutions	$ 1,366	$ 97	$ -	$ 113	$ 98	$ 328	$ 264	$ 158	$ 127	$ 58	$ 1,242	$ -	$ -	$ 1,242	$ -	$ 124	$ 124			
Municipal Energy Solutions	$ 247	$ 12	$ -	$ 13	$ 12	$ 39	$ 28	$ 16	$ 11	$ 6	$ 136	$ 85	$ -	$ 222	$ 3	$ 22	$ 25			
Education	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			
ISO Forward Capacity Market Expenses	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			
Sub-Total Commercial & Industrial	**$ 4,908**	**$ 419**	**$ -**	**$ 488**	**$ 423**	**$ 1,139**	**$ 968**	**$ 432**	**$ 316**	**$ 188**	**$ 4,373**	**$ 85**	**$ -**	**$ 4,459**	**$ 3**	**$ 446**	**$ 449**			
Smart Start	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			
Total	**$ 12,764**	**$ 684**	**$ -**	**$ 818**	**$ 710**	**$ 1,728**	**$ 1,429**	**$ 682**	**$ 508**	**$ 319**	**$ 6,879**	**$ 4,108**	**$ 359**	**$ 11,345**	**$ 228**	**$ 1,191**	**$ 1,419**			

Portfolio Planned Versus Actual Performance - 2020

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	*125% of Planned PI*	Actual PI	Source
1	Lifetime kWh Savings	76,966,456	*57,724,842*		-	1.925%	-	$ 84,138	$ *105,173*	$ -	Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	7,016,661	*5,262,496*		-	0.550%	-	$ 24,039	$ *30,049*	$ -	Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	909.6144	*591.2493*		-	0.660%	-	$ 28,847	$ *36,059*	$ -	Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	1,218.9096	*792.2913*		-	0.440%	-	$ 19,232	$ *24,039*	$ -	Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$ 11,345,443			-						Planned and Actual from Benefits Tab
6	Total Utility Costs[1,2]	$ 4,370,805			-						Planned and Actual from Cost Eff Tab
7	Net Benefits	$ 6,974,638	$ *5,230,978*	$ -	-	1.925%	-	$ 84,138	$ *105,173*	$ -	Line 5 minus line 6
8	Total					5.500%	-	$ 240,394	$ *300,493*	$ -	

		Total Resource Cost Test		
		Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 12,764,134		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 240,394	$ -	from row 8 above
11	Participant Costs	$ 2,537,145		Planned and Actual from Cost Eff Tab
12	Total Utility Costs	$ 4,375,805	$ -	from row 6 above
13	**Portfolio TRC BCR**	**1.78**	-	row 9 divided by rows 10+11+12

All dollar values are expressed in 2020 dollars.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

[2] Net of Smart Start

NHEC Home Energy Assistance Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
Oil-Wxn: Air Sealing, Insulation, Water measures	42	14	85				19	24	19	87%	87%				9	22	8	98%	98%	7,041	7,185	12,757
Propane-Wxn: Air Sealing, Insulation, Water measures	42	9	85				21	22	21	87%	87%				4	9	3	98%	98%	3,284	1,877	5,950
Kerosene-Wxn: Air Sealing, Insulation, Water measures	42	18	85				20	23	20	87%	87%				9	18	8	98%	98%	7,215	7,184	13,074
Electric-Wxn: Air Sealing, Insulation, Water measures	38		77	580	580	580	16	16	16	87%	87%	310,215		624,531				98%	98%			
Cord Wood-Wxn: Air Sealing, Insulation, Water measures	42	11	85				20	23	20	87%	87%				3	20	3	98%	98%	2,788	4,986	5,051
All Fuels- Thermostat	24	13	48	44	32	44	15	10	25	87%	87%	13,598	3,658	45,627				100%	100%			
												-	-									
LED Lighting Products	28	35	213	567	464	55	5	5	5	87%	87%	68,841	70,576	50,805				100%	100%			
Refrigerator	15	10	31	773	775	773	12	12	12	87%	87%	122,861	80,765	247,346				100%	100%			
Direct Install Water Measures (if broken out from Wxn)		30			114	-		4		87%		-	11,895				-					
Oil Boiler Replacement, >=87% AFUE	2		6				25		25	87%	87%				17	13	17	100%	100%	956		2,545
Kerosene Boiler Replacement, >=87% AFUE	1		1				25		25	87%	87%				8		8	100%	100%	107		285
Oil Furnace Replacment, >=87% ECM	6	2	15				20	20	20	87%	87%				11	11	11	100%	100%	1,165	426	3,101
Propane Furnace Replacment, >=95% ECM	1	2	3				20	20	20	87%	87%				37	7	37	100%	100%	814	265	2,167
Kerosene Furnace Replacment, >=87% ECM	3	2	7				20	20	20	87%	87%				12	19	12	100%	100%	640	768	1,705
Furnace Tune Up		5			32			20		87%			2,763									
WXn Admin Fee (if not captured above)	42	43	85				1	1	1	87%	87%							100%	100%			
WXn Quality Assurance		1						1	1	87%	87%							100%	100%			
Insulation		39			592			25		87%	87%		501,849					100%	100%			
Air Sealing		26			145			15		87%	87%		49,128					100%	100%			
Health and Safety	40	37	80				1	1	1	87%	87%							100%	100%			
Fixtures		6			311			5		87%	87%		8,095					100%	100%			
Efficient Windows		2			10			25		87%	87%		413					100%	100%			
Efficient Doors		2			30			25		87%	87%		1,282					100%	100%			
Heating Replacement-Heat Pump		1			(1,011)			20		87%	87%		(17,571)			79.19		100%	100%		1,584	
																		100%	100%			
Program Summary*				**44,119**	**48,481**	**71,263**						**515,515**	**712,854**	**968,309**	**1,204**	**1,067**	**2,330**			**24,009**	**24,276**	**46,635**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. All Annual Energy Savings and Measure Lives were updated for 2018-2020 to reflect more current information based on 2016 participation results. LED Measure Life updated to 5 years.
2. US DOE WAP Collaboration: The federal Weatherization Assistance Program is expected to fund additional work and achieve additional MMBTU Savings.
3. For gas heated homes, customer may be served by both gas and electric utilities in this program, but gas companies will pay for the weatherization project up to their cap first and will claim associated MMBTU savings.

NHEC Home Performance with ENERGY STAR®

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
Oil-Wxn: Air Sealing, Insulation, Water measures	72	45	177				21	21	21	100%	99%				15	37	16	100%	100%	22,345	35,034	60,349
Propane-Wxn: Air Sealing, Insulation, Water measures	72	25	177				21	22	21	100%	99%				6	30	7	100%	100%	9,544	16,460	25,788
Gas-Wxn: Air Sealing, Insulation, Water measures		1						23		100%						64.15	70	100%	100%		1,476	
Kerosene-Wxn: Air Sealing, Insulation, Water measures	72	3	177				22	21	22	100%	99%				0	20	0	100%	100%	699	1,301	1,886
Electric-Wxn: Air Sealing, Insulation, Water measures	64		159	803.0		803	21		21	100%	99%	1,064,169		2,609,513				100%	100%			
Cord Wood-Wxn: Air Sealing, Insulation, Water measures	72	33	177				21	22	21	100%	99%				5	16	5	100%	100%	7,342	11,651	19,805
										100%			-									
AC Ancillary Savings		36			63			20		100%			45,158					100%				
Air Sealing		92			381			15		100%			525,090					100%				
Insulation		92			627			25		100%			1,441,502					100%				
Boiler Ancillary Savings		39			16			20		100%			12,238					100%				
Furnace Ancillary Savings		20			92			20		100%			36,960					100%				
All Fuels- Thermostat	8	19	19	210	497	210	15	10	15	100%	100%	24,787	94,369	61,395				100%	100%			
										100%			-									
LED Lighting Products	36	47	443	469	274	17	5	5	5	100%	99%	85,551	64,435	38,127				100%	100%			
Refrigerator		1			818	804	12	12	12	100%	99%		9,816					100%	100%			
Direct Install Water Measures (if broken out from Wxn)		20			101			4		100%			8,072									
Health & Safety	38	39	94					1	1	100%												
Custom	20	35	50					1	1	100%												
3rd Party Financing	1	7	1					1	1	100%												
										100%												
Boiler Replacement, User Defined		2						25		100%						13		100%	0%		655	
WXn Admin Fee (if not captured above)	72	94	177					1	1	100%	100%							100%	100%			
										100%												
Water Heater Replacement		1			163		5	20		100%	100%		3,253			10		100%			200	
Visual Audit Oil Savings			42						14	100%	100%		-				11	100%	100%			6,554
Visual Audit Propane Savings			42						14	100%	100%		-				11	100%	100%			6,554
Visual Audit kW Savings			91			335			5	100%	100%		-	152,317								
Program Summary*				**70,461**	**122,706**	**168,953**						**1,174,507**	**2,240,894**	**2,861,351**	**1,912**	**3,132**	**6,118**			**39,930**	**66,776**	**120,936**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. For LED Annual kWh savings, we assumed the same weighted average energy savings as the lighting program but longer hours use (3 hours/day vs. 2 hours/day as the program requires retrofit lights to be on 3 or more hours/day). The measure life for LEDs has been updated to 5 years
2. Ancillary kWh Savings are no longer separated as they are included in the weatherization measure savings as approporiate.

NHEC ENERGY STAR® Homes

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020	2018 Plan	2018 Actual	2020	2018	2020	2018 Plan	2018 Actual	2020
SF-Propane Heated Home	18	13	62		907		25	25	25	100%	100%		294,808		24	53	24	100%	100%	10,972	17,274	36,969
SF-Electric Heated Home	8		27	3,625		3,625	25		25	100%	100%	708,806		2,417,274			-	100%	100%			
Renovation		1			183			25		100%			4,575			58		100%			1,450	
Propane Cooling		11			187			25		100%			51,400					100%				
Propane Hot Water		14						25		100%						6.35		100%			2,223	
Air Source Heating (including DHPs)		2			12,730			25		100%	100%		636,500					100%	100%			
Heat Pump Cooling (including DHPs)		2			(37)			25		100%	100%		(1,850)					100%	100%			
Heat Pump Water	8	2	27	2,043	1,425	2,043	25	25	25	100%	100%	404,325	71,225	1,362,342				100%	100%			
LED Lighting Products	290	234	533	20	20	12	5	5	5	100%	100%	29,421	23,718	30,921				100%	100%			
LED Fixture		36			20			5		100%	100%		3,649					100%	100%			
Clothes Washer	13	8	44	89	89	89	14	14	14	100%	100%	16,378	9,931	55,184	0	0	0	100%	100%	50	30	167
Clothes Dryer		3						12		100%	100%							100%	100%			
Refrigerator	18	10	62	41	41	41	12	12	12	100%	100%	9,088	4,920	30,621				100%	100%			
ES Homes (Net Zero Competition & QA)	1		1				1		1	100%	100%							100%	100%			
Rem Rate Fee			89				1	1	1	100%	100%							100%	100%			
Admin fee	26	1					1	1	1	100%	100%							100%	100%			
Program Summary*				**52,681**	**48,859**	**163,862**						**1,168,018**	**1,098,876**	**3,896,343**	**442**	**840**	**1,491**			**11,022**	**20,976**	**37,137**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. The Energy Star Homes Heat Pump Program was merged in to the Energy Star Homes program for 2015-2016. The new single family homes with heat pumps are listed at the bottom of the table, broken down by savings type (heating, cooling, hot water, lights & appliances).
2. Measure Life Changes:
   > LEDs measure life changed to 5 years.
3. Lighting & Appliance Energy Savings have been updated per the EPA Energy Star Appliance Calculators and NH evaluation results.

NHEC ENERGY STAR® Products Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
LED Lighting Products	57,751	91,009	180,434	20.3	20.3	12	5	5	5	89%	89%	5,209,740	8,209,999	9,314,011				100%	100%			
DHW Heat Pump Water Heater 50 gal	77			1,384.0			13			100%		1,384,000						100%	100%			
DHW Heat Pump Water Heater 80 gal	19			1,640.0			13			100%		410,000						100%	100%			
ES Dehumidifier	98	355	546	214.0	214.0	214	12	12	12	100%	100%	251,176	911,640	1,402,012				100%	100%			
ES Pool Pumps (2 speed)	10	1	45	842.0	842.0	842	10	10	10	100%	100%	88,238	8,420	383,078				100%	100%			
ES Pool Pumps (Variable Speed)	10	24	68	1,062.0	1,062.0	1,062	10	10	10	100%	100%	111,294	254,880	724,755				100%	100%			
ES Clothes Washers	140	345	682	88.7	88.7	89	14	14	14	100%	100%	173,450	428,262	847,143	0.3	0.3	0.3	100%	100%	526	1,299	2,570
ES Clothes Dryers	112	335	682	93.3	93.3	93	12	12	12	100%	100%	125,152	375,066	764,064				100%	100%			
ES Room AC (room)	140	139	455	16.2	16.2	16	9	9	9	100%	100%	20,322	20,216	66,170				100%	100%			
ES Room Air Purifier	28	83	227	390.5	390.5	391	9	9	9	50%	50%	49,108	145,852	399,741				100%	100%			
ES Refrigerator	98	331	591	64.3	64.3	64	12	12	12	100%	100%	75,470	255,400	456,364				100%	100%			
						-																
Primary Refrigerator Recycling/Pickup/Turnin	28	56	91	491.6	491.6	492	8	8	8	100%	100%	109,905	220,237	357,855				100%	100%			
2nd Refrigerator Pickup/Turnin	84	136	227	755.0	755.0	755	8	8	8	100%	100%	506,376	821,440	1,373,986				100%	100%			
2nd Freezer Pickup/Turnin	8	47	91	658.0	658.0	658	8	8	8	100%	100%	40,855	247,408	478,984				100%	100%			
Room AC Pickup/Turnin	2		7	16.2		16	5		5	100%	100%	173		562				100%	100%			
ECM Motors for FHA Furnace Fans	1		3	168.0		168	18		18	100%	100%	2,837		9,238				100%	100%			
ECM Motor for FWH Circulating Pump	1		3	142.0		142	15		15	100%	100%	1,998		6,507				100%	100%			
Refrigerator CEE Tier 2+	279	86	227	96.4	96.4	96	12	12	12	100%	100%	323,276	99,485	263,150				100%	100%			
Washer Tier CEE Tier 2+	349	231	546	155.9	155.9	156	14	14	14	100%	100%	762,428	504,181	1,191,601	0.4	0.4	0.4	100%	100%	2,157	1,426	3,371
Dryer Hybrid	8	1	45	229.4	229.4	229	12	12	12	100%	100%	21,365	2,753	125,242				100%	100%			
Dryer Heat Pump	8	3	23	472.3	472.3	472	12	12	12	100%	100%	43,988	17,003	128,927				100%	100%			
Program Summary*				**1,426,967**	**2,052,966**	**2,710,037**						**9,711,150**	**12,522,240**	**18,293,391**	**192**	**194.7**	**424.3**			**2,683**	**2,725**	**5,941**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. The Annual kWH Savings for LEDs were adjusted to reflect the weighted average of bulbs they are intended to replace (using halogen wattages, per the Energy Security & Independence Act of 2007).
2. Measure Life Changes:
   > LEDs measure life changed to 5 years.
3. Appliance Energy Savings have been updated per the EPA Energy Star Appliance Calculators and NH evaluation results.

NHEC Large Business Energy Solutions Programs

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
Retrofit Track																						
Snowmaking		5	4		44,860	118,798		13	13	99.86%	99.86%		2,911,771	5,999,015								
Lighting-LED	20	6	29	73,479	48,256	67,281	13	13	13	99.86%	99.86%	18,930,233	3,727,221	25,481,472								
LightingOS Only		4			5,378			13		99.86%	99.86%		279,258									
Park Lot Lights		4			28,279			13		99.86%	99.86%		1,468,338									
Process			6			24,469			13	99.86%	99.86%			1,853,439								
New Equipment & Construction Track																						
Cooling		1			1,893			15		99.86%	99.86%		28,355									
Program Summary*				**1,456,172**	**649,432**	**2,564,148**						**18,930,233**	**8,414,943**	**33,333,927**	**0**	**0**	**0**			**0.0**	**0.0**	**0.0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings were updated based on recent trends and reflect expected project sizes.

NHEC Small Business Energy Solutions Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
Retrofit Track																						
Lighting	59	31	71	13,426	14,639	11,898	13	13	13	100%	107%	10,265,710	5,920,596	11,744,762				100%	100%			
Ext. Lighting		8	36		5,710	5,442	13	13	13	100%	103%		605,817	2,587,689				100%	100%			
Refrigeration		2			14,299	40,489		13		100%	100%		371,761					100%	100%			
LightingOS Only		1			499			13		100%			6,487					100%				
New Equipment & Construction Track																						
Cooling		1	12		84	9,022		15	15	100%	100%		1,243	1,606,618				100%	100%			
Lighting		3			14,122	25,455		15		100%	107%		635,490					100%	100%			
Ext. Lighting		1			5,768	24,193		15		100%	103%		84,811					100%	100%			
LightingOS Only		1			5,317			15		100%			79,755					100%				
Program Summary*				**786,163**	**576,304**	**1,209,604**						**10,265,710**	**7,705,961**	**15,939,068**	**0**	**0.0**	**0.0**			**0.0**	**0.0**	**0.0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

NHEC Municipal Program

	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
Measure	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018 Plan**	**2018 Actual**	**2020**	**2018**	**2020**	**2018 Plan**	**2018 Actual**	**2020**
ALL																						
Lighting-LED	14	5	12	10,027	15,256	10,027	13	13	13	100%	107%	1,781,060	991,666	1,674,047				100%	100%			
LightingOS Only		3			4,176			13		100%	100%		162,864					100%	100%			
Park Lot Lights		2			1,033			13		100%	103%		26,845					100%	100%			
Process		1			80,164			13		100%	100%		1,042,132					100%	100%			
Weatherization	7	2	5				13	13	13	100%	100%				47.6	54.9	47.6	100%	100%	4,591	1,427	3,195
Hot Water		1						13		100%	100%					31	0.0	100%			399	
VFDs		2			12,892			13		100%			335,192									
Program Summary*				**137,005**	**196,823**	**128,773**						**1,781,060**	**2,558,699**	**1,674,047**	**353**	**140**	**246**			**4,590.9**	**1,826.4**	**3,195.0**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Used data from past years to develop 2018-2020 plan by measure type.
2. Since this is funded by RGGI, the 2018-2020 Plan includes some Weatherization Projects and as well as incentives for customers replacing heating systems to upgrade to more efficient models.

New Hampshire Electric Cooperative, Inc.
2020 System Benefits Charge ("SBC") Calculation
($ in 000's)

Year	EE Total Budget	RGGI Revenues	FCM Revenues	Carryforward with Interest	SBC Requirement	Forecasted Distribution (MWH)	SBC Rate EE Portion (cents/kWh)	SBC Rate EAP Portion (cents/kWh)	2020 Total SBC Rate (cents/kWh)
Col. A	Col. B	Col. C	Col. D	Col. F	Col. H	Col. I	Col. J	Col. K	Col. M
2020	$ 4,616	$ 204	$ 100	$ 306	$ 4,006	758,708	0.528	0.150	0.678

Col. A: Effective year (January 1, 2018 - December 31, 2018)
Col. B: Budget Projections
Col. C: Budget Projections
Col. D: Budget Projections
Col. F: Budget Projections
Col. H: Col. B - Col. C - Col. D - Col. E + Col. F - Col. G
Col. I: Company Forecast
Col. J: (Col. H / Col. I) x 100
Col. K: EAP Portion of SBC Rate
Col. M: Col. J + Col. K

New Hampshire Electric Cooperative, Inc.
Energy Efficiency Expense & SBC Revenue Reconcilliation
January 1, 2020 to December 31, 2021
($ in 000's)

Line	Description	Carryover 12/31/19	Forecast Jan 2020	Forecast Feb 2020	Forecast Mar 2020	Forecast Apr 2020	Forecast May 2020	Forecast June 2020	Forecast Jul 2020	Forecast Aug 2020	Forecast Sep 2020	Forecast Oct 2020	Forecast Nov 2020	Forecast Dec 2020	2018 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	SBC Revenues	$ 306	429	409	339	334	254	286	320	317	375	285	301	356	4,006
2	RGGI Revenues		17	17	17	17	17	17	17	17	17	17	17	17	204
3	FCM Revenues		8	8	8	8	8	8	8	8	8	8	8	8	100
5	**Total Revenues**		**454**	**435**	**365**	**359**	**279**	**312**	**345**	**342**	**401**	**310**	**327**	**381**	**4,310**
6	Program Expenses		385	385	385	385	385	385	385	385	385	385	385	385	4,616
7	**Total Program Expenses**		**385**	**385**	**385**	**385**	**385**	**385**	**385**	**385**	**385**	**385**	**385**	**385**	**4,616**
8	Current Month Over/(Under) Recovery		70	50	(20)	(26)	(106)	(73)	(39)	(42)	16	(74)	(58)	(4)	
9	Cummulative Over/(Under) Recovery	306	376	426	406	380	275	202	162	120	136	62	4	(0)	
12	Interest @ Prime Rate		0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	
13	**Interest**		**1**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**12**
14	**Monthly Sales (MWh)**		81,264	77,539	64,295	63,205	48,047	54,208	60,617	60,039	71,109	53,970	57,052	67,364	758,708
15	**EE SBC Rate**		0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	0.528	

Line 1: (Line 14 x Line 15) / 100
Line 2: Page 1, Col. C
Line 3: Page 1, Col. D
Line 5: Sum of Lines 1 through Lines 4
Line 6: Page 1, Col. B
Line 7: Sum of Line 6
Line 8: Line 5 - Line 7
Line 9: Prior month Line 9 + Current month Line 9
Line 12: Prime Rate / 12
Line 13: (Prior Month Line 9 + Current Month Line 9) / 2 x Line 12
Line 14: Company Forecast
Line 15: Page 1, Col. J

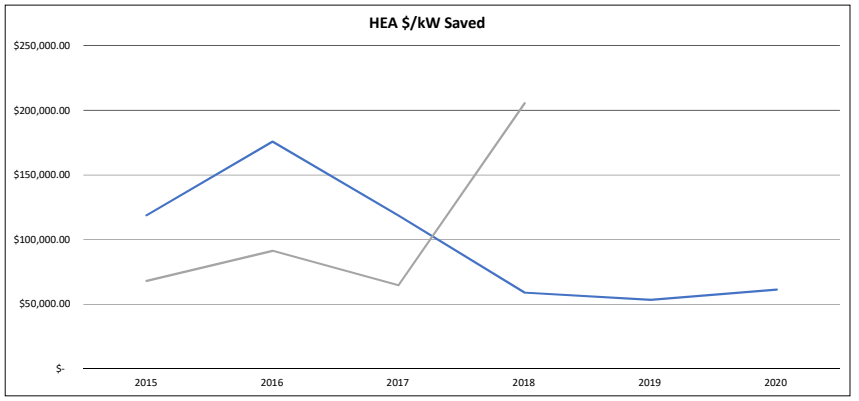
Bill Impacts of Changes in System Benefits Charge - New Hampshire Electric Cooperative, Inc.

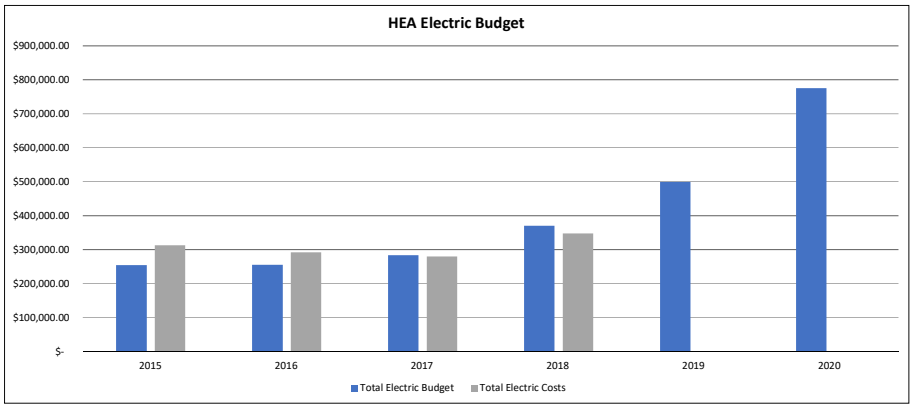
	2019	2020
System Benefits Charge ($/kWh)	$ 0.00523	$ 0.00678
Bill per month, including NHEC default energy service		
Residential Rate Basic (625 kWh/month)	$ 123.36	$ 124.33
Commercial B3, three-phase service (<50 kW, 10,000 kWh/month)	$ 1,750.74	$ 1,766.24
Change from previous rate level - $ per month		
Residential Rate R (625 kWh/month)		$ 0.97
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		$ 15.50
Change from previous rate level - %		
Residential Rate R (625 kWh/month)		0.8%
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		0.9%

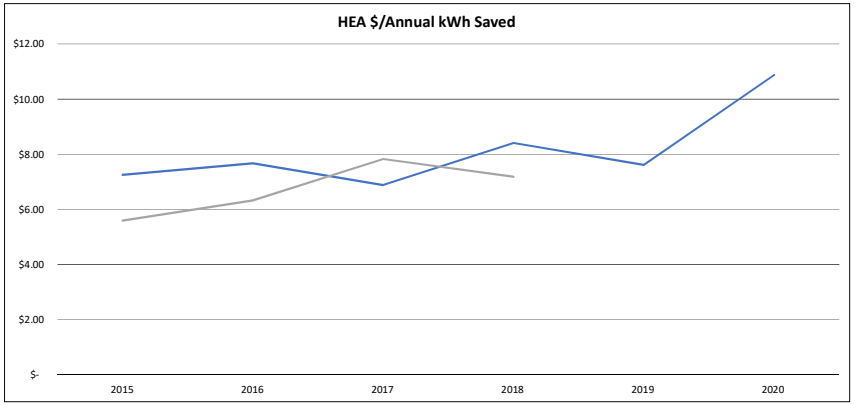
Home Energy Assistance

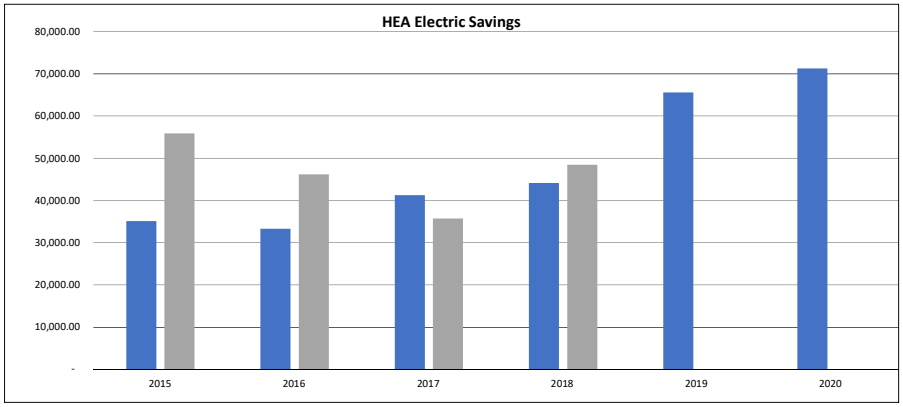
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 254,857.00	$ 255,703.00	$ 284,308.00	$ 371,084.55	$ 499,415.73	$ 775,343.00
	Annual Electric Savings Plan (kWh)	35,100.20	33,320.82	41,277.05	44,118.52	65,569.58	71,262.75
	$/Annual kWh Plan	$ 7.26	$ 7.67	$ 6.89	$ 8.41	$ 7.62	$ 10.88
2)	Total Electric Budget	$ 254,857.00	$ 255,703.00	$ 284,308.00	$ 371,084.55	$ 499,415.73	$ 775,343.00
	Total Summer Peak kW Plan	2.15	1.45	2.39	6.28	9.34	12.64
	$/kW Plan	$ 118,803.99	$ 175,764.94	$ 118,738.52	$ 59,056.07	$ 53,477.66	$ 61,362.69
3)	Total Electric Budget	$ 254,857.00	$ 255,703.00	$ 284,308.00	$ 371,084.55	$ 499,415.73	$ 775,343.00
	Total Annual MMBtu Plan	803.73	732.78	965.66	1,204.43	1,773.71	2,329.89
	$/Annual MMBtu Plan	$ 317.09	$ 348.95	$ 294.42	$ 308.10	$ 281.57	$ 332.78

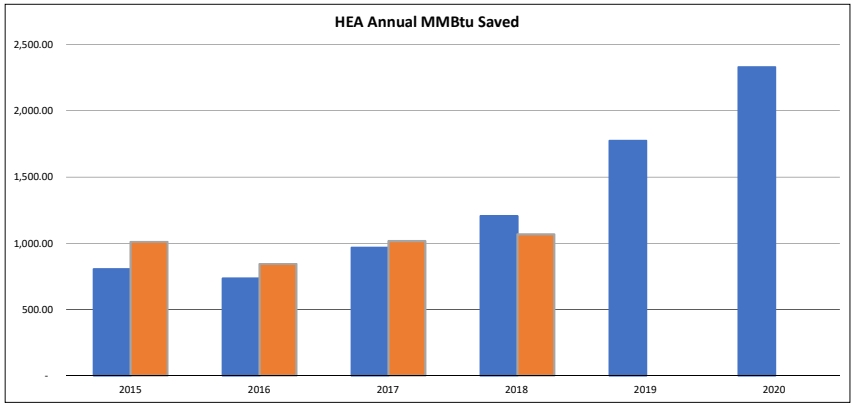
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 313,005.00	$ 292,376.00	$ 280,148.40	$ 348,316.37
	Annual Electric Savings Actual (kWh)	55,900.00	46,200.00	35,764.57	48,480.85
	$/Annual kWh Actual	$ 5.60	$ 6.33	$ 7.83	$ 7.18
2)	Total Electric Costs	$ 313,005.00	$ 292,376.00	$ 280,148.40	$ 348,316.37
	Total Summer Peak kW Actual	4.60	3.20	4.33	1.69
	$/kW Actual	$ 68,044.57	$ 91,367.50	$ 64,654.44	$ 205,508.97
3)	Total Electric Costs	$ 313,005.00	$ 292,376.00	$ 280,148.40	$ 348,316.37
	Total Annual MMBtu Actual	1,010.08	842.90	1,015.69	1,067.33
	$/Annual MMBtu Actual	$ 309.88	$ 346.87	$ 275.82	$ 326.34







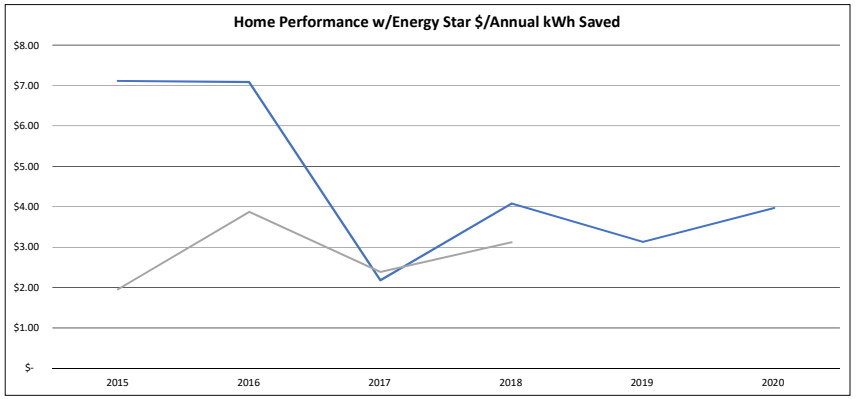


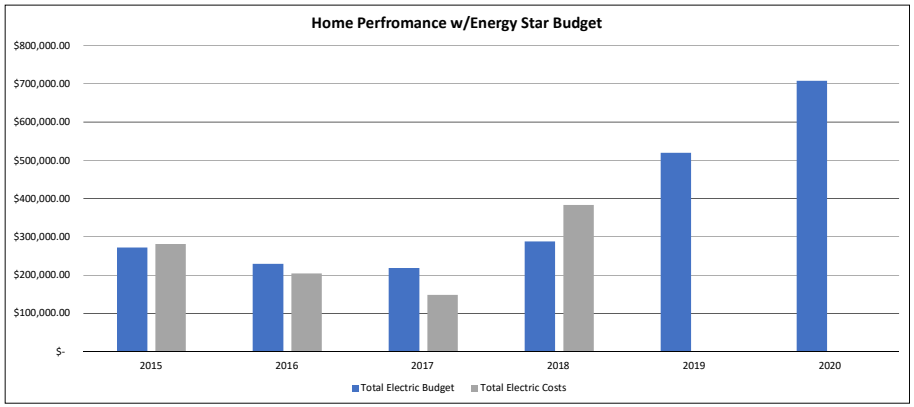


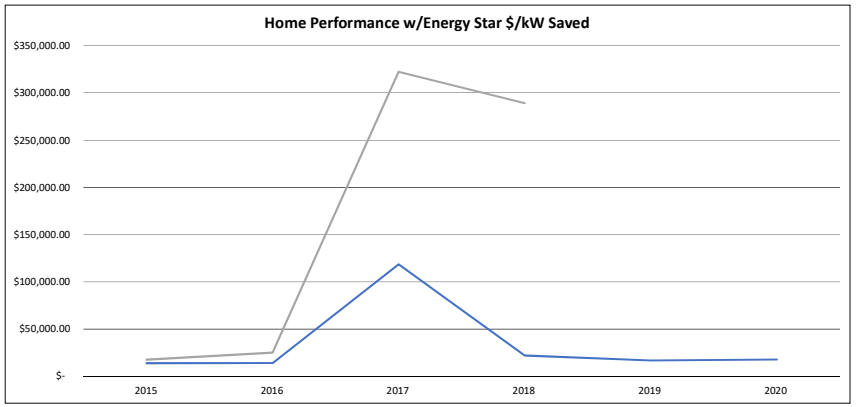
Home Performance w/Energy Star

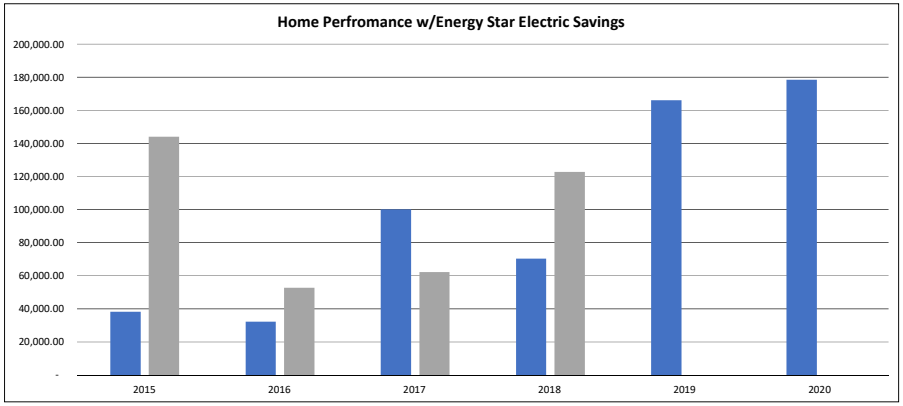
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 272,233.00	$ 229,205.00	$ 218,456.00	$ 287,669.67	$ 519,510.90	$ 708,283.00
	Annual Electric Savings Plan (kWh)	38,271.72	32,355.03	100,197.78	70,460.53	166,032.86	178,487.22
	$/Annual kWh Plan	$ 7.11	$ 7.08	$ 2.18	$ 4.08	$ 3.13	$ 3.97
2)	Total Electric Budget	$ 272,233.00	$ 229,205.00	$ 218,456.00	$ 287,669.67	$ 519,510.90	$ 708,283.00
	Total Summer Peak kW Plan	19.43	16.31	1.84	12.99	30.65	39.67
	$/kW Plan	$ 14,008.04	$ 14,051.07	$ 118,668.66	$ 22,145.49	$ 16,952.03	$ 17,852.66
3)	Total Electric Budget	$ 272,233.00	$ 229,205.00	$ 218,456.00	$ 287,669.67	$ 519,510.90	$ 708,283.00
	Total Annual MMBtu Plan	1,633.55	1,281.68	1,214.38	1,912.43	4,506.44	6,066.04
	$/Annual MMBtu Plan	$ 166.65	$ 178.83	$ 179.89	$ 150.42	$ 115.28	$ 116.76

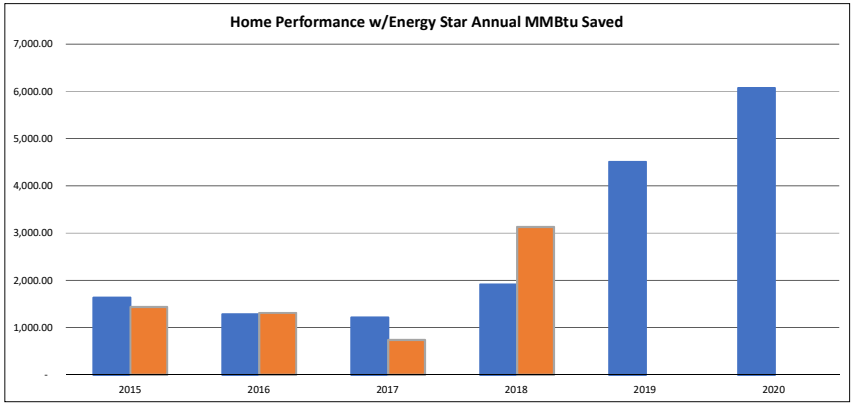
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 281,645.00	$ 204,480.00	$ 148,636.84	$ 383,006.41
	Annual Electric Savings Actual (kWh)	144,000.00	52,805.00	62,273.93	122,706.43
	$/Annual kWh Actual	$ 1.96	$ 3.87	$ 2.39	$ 3.12
2)	Total Electric Costs	$ 281,645.00	$ 204,480.00	$ 148,636.84	$ 383,006.41
	Total Summer Peak kW Actual	15.90	8.10	0.46	1.33
	$/kW Actual	$ 17,713.52	$ 25,244.44	$ 322,270.51	$ 288,998.22
3)	Total Electric Costs	$ 281,645.00	$ 204,480.00	$ 148,636.84	$ 383,006.41
	Total Annual MMBtu Actual	1,437.92	1,310.31	741.02	3,132.17
	$/Annual MMBtu Actual	$ 195.87	$ 156.05	$ 200.58	$ 122.28







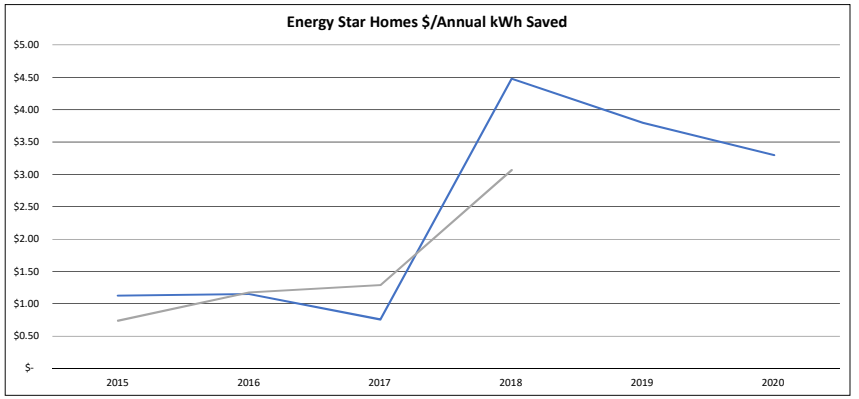


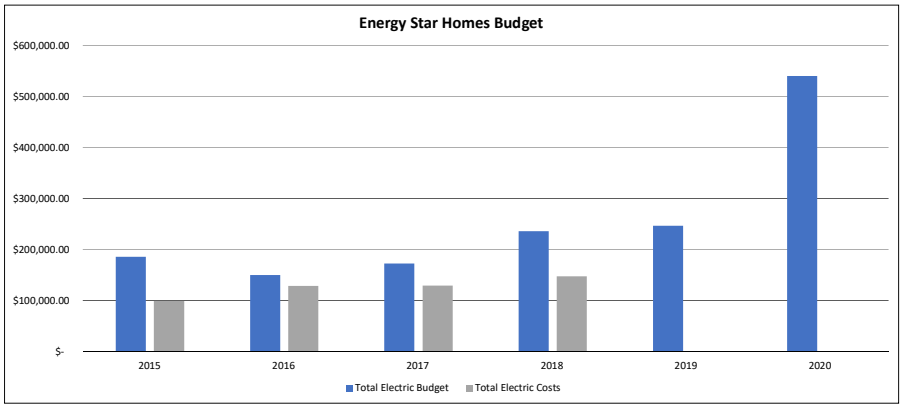


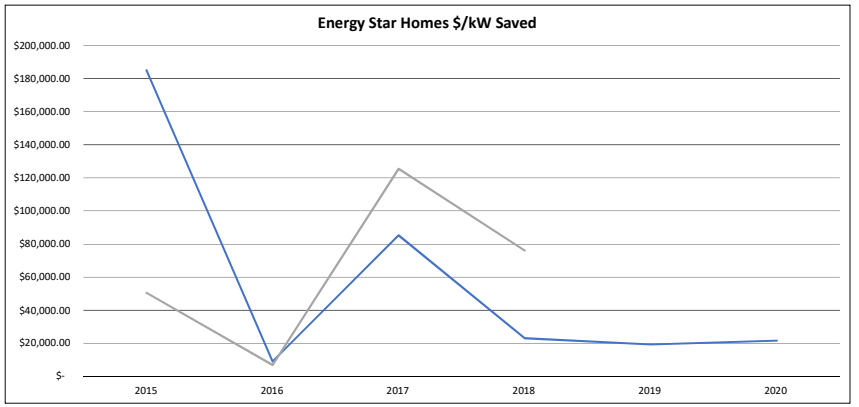
Energy Star Homes

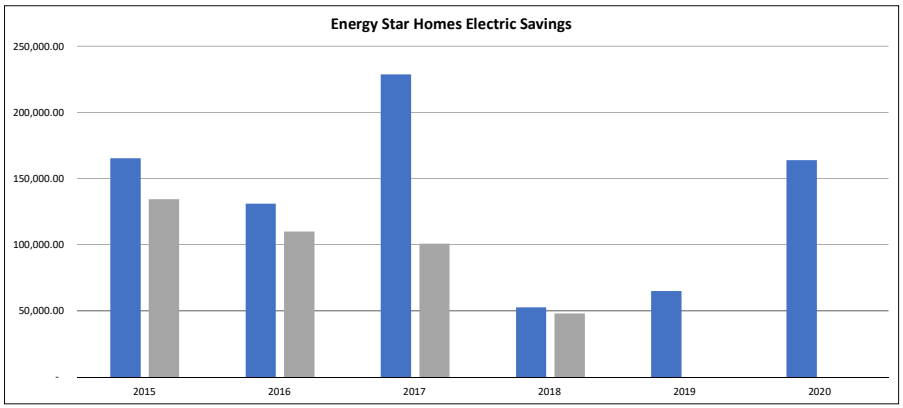
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 186,042.00	$ 150,426.00	$ 172,764.00	$ 235,909.21	$ 246,674.96	$ 540,544.00
	Annual Electric Savings Plan (kWh)	165,241.44	130,931.27	228,636.03	52,681.05	65,009.21	163,862.33
	$/Annual kWh Plan	$ 1.13	$ 1.15	$ 0.76	$ 4.48	$ 3.79	$ 3.30
2)	Total Electric Budget	$ 186,042.00	$ 150,426.00	$ 172,764.00	$ 235,909.21	$ 246,674.96	$ 540,544.00
	Total Summer Peak kW Plan	1.01	16.55	2.03	10.22	12.76	25.02
	$/kW Plan	$ 185,056.05	$ 9,089.54	$ 85,266.64	$ 23,075.53	$ 19,333.56	$ 21,603.62
3)	Total Electric Budget	$ 186,042.00	$ 150,426.00	$ 172,764.00	$ 235,909.21	$ 246,674.96	$ 540,544.00
	Total Annual MMBtu Plan	737.56	587.75	916.77	442.43	559.33	1,490.73
	$/Annual MMBtu Plan	$ 252.24	$ 255.94	$ 188.45	$ 533.21	$ 441.02	$ 362.60

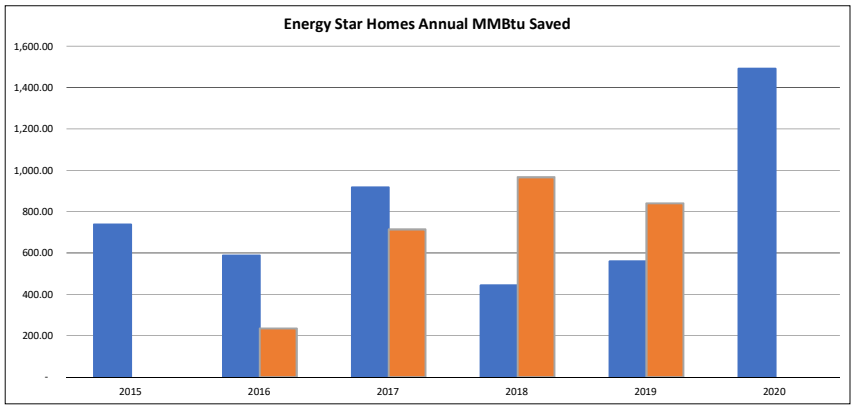
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 99,069.00	$ 129,039.00	$ 129,650.82	$ 147,672.12
	Annual Electric Savings Actual (kWh)	134,300.00	109,900.00	100,710.35	48,129.32
	$/Annual kWh Actual	$ 0.74	$ 1.17	$ 1.29	$ 3.07
2)	Total Electric Costs	$ 99,069.00	$ 129,039.00	$ 129,650.82	$ 147,672.12
	Total Summer Peak kW Actual	1.96	18.80	1.03	1.94
	$/kW Actual	$ 50,501.18	$ 6,863.78	$ 125,444.95	$ 76,096.52
3)	Total Electric Costs	$ 99,069.00	$ 129,039.00	$ 129,650.82	$ 147,672.12
	Total Annual MMBtu Actual	234.69	713.60	966.41	839.99
	$/Annual MMBtu Actual	$ 422.13	$ 180.83	$ 134.16	$ 175.80







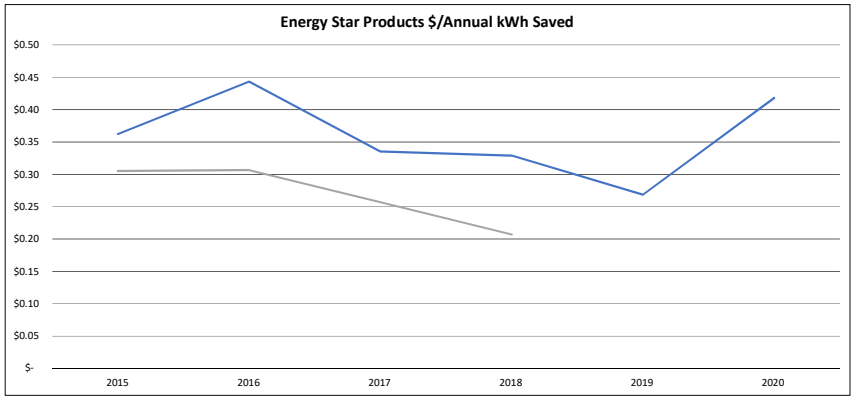


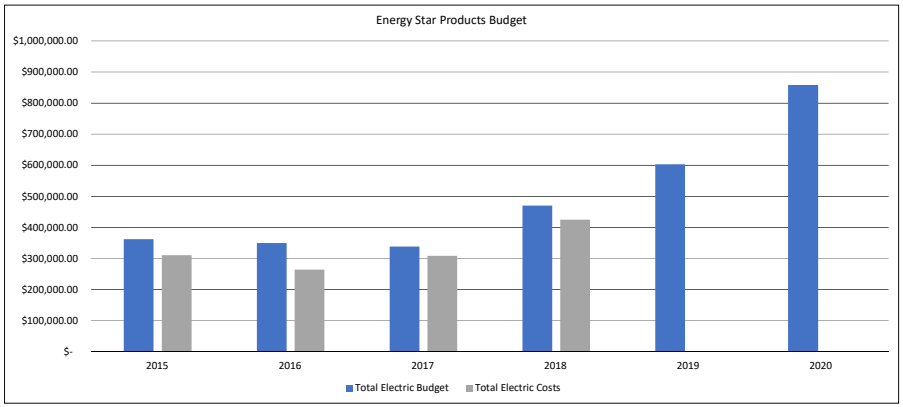


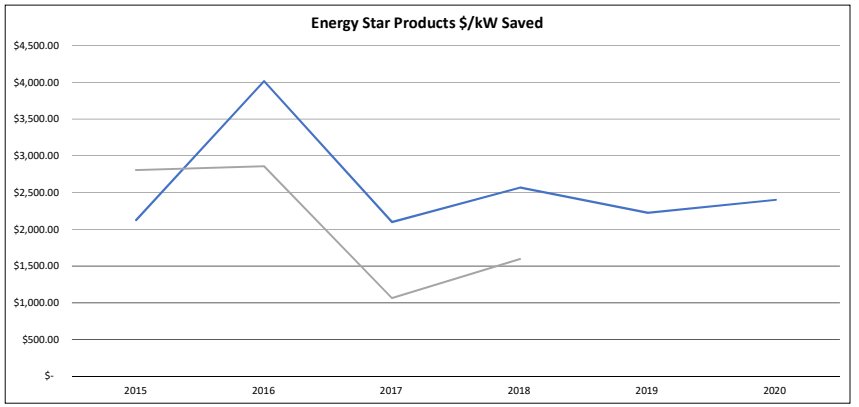
Energy Star Products

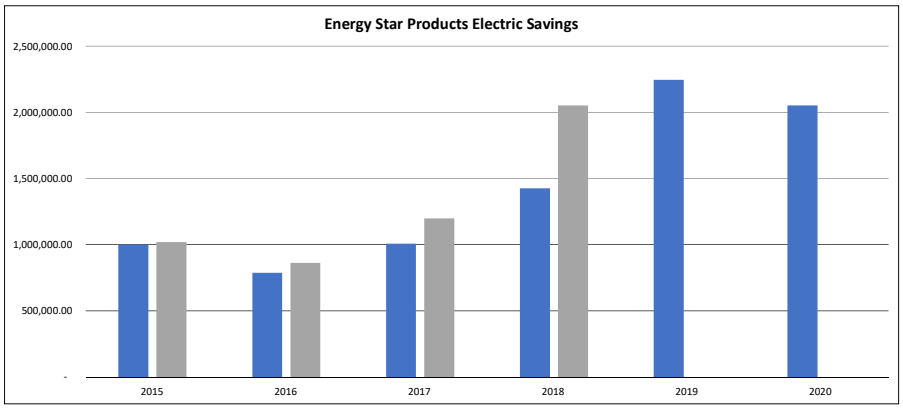
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 362,250.00	$ 349,270.00	$ 338,248.00	$ 469,558.56	$ 602,894.51	$ 858,424.35
	Annual Electric Savings Plan (kWh)	999,269.23	787,893.83	1,008,685.09	1,426,971.51	2,244,494.09	2,052,977.25
	$/Annual kWh Plan	$ 0.36	$ 0.44	$ 0.34	$ 0.33	$ 0.27	$ 0.42
2)	Total Electric Budget	$ 362,250.00	$ 349,270.00	$ 338,248.00	$ 469,558.56	$ 602,894.51	$ 858,424.35
	Total Summer Peak kW Plan	170.49	86.98	161.13	182.83	270.89	357.45
	$/kW Plan	$ 2,124.74	$ 4,015.30	$ 2,099.27	$ 2,568.30	$ 2,225.57	$ 2,401.54
3)	Total Electric Budget	$ 362,250.00	$ 349,270.00	$ 338,248.00	$ 469,558.56	$ 602,894.51	$ 858,424.35
	Total Annual MMBtu Plan	364.14	300.17	50.35	191.64	162.77	424.34
	$/Annual MMBtu Plan	$ 994.82	$ 1,163.59	$ 6,717.37	$ 2,450.24	$ 3,703.93	$ 2,022.95

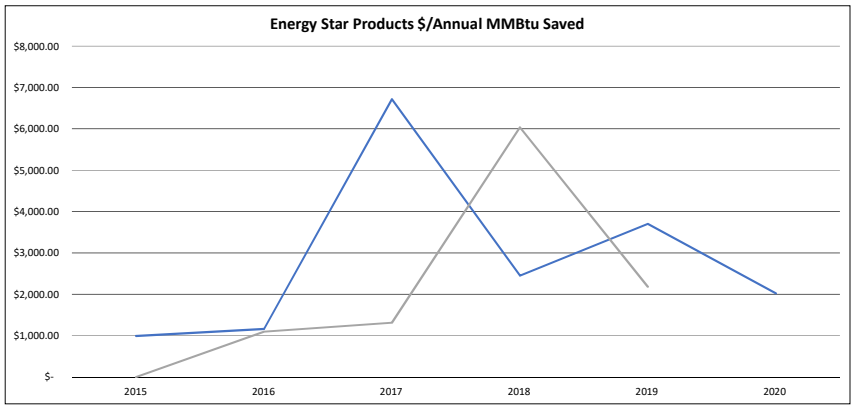
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 310,934.00	$ 264,733.00	$ 308,155.35	$ 425,054.56
	Annual Electric Savings Actual (kWh)	1,018,400.00	863,500.00	1,199,911.22	2,052,977.25
	$/Annual kWh Actual	$ 0.31	$ 0.31	$ 0.26	$ 0.21
2)	Total Electric Costs	$ 310,934.00	$ 264,733.00	$ 308,155.35	$ 425,054.56
	Total Summer Peak kW Actual	110.80	92.60	289.14	265.97
	$/kW Actual	$ 2,806.26	$ 2,858.89	$ 1,065.76	$ 1,598.11
3)	Total Electric Costs	$ 310,934.00	$ 264,733.00	$ 308,155.35	$ 425,054.56
	Total Annual MMBtu Actual	283.50	201.40	51.06	194.68
	$/Annual MMBtu Actual	$ 1,096.77	$ 1,314.46	$ 6,035.52	$ 2,183.39







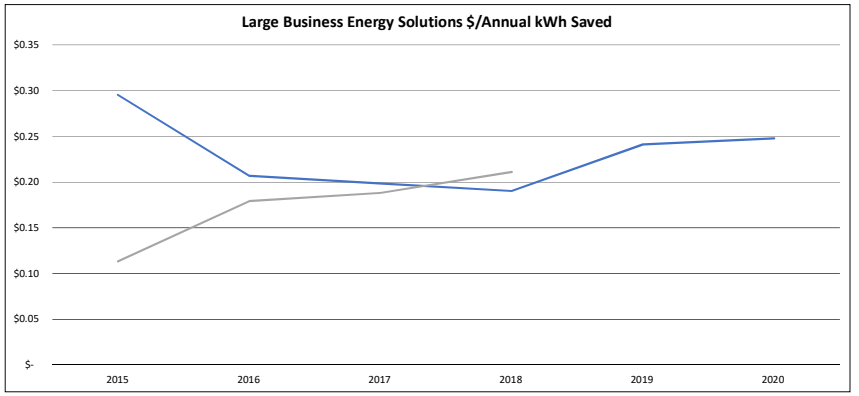


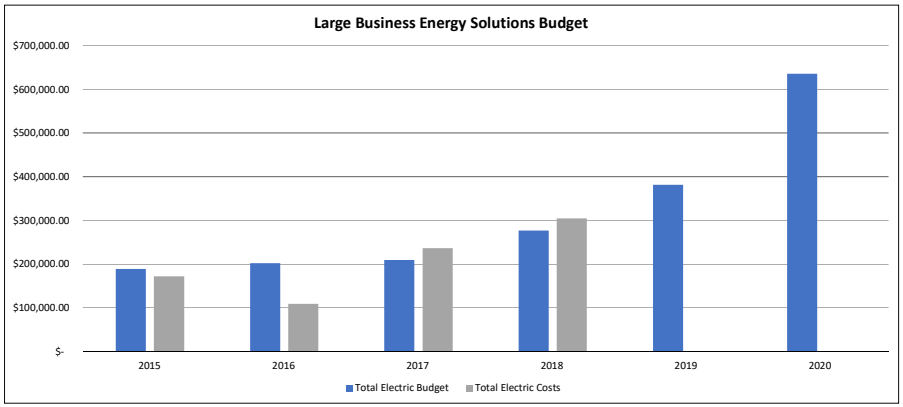


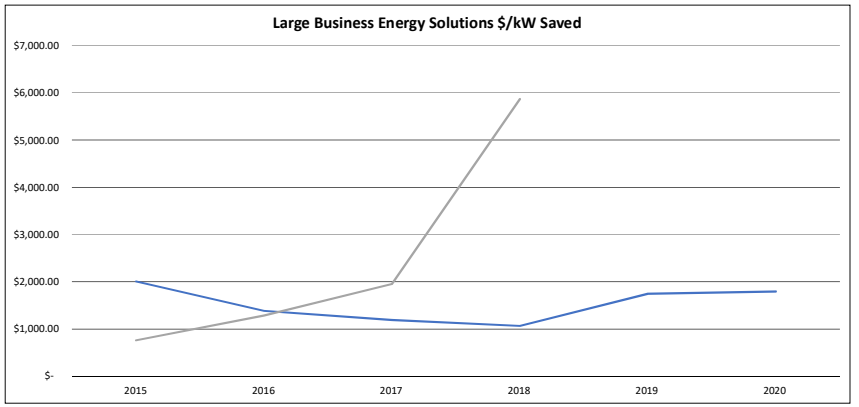
Large Business Energy Solutions

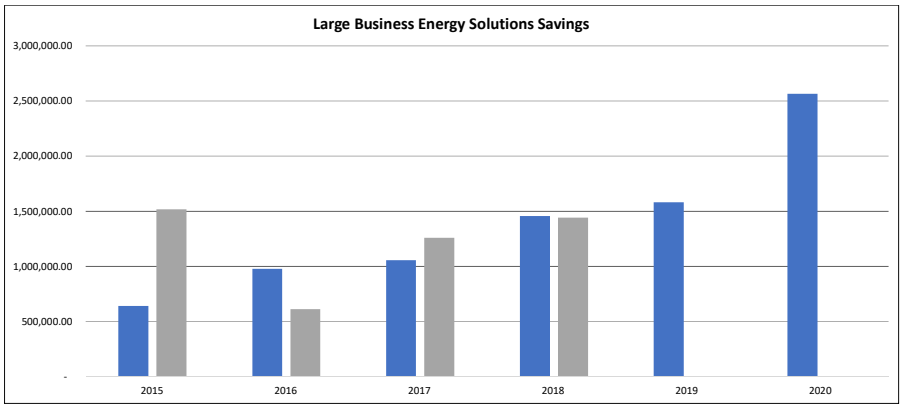
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Total Electric Budget	$ 188,981.00	$ 202,403.00	$ 209,679.00	$ 277,067.46	$ 381,523.59	$ 635,504.00
	Annual Electric Savings Plan (kWh)	639,637.22	978,279.40	1,056,642.38	1,456,171.75	1,581,541.99	2,564,148.19
	$/Annual kWh Plan	$ 0.30	$ 0.21	$ 0.20	$ 0.19	$ 0.24	$ 0.25
2)	Total Electric Budget	$ 188,981.00	$ 202,403.00	$ 209,679.00	$ 277,067.46	$ 381,523.59	$ 635,504.00
	Total Summer Peak kW Plan	94.11	146.13	175.61	259.47	218.04	353.51
	$/kW Plan	$ 2,008.02	$ 1,385.12	$ 1,194.04	$ 1,067.80	$ 1,749.79	$ 1,797.71
3)	Total Electric Budget	$ 188,981.00	$ 202,403.00	$ 209,679.00	$ 277,067.46	$ 381,523.59	$ 635,504.00
	Total Annual MMBtu Plan						
	$/Annual MMBtu Plan						

Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Costs	$ 172,179.00	$ 109,309.00	$ 236,808.93	$ 304,536.17
	Annual Electric Savings Actual (kWh)	1,519,000.00	609,900.00	1,258,258.52	1,442,732.56
	$/Annual kWh Actual	$ 0.11	$ 0.18	$ 0.19	$ 0.21
2)	Total Electric Costs	$ 172,179.00	$ 109,309.00	$ 236,808.93	$ 304,536.17
	Total Summer Peak kW Actual	225.50	84.90	121.28	51.89
	$/kW Actual	$ 763.54	$ 1,287.50	$ 1,952.66	$ 5,868.41
3)	Total Electric Costs	$ 172,179.00	$ 109,309.00	$ 236,808.93	$ 304,536.17
	Total Annual MMBtu Actual				
	$/Annual MMBtu Actual				





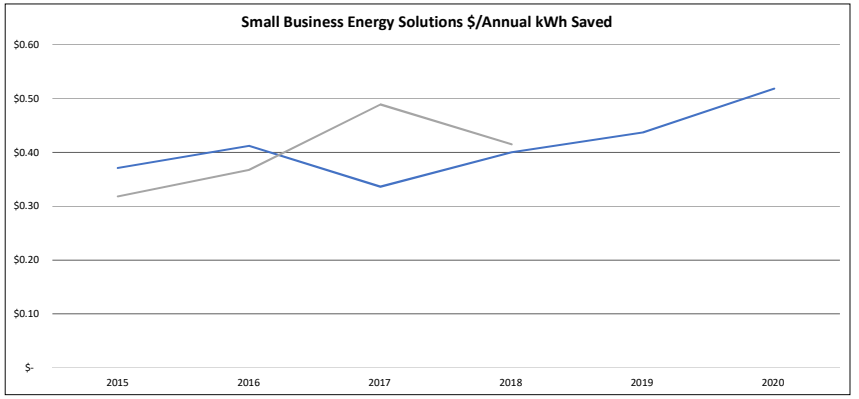


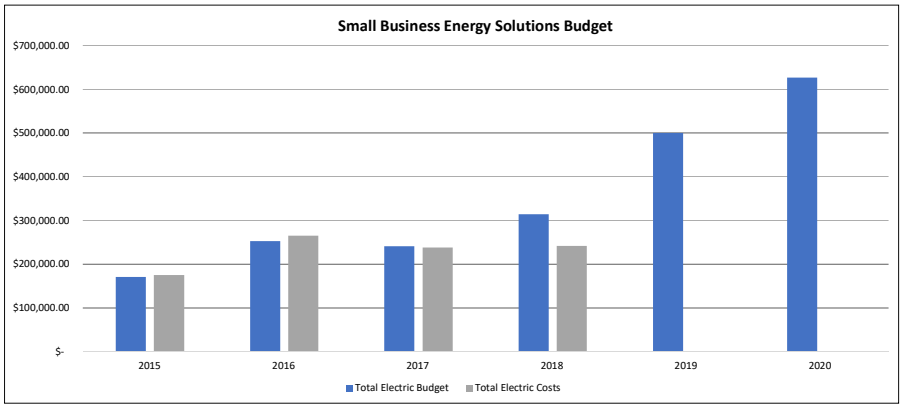


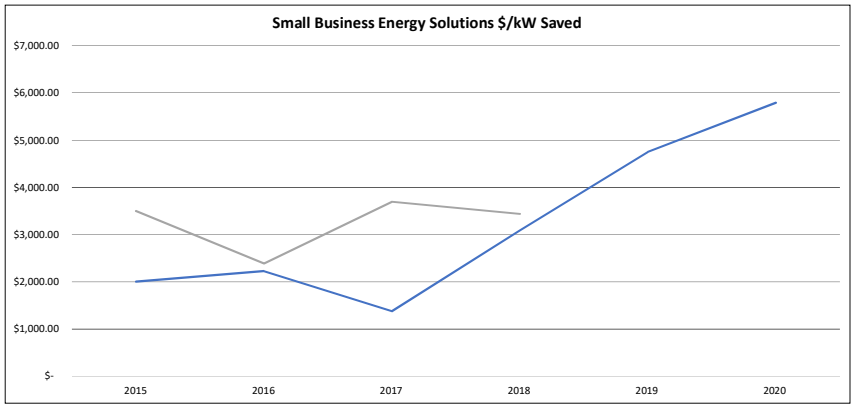
Small Business Energy Solutions

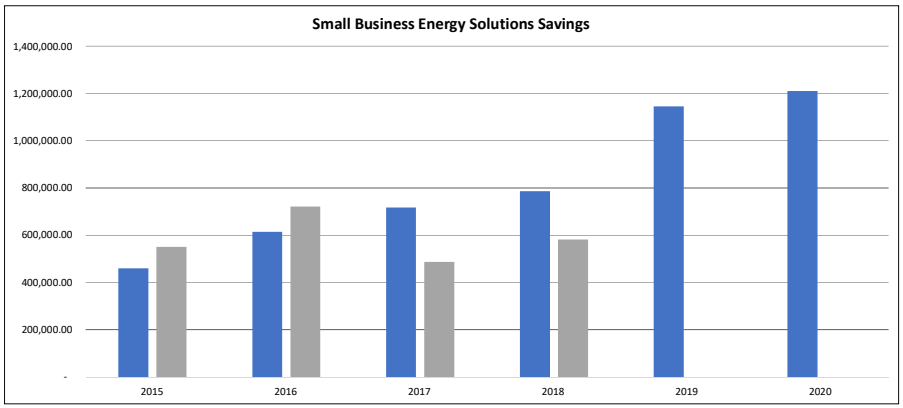
Planned		**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
1)	Total Electric Budget	$ 170,507.00	$ 253,038.00	$ 241,342.00	$ 314,465.22	$ 499,966.58	$ 626,671.90
	Annual Electric Savings Plan (kWh)	459,727.00	614,054.23	718,002.42	786,162.50	1,144,703.92	1,209,604.03
	$/Annual kWh Plan	$ 0.37	$ 0.41	$ 0.34	$ 0.40	$ 0.44	$ 0.52
2)	Total Electric Budget	$ 170,507.00	$ 253,038.00	$ 241,342.00	$ 314,465.22	$ 499,966.58	$ 626,671.90
	Total Summer Peak kW Plan	85.06	113.62	175.08	101.83	105.30	108.23
	$/kW Plan	$ 2,004.49	$ 2,227.11	$ 1,378.49	$ 3,088.21	$ 4,748.00	$ 5,790.19
3)	Total Electric Budget	$ 170,507.00	$ 253,038.00	$ 241,342.00	$ 314,465.22	$ 499,966.58	$ 626,671.90
	Total Annual MMBtu Plan						
	$/Annual MMBtu Plan						

Actuals		**2015**	**2016**	**2017**	**2018**
1)	Total Electric Costs	$ 175,186.00	$ 265,112.00	$ 238,151.99	$ 241,447.38
	Annual Electric Savings Actual (kWh)	550,600.00	721,700.00	487,246.98	582,120.00
	$/Annual kWh Actual	$ 0.32	$ 0.37	$ 0.49	$ 0.41
2)	Total Electric Costs	$ 175,186.00	$ 265,112.00	$ 238,151.99	$ 241,447.38
	Total Summer Peak kW Actual	50.10	111.00	64.46	70.22
	$/kW Actual	$ 3,496.73	$ 2,388.40	$ 3,694.33	$ 3,438.44
3)	Total Electric Costs	$ 175,186.00	$ 265,112.00	$ 238,151.99	$ 241,447.38
	Total Annual MMBtu Actual				
	$/Annual MMBtu Actual				





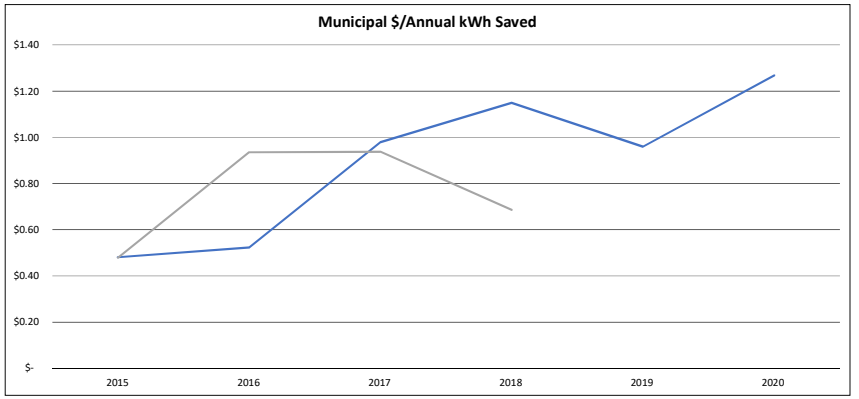


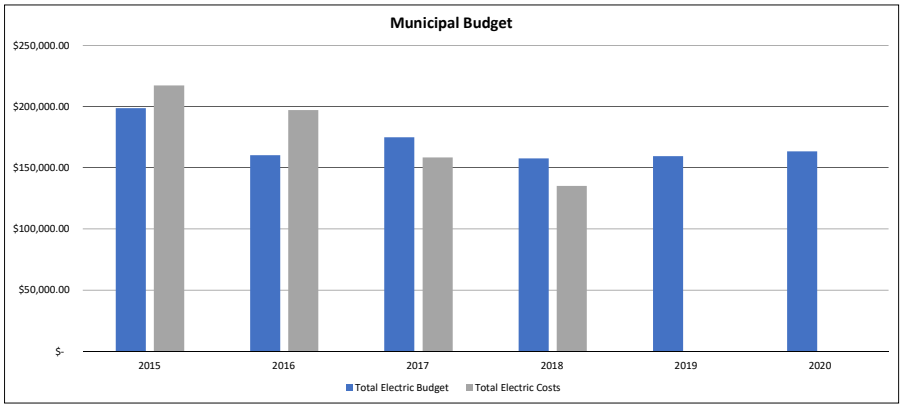


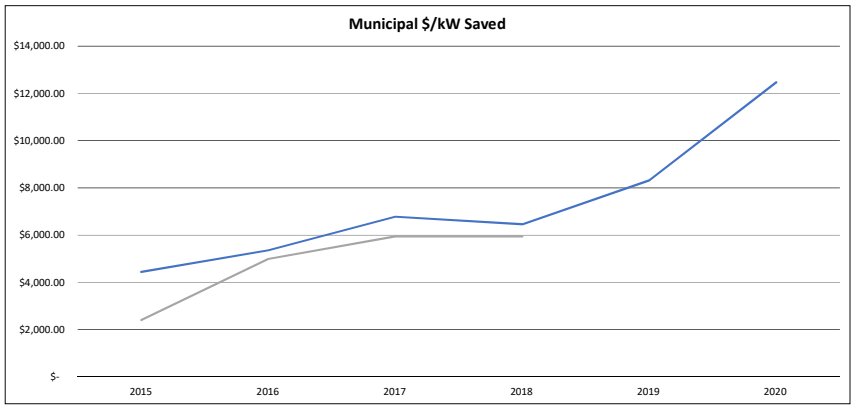
Municipal

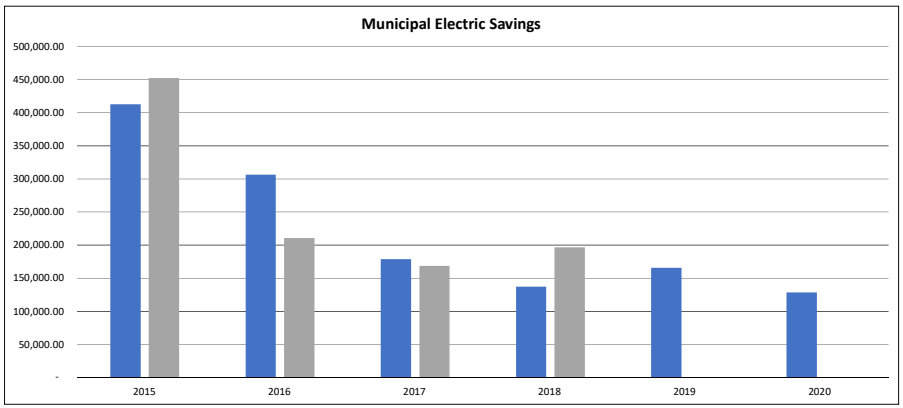
Planned		2015	2016	2017	2018	2019	2020
1)	Total Electric Budget	$ 198,828.00	$ 160,393.00	$ 174,968.00	$ 157,518.81	$ 159,402.78	$ 163,318.00
	Annual Electric Savings Plan (kWh)	413,076.33	306,456.75	178,641.98	137,004.63	166,023.21	128,772.82
	$/Annual kWh Plan	$ 0.48	$ 0.52	$ 0.98	$ 1.15	$ 0.96	$ 1.27
2)	Total Electric Budget	$ 198,828.00	$ 160,393.00	$ 174,968.00	$ 157,518.81	$ 159,402.78	$ 163,318.00
	Total Summer Peak kW Plan	44.77	29.96	25.80	24.38	19.17	13.10
	$/kW Plan	$ 4,441.47	$ 5,353.27	$ 6,781.68	$ 6,461.52	$ 8,315.74	$ 12,467.50
3)	Total Electric Budget	$ 198,828.00	$ 160,393.00	$ 174,968.00	$ 157,518.81	$ 159,402.78	$ 163,318.00
	Total Annual MMBtu Plan	84.60	84.60	280.03	353.15	379.89	245.77
	$/Annual MMBtu Plan	$ 2,350.21	$ 1,895.90	$ 624.81	$ 446.04	$ 419.60	$ 664.51

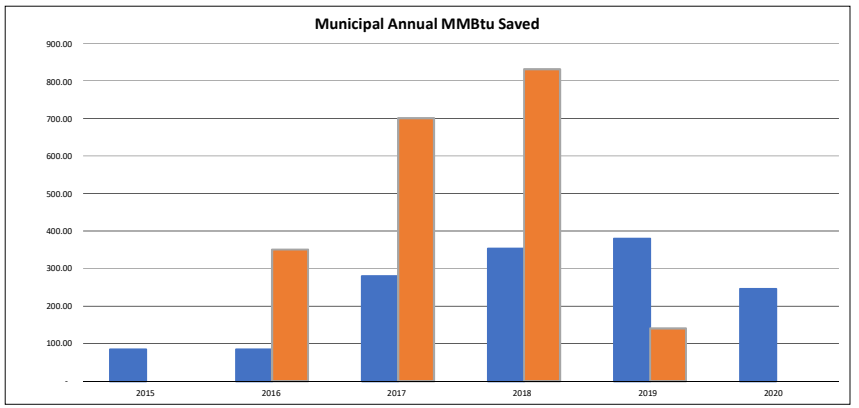
Actuals		2015	2016	2017	2018
1)	Total Electric Costs	$ 217,200.00	$ 197,081.00	$ 158,370.45	$ 135,104.98
	Annual Electric Savings Actual (kWh)	452,700.00	210,600.00	168,841.99	196,823.00
	$/Annual kWh Actual	$ 0.48	$ 0.94	$ 0.94	$ 0.69
2)	Total Electric Costs	$ 217,200.00	$ 197,081.00	$ 158,370.45	$ 135,104.98
	Total Summer Peak kW Actual	90.20	39.50	26.63	22.73
	$/kW Actual	$ 2,407.98	$ 4,989.39	$ 5,946.23	$ 5,944.32
3)	Total Electric Costs	$ 217,200.00	$ 197,081.00	$ 158,370.45	$ 135,104.98
	Total Annual MMBtu Actual	350.53	700.35	830.79	140.51
	$/Annual MMBtu Actual	$ 619.63	$ 281.40	$ 190.63	$ 961.53











Program Cost-Effectiveness - 2020 PLAN

	Total Benefit / Cost Ratio (w/out PI)	Benefit ($000)	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs											
Home Energy Assistance	1.25	$ 1,686.225	$ 1,353.131	$ -	78	1,148	10.2	12.3	122	2,948	59,095
Energy Star Homes	2.68	$ 1,440.772	$ 446.821	$ 92	98	2,033	10.1	23.7	66	1,800	45,000
Home Performance with Energy Star	1.48	$ 1,789.946	$ 801.804	$ 409	93	1,666	11.3	19.0	109	3,209	64,494
Energy Star Products	1.64	$ 2,226.449	$ 1,044.547	$ 317	2,270	16,835	570.2	306.1	35,887	734	10,733
Home Energy Reports	1.03	$ 158.894	$ 153.784	$ -	675	1,851	34.1	11.4	22,700	-	-
ISO-NE Forward Capacity Market Expenses	-	$ -	$ 26.500	$ -	-	-	-	-		-	-
Res Active Demand	-	$ -	$ 122.100	$ -	-	-	-	-	489	-	-
Sub-Total Residential	**1.53**	**$ 7,302**	**$ 3,948.687**	**$ 817**	**3,214**	**23,533**	**635.9**	**372.5**	**59,373**	**8,691**	**179,322**
Commercial, Industrial & Municipal											
Large Business Energy Solutions	2.23	$ 7,218	$ 1,632.099	1,605.916	6,051	77,989	886.3	725.5	248	-	-
Small Business Energy Solutions	1.77	$ 4,641	$ 1,570.430	1,049.158	4,224	54,646	277.2	356.8	259	-	-
Municipal Energy Solutions	1.51	$ 512	$ 265.230	74.000	459	6,813	17.1	19.0	27	50	1,000
Education	-	$ -	$ 74.785	$ -	-	-	-	-		-	-
ISO Forward Capacity Market Expenses	-	$ -	$ 25.000	$ -	-	-	-	-		-	-
C&I Active Demand	-	$ -	$ 227.343	$ -	-	-	-	-	9	-	-
Sub-Total Commercial & Industrial	**1.90**	**$ 12,372**	**$ 3,794.887**	**$ 2,729**	**10,735**	**139,448**	**1,180.5**	**1,101.3**	**542**	**50**	**1,000**
Total	**1.74**	**$ 19,674**	**$ 7,743.573**	**$ 3,546**	**13,949**	**162,981**	**1,816.4**	**1,473.9**	**59,915**	**8,741**	**180,322**

Note: a 10% NEI adder (20% for Home Energy Assistance) is applied to total benefits excluding water.

Annual kWh Savings	13,948,952.914	84%	**kWh > 55%**	Lifetime kWh Savings	162,980,910	75.5%	**kWh > 55%**
Annual MMBTU Savings (in kWh)	2,561,820.364	16%		Lifetime MMBTU Savings (in kWh)	52,847,156	24.5%	
	16,510,773.278	100%			**215,828,066**	100.0%	

Present Value Benefits - 2020 PLAN

	Total Benefits ($000)	Resource Benefits ($000)														Non-Resource Benefits ($000)		
		Electric											Non-Electric					
		CAPACITY				ENERGY				DRIPE	Total Electric Benefit		Other Fuels	Water Benefit	Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefit	Total Non Resource Benefits
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE								
Residential Programs																		
Home Energy Assistance	$ 1,686	$ 14	$ -	$ 15	$ 13	$ 21	$ 24	$ 8	$ 9	$ 4	$ 108	$ 1,239	$ -	$ 1,346	$ 71	$ 269	$ 340
Energy Star Homes	$ 1,441	$ 32	$ -	$ 34	$ 29	$ 31	$ 42	$ 13	$ 17	$ 5	$ 203	$ 1,059	$ -	$ 1,262	$ 53	$ 126	$ 179
Home Performance with Energy Star	$ 1,790	$ 24	$ -	$ 25	$ 22	$ 28	$ 35	$ 11	$ 13	$ 5	$ 162	$ 1,396	$ -	$ 1,558	$ 76	$ 156	$ 232
Energy Star Products	$ 2,226	$ 159	$ -	$ 208	$ 181	$ 405	$ 279	$ 185	$ 123	$ 95	$ 1,635	$ 178	$ 221	$ 2,034	$ 11	$ 181	$ 193
Home Energy Reports	$ 159	$ 2	$ -	$ 3	$ 3	$ 58	$ 30	$ 23	$ 11	$ 15	$ 144	$ -	$ -	$ 144	$ -	$ 14	$ 14
Res Active Demand	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sub-Total Residential	**$ 7,302**	**$ 231**	**$ -**	**$ 286**	**$ 248**	**$ 543**	**$ 409**	**$ 240**	**$ 173**	**$ 122**	**$ 2,252**	**$ 3,871**	**$ 221**	**$ 6,344**	**$ 211**	**$ 747**	**$ 958**
Commercial, Industrial & Municipal																	
Large Business Energy Solutions	$ 7,218	$ 613	$ -	$ 719	$ 624	$ 1,500	$ 1,535	$ 665	$ 610	$ 296	$ 6,562	$ -	$ -	$ 6,562	$ -	$ 656	$ 656
Small Business Energy Solutions	$ 4,641	$ 309	$ -	$ 361	$ 313	$ 1,171	$ 977	$ 489	$ 399	$ 201	$ 4,219	$ -	$ -	$ 4,219	$ -	$ 422	$ 422
Municipal Energy Solutions	$ 512	$ 18	$ -	$ 21	$ 18	$ 140	$ 135	$ 48	$ 47	$ 22	$ 449	$ 15	$ -	$ 464	$ 1	$ 46	$ 48
C&I Active Demand	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sub-Total Commercial & Industrial	**$ 12,372**	**$ 940**	**$ -**	**$ 1,100**	**$ 955**	**$ 2,812**	**$ 2,648**	**$ 1,202**	**$ 1,055**	**$ 519**	**$ 11,231**	**$ 15**	**$ -**	**$ 11,246**	**$ 1**	**$ 1,125**	**$ 1,126**
Total	**$ 19,674**	**$ 1,170**	**$ -**	**$ 1,386**	**$ 1,203**	**$ 3,355**	**$ 3,057**	**$ 1,442**	**$ 1,228**	**$ 642**	**$ 13,483**	**$ 3,886**	**$ 221**	**$ 17,590**	**$ 213**	**$ 1,871**	**$ 2,084**

Performance Incentive - 2020 PLAN Update

Portfolio Planned Versus Actual Performance - 2020

	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime kWh Savings	162,980,910	*122,235,683*		0%	1.925%	0.000%	$ 149,064	$ 186,330	$ -	Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	13,948,953	*10,461,715*		0%	0.550%	0.000%	$ 42,590	$ 53,237	$ -	Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	1,473.8843	*958.0248*		0%	0.660%	0.000%	$ 51,108	$ 63,884	$ -	Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	1,816.3583	*1,180.6329*		0%	0.440%	0.000%	$ 34,072	$ 42,590	$ -	Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$ 17,589,721			0%						Planned and Actual from Cost Eff Tab
6	Total Utility Costs (w/out PI)	$ 7,743,573			0%						Planned and Actual from Cost Eff Tab
7	Net Benefits	$ 9,846,147	*$ 7,384,611*	$ -	0%	1.925%	0.000%	$ 149,064	$ 186,330	$ -	Line 5 minus line 6
8	Total					5.500%	0.000%	$ 425,897	$ 532,371	$ -	

		Total Resource Cost Test Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 19,673,866		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 425,897	$ -	from row 8 above
11	Participant Costs	$ 3,546,485		Planned and Actual from Cost Eff Tab
12	Total Utility Costs (w/out PI)	$ 7,743,573	$ -	from row 6 above
13	**Portfolio TRC BCR**	**1.68**		row 9 divided by rows 10+11+12

All dollar values are expressed in 2020 dollars

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Home Energy Assistance Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Oil-Wxn: Air Sealing, Insulation	30	14	43	400	471	100	20	22	20	87%	87%	208,560	123,834	74,734	28.00	32.11	28.00	98%	98%	16,481	9,526	23,622
Propane-Wxn: Air Sealing, Insulation	45	49	58	400	36	100	20	22	20	87%	87%	312,840	33,323	100,804	25.00	12.90	20.00	98%	98%	22,073	13,522	22,759
Kerosene-Wxn: Air Sealing, Insulation, Water measures	7	13	18	300	683	100	20	23	20	87%	87%	36,498	174,339	31,284	20.00	23.31	20.00	98%	98%	2,747	6,718	7,063
Electric-Wxn: Air Sealing, Insulation, Water measures	1	3	3	20,000	625	10,000	20	22	20	87%	87%	347,600	35,539	521,400	-	9.57	-	98%	98%	-	614	-
LED bulb	496	520	732	50	30	25	5	5	5	87%	87%	107,756	68,704	79,514	-	-	-	98%	98%	-	-	-
Refrigerator	12	72	35	714	509	714	12	12	12	87%	87%	89,347	381,998	260,596	-	-	-	98%	98%	-	-	-
Aerators		109			28			7		87%	87%	-	18,626	-		0.33		98%		-	248	-
Heating System Tune up		32			7			1		87%	87%	-	189	-		2.72		98%		-	86	-
Windows and Doors		5			82			15		87%	87%	-	5,370	-		2.30		98%		-	169	-
Oil Boiler Replacement, >=87% AFUE		2	2		142	142		25	25	87%	87%	-	6,170	6,170		13.17	13.00	100%	100%	-	658	650
Propane Boiler Replacement, >=95% AFUE	4			142			25			87%	87%	12,340	-	-	16.69			100%		1,669	-	-
Oil Furnace Replacement, >=87% ECM	3			168			20			87%	87%	8,760	-	-	16.64			100%		998	-	-
Propane Furnace Replacement, >=95% ECM	5	1		168	168		20	25		87%	87%	14,599	3,650	-	16.73	8.74		100%		1,673	219	-
Kerosene Furnace Replacement, >=87% ECM	3	1		168	168		20	25		87%	87%	8,760	3,650	-	9.43	9.08		100%		566	227	-
Furnace Replacement, User Defined			25			169			20	87%	87%	-	-	73,431			10.00		100%	-	-	5,000
All Fuels- Thermostat		10			94			15		87%	87%	-	12,305			3.35		98%		-	493	
Air Source Heat Pumps		15			6,312			18		87%	87%	-	1,480,938	-		-		100%		-	-	-
Program Summary*												**1,147,059**	**2,348,635**	**1,147,932**						**46,206**	**32,480**	**59,095**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

ENERGY STAR® Homes

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
SF-Propane Heated Home	21		60	600		800	25		25	100%	100%	315,000	-	1,200,000	30.00		30.00		100%	-	-	45,000
SF-Electric Heated Home	4		6	7,500		8,000	17		17	100%	100%	510,000	-	816,000	-		-		100%	-	-	-
LED bulb	200	162	264	20	20	6	5	5	5	100%	100%	20,272	16,419	7,656	-	-	-	100%	100%	-	-	-
LED Fixture		67			20			8		100%		-	10,865			-		100%		-	-	
Air Source Heating (including DHPs)		44			2,147			17		100%		-	1,605,840			-		100%		-	-	
Air Source Heat Pump Cooling (including DHPs)		44			55			17		100%		-	40,835			-		100%		-	-	
Clothes Washer	9			162			14					20,362	-	-	0.27					-	-	-
Refrigerator	15	47	20	41	41	41	12	12	12	100%	100%	7,380	23,124	9,840	-	-	-	100%	100%	-	-	-
ES Homes Quality Assurance			4						1		100%	-	-	-			-		100%	-	-	-
MF-Propane Heated Home (Avesta)		24			27			25		100%		-	16,325			14.60		100%		-	8,760	
Lighting and Appliances		2			131			15		100%		-	3,930	-		-		100%		-	-	-
SF-Propane/Natural Gas Heated Home		9			330			25		100%		-	74,150	-		31.66		100%		-	7,123	-
Water Heating (SF and MF)		77						12		100%		-	-	-		3.35		100%		-	3,098	-
Air Conditioning (non-heat pump)	3	1			3		1	25		100%		-	75	-	-	-		100%		-	-	-
Program Summary*			**354**									**873,014**	**1,791,562**	**2,033,496**						**-**	**18,981**	**45,000**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Home Performance with ENERGY STAR®

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Oil-Wxn: Air Sealing, Insulation, Water measures	31	33	50	400	10	400	20	22	20	100%	99%	248,000	7,139	396,000	30.00	31.68	30.00	100%	99%	18,600	22,688	29,700
Propane-Wxn: Air Sealing, Insulation, Water measures	44	11	56	400	333	400	20	21	20	100%	99%	352,000	76,646	443,520	30.00	30.91	30.00	100%	99%	26,400	7,115	33,264
Gas-Wxn: Air Sealing, Insulation, Water measures		3			603			20		100%		-	36,160	-		28.67		100%		-	1,720	-
Electric-Wxn: Air Sealing, Insulation, Water measures	1	21	3	5,000	2,414	5,000	20	20	20	100%	99%	100,000	1,000,940	297,000	-	-	-	100%	99%	-	-	-
Ancillary Savings heating	76	58	106	45	50	45	25	25	20	100%	99%	85,500	73,125	94,446	-	-	-	100%	99%	-	-	-
Ancillary Savings cooling	38	46	53	65	69	65	25	25	20	100%	99%	61,750	79,550	68,211	-	-	-	100%	99%	-	-	-
Base load SF Lighting			50			12			5		100%	-	-	2,900			-		100%	-	-	-
Base load SF Fridge			4			804			12		100%	-	-	38,592			-		100%	-	-	-
LED bulb	451	365	424	30	30	12	5	5	5	100%	100%	68,570	55,495	24,592	-	-	-	100%	100%	-	-	-
Refrigerator	7		8	804		804	12		12	100%	100%	67,536	-	77,184	-		-		100%	-	-	-
DHW: Heat Pump Water Heater	4		3	1,384		1,384	13		13	100%	99%	71,968	-	53,436	-		-		99%	-	-	-
Aerator		1						7		100%		-	-	-		1.48		100%		-	10	-
Pipe Wrap		2			133			7		87%		-	1,614	-		-		100%		-	-	-
Oil Boiler Replacement, >=87% AFUE		1			142			20		100%		-	2,840			7.30		100%		-	146	
Propane Boiler Replacement, >=95% AFUE	2		6	142		100	25		25	100%	100%	7,100	-	15,000	10.20		10.20		100%	510	-	1,530
All Fuels- Thermostat		4						15		100%		-	-			1.55		100%		-	93	
Mini Split HP (assumed 2 ton) (cooling) - Mini Split Baseline			15			137			18		100%	-	-	37,054			-		100%	-	-	-
Mini Split HP (assumed 2 ton) (heating) - Mini Split Baseline			15			438			18		100%	-	-	118,189			-		100%	-	-	-
Program Summary*												**1,062,424**	**1,333,509**	**1,666,124**						**45,510**	**31,773**	**64,494**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

ENERGY STAR® Products Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
LED Bulbs and Fixtures	75,000		120,000	20		12	5		5	89%	100%	6,765,813	-	6,960,000								
LED All other		94,795	10,000		20	12		5	5	100%	100%	-	8,551,537	580,000								
Mini Split HP (assumed 2 ton) (cooling) - Mini Split Baseline	70	110	150	103	77	137	18	18	18	100%	100%	129,690	151,866	370,542	-	-	-	100%	100%	-	-	-
Mini Split HP (heating) HSPF 10 SEER 18	70	110	150	328	326	438	18	18	18	100%	100%	413,660	644,616	1,181,886	-	-	-	100%	100%	-	-	-
Air Source Heat Pump (cooling)		1			342			18		100%		-	6,164			-		100%		-	-	
Air Source Heat Pump (heating)		1			1,158			18		100%		-	20,841			-		100%		-	-	
DHW Heat Pump Water Heater 50 gal	40	8	62	1,384	1,384	1,384	13	13	13	100%	100%	719,680	143,936	1,115,504	-	-	-	100%	100%	-	-	-
DHW Heat Pump Water Heater 80 gal	5	6	13	1,640	1,640	1,640	13	13	13	100%	100%	106,600	127,920	277,160	-	-	-	100%	100%	-	-	-
Wifi Thermostat (Heating & Cooling)	35	17	70	25	25	25	15	15	15	100%	100%	13,049	6,338	26,099	6.60	6.60	6.60	100%	100%	3,465	1,683	6,930
ECM Motors for FHA Furnace Fans			15			168			18		100%	-	-	45,360			-		100%	-	-	-
ECM Motor for FWH Circulating Pump			18			142			15		100%	-	-	38,340			-		100%	-	-	-
ES AC (central) 3 ton	15	4	22	200	242	200	12	14	14	100%	100%	35,983	13,566	61,570	-	-	-	100%	100%	-	-	-
ES Pool Pumps (2 speed)	11		25	842		842	10		10	100%	100%	92,620	-	210,500	-		-		100%	-	-	-
ES Pool Pumps (Variable Speed)	17	52	75	1,062	1,062	1,062	10	10	10	100%	100%	180,540	552,240	796,500	-	-	-	100%	100%	-	-	-
ES Clothes Dryers	60	360	400	93	93	93	12	12	12	100%	100%	67,176	403,056	447,840	-	-	-	100%	100%	-	-	-
ES Clothes Washers	400	458	600	89	89	89	14	14	14	100%	100%	496,552	568,552	744,828	0.27	0.27	0.27	100%	100%	1,506	1,725	2,260
ES Room AC (room)	520	185	200	16	16	16	9	9	9	100%	100%	75,629	26,906	29,088	-	-	-	100%	100%	-	-	-
ES Room Air Purifier	45	99	110	391	391	391	9	9	9	50%	100%	79,076	173,968	386,595	-	-	-	100%	100%	-	-	-
ES Dehumidifier	80	395	400	214	214	214	12	12	12	100%	100%	205,440	1,014,360	1,027,200	-	-	-	100%	100%	-	-	-
ES Refrigerator	500	360	400	64	64	64	12	12	12	100%	100%	385,740	277,733	308,592	-	-	-	100%	100%	-	-	-
ES Freezers	27		35	53		53	16		16	100%	100%	22,680	-	29,400	-		-		100%	-	-	-
Primary Refrigerator Recycling/Pickup/Turnin	25		100	492		492	8		8	100%	100%	98,320	-	393,280	-		-		100%	-	-	-
2nd Refrigerator Pickup/Turnin	20	117	35	755	755	755	8	8	8	100%	100%	120,800	706,680	211,400	-	-	-	100%	100%	-	-	-
2nd Freezer Pickup/Turnin	12		20	658		658	8		8		100%	63,168	-	105,280	-		-		100%	-	-	-
Room AC Pickup/Turnin	44		20	16		16	5		5	100%	100%	3,532	-	1,620	-		-		100%	-	-	-
Refrigerator CEE Tier 2+			160			96			12		100%	-	-	185,088			-		100%	-	-	-
Washer Tier CEE Tier 2+			250			156			14		100%	-	-	545,650			0.44		100%	-	-	1,544
Dryer Hybrid			120			229			12		100%	-	-	330,336			-		100%	-	-	-
Dryer Heat Pump			75			472			12		100%	-	-	425,070			-		100%	-	-	-
Freezer Recycle		17			658			8		100%		-	89,488	-		-		100%		-	-	-
Refrigerator CEE Tier 2+	50	64		96	96		12	12		100%		57,840	74,035	-	-	-		100%		-	-	-
Washer Tier CEE Tier 2+	80	187		156	156		14	14		100%		174,608	408,146	-	0.44	0.44		100%		494	1,155	-
Dryer Hybrid	50			229			12			100%		137,640	-	-	-					-	-	-
ES AC (central) 3 ton	19			200			14			100%		53,174	-	-	-					-	-	-
Dryer Heat Pump	15			472			12			100%		85,014	-	-	-					-	-	-
Program Summary*												**10,584,024**	**13,961,949**	**16,834,728**						**5,465**	**4,562**	**10,733**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Home Energy Reports Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Behavioral Savings	30,000	24,336	22,700	41	16	30	3	1	3	100%	100%	3,231,634	385,562	1,851,000
Behavioral Savings												-	-	-
Behavioral Savings												-	-	-
Behavioral Savings												-	-	-
Program Summary*												**3,231,634**	**385,562**	**1,851,000**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Large Business Energy Solutions Programs

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Retrofit Track												-	-	-
Lighting-Custom	4			75,000			13			100%		3,894,449	-	-
Lighting - LED			20			45,714			13		100%	-	-	11,885,714
Lighting-LED	8	6		125,000	163,034		13	13		100%		12,981,496	12,698,526	-
Lighting OS Only												-	-	
Park Lot Lights	6	9	7	50,000	28,308	97,577	13	13	13	100%	100%	3,894,449	3,307,322	8,879,464
Lighting Controls		5			31,380			9		100%		-	1,410,090	-
LED Lighting Fixtures		6	10		96,120	178,477		13	13	100%	100%	-	7,486,689	23,202,010
Custom: Other	3			202,778			13			100%		7,897,077	-	
Custom Chiller Plant		1			90,544			18		100%		-	1,627,472	
New Equipment & Construction Track														
Lighting - LED			8			58,594			15		100%	-	-	7,031,250
Compressed Air		1			48,082			15		100%		-	720,203	
Lighting-Custom	4			119,048			15			100%		7,132,690	-	
Lighting-LED	8			71,429			15			100%		8,559,228	-	
Custom Process		1			92,923			15		100%		-	1,391,861	
Variable Frequency Drives		3			339,937			15		100%		-	15,275,377	
Custom New Construction		1			940,714			13		100%		-	12,211,875	
ALL														
Street Lights			1			758,558			13		100%	-	-	9,861,254
HVAC Upstream - Unitary Air Conditioners			10			3,731			12		86%	-	-	385,039
HVAC Upstream - Water Source Heat Pump Systems			13			662			12		86%	-	-	90,555
HVAC Upstream - DMSHP Systems			4			575			12		86%	-	-	25,563
HVAC Upstream - Dual Enthalpy Economizer Controls (DEEC)			3			3,800			10		86%	-	-	112,742
HVAC Upstream - Circulator Pump			15			3,800			20		86%	-	-	958,013
HVAC Upstream - VRF			8			8,794			20		86%	-	-	1,195,073
Lighting Upstream - LED Screw In			1,186			121			4		83%	-	-	477,003
Lighting Upstream - LED Stairwell Kit			12			217			10		83%	-	-	21,291
Lighting Upstream - LED Linear Lamp			4,224			61			10		83%	-	-	2,122,929
Lighting Upstream - LED Linear Fixture			2,063			112			10		83%	-	-	1,909,780
Lighting Upstream - LED High Bay/Low Bay			1,025			807			13		83%	-	-	8,927,518
Lighting Upstream - LED Exterior			231			362			13		83%	-	-	903,374
Program Summary*												**44,359,389**	**56,129,415**	**77,988,573**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Small Business Energy Solutions Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Retrofit Track												-	-	-
Cooling	2	3	2	46,429	5,632	53,571	15	15	15	100%	100%	1,392,857	253,425	1,607,143
Lighting	4	62	18	62,712	22,203	36,458	15	13	14	100%	107%	3,762,712	17,895,631	9,830,625
Street Lights			1			70,000			13		103%	-	-	937,300
Exterior Lighting - Retrofit		33			18,365			13		100%		-	7,878,754	-
Evap Fan control		2			14,069			10		100%		-	281,370	
Refrigeration		2			3,476			10		100%		-	69,510	
Lighting Controls		8			4,912			8		100%		-	314,360	
												-	-	-
New Equipment & Construction Track												-	-	-
Lighting		9			25,618			15		100%		-	3,458,385	
Ext Lighting		3			12,506			15		100%		-	562,755	
Heat Pumps		2			3,021			12		100%		-	72,504	
VFDs		3			40,466			14		100%		-	1,699,586	
												-	-	-
Direct Install Track												-	-	-
Ext Lighting	14			34,483			13			100%		6,275,862	-	
Lighting	25		25	42,400		66,287	13		13	100%	107%	13,780,000	-	23,051,374
Refrigeration	3			18,333			12			100%		660,000	-	
Exterior Lighting			24			34,286			13		103%	-	-	11,018,057
Refrigeration			3			20,370			12		100%	-	-	733,333
												-	-	-
All													-	-
Upstream Food Service Planning			6			1,801			13		86%	-	-	120,833
HVAC Upstream - Unitary Air Conditioners			7			3,731			12		86%	-	-	269,527
HVAC Upstream - Heat Pump Systems			8			3,873			12		86%	-	-	319,755
Lighting Upstream - LED Screw In			558			121			4		83%	-	-	224,472
Lighting Upstream - LED Stairwell Kit			6			217			10		83%	-	-	10,019
Lighting Upstream - LED Linear Lamp			1,988			61			10		83%	-	-	999,026
Lighting Upstream - LED Linear Fixture			971			112			10		83%	-	-	898,720
Lighting Upstream - LED High Bay/Low Bay			483			807			13		83%	-	-	4,201,185
Lighting Upstream - LED Exterior			109			362			13		83%	-	-	425,117
Program Summary*												**25,871,431**	**32,486,280**	**54,646,487**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Municipal Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020 Plan	2018 Plan	2018 Actual	2020 Plan
Retrofit												-	-	-						-	-	-
Lighting - LED	9	2	10	16,667	63,459	17,500	14	13	14	100%	107%	2,100,000	1,649,934	2,621,500						-	-	-
Park Lot Lights	10		10	25,000		24,250	15		15		103%	3,750,000	-	3,746,625						-	-	-
Outdoor Lighting - Retrofit		1			5,333			13		100%		-	69,329							-	-	
New Equipment & Construction Track																						
Lighting - LED		3			17,630			13		100%		-	687,557							-	-	
Lighting-Custom Canterbury		52			20			13		100%		-	13,468							-	-	
Lighting-Custom Concord TV		1			84,582			13		100%		-	1,099,566							-	-	
Outdoor Lighting - New		2			4,989			15		100%		-	149,655							-	-	
Weatherization																						
Weatherization - Other	2		2	11,083		11,111	20		20	100%	100%	443,333	-	444,444	45.00		25.00	100%	100%	1,800	-	1,000
Weatherization - Electric Heat		1			1,320			20		100%		-	26,400							-	-	
HVAC																						
Custom - HVAC heat pumps		1			3,800			12		100%		-	45,600	-						-	-	-
Program Summary*												**6,293,333**	**3,741,509**	**6,812,569**						**1,800**	**-**	**1,000**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Unitil Energy System, Inc.
2020 System Benefits Charge ("SBC") Calculation

Year	EE Total Budget	RGGI Revenues	FCM Revenues	Other Revenues	Prior Year Deferral with Interest	Current Year Interest	Projected Ending Balance	SBC Requirement	Forecasted Distribution (kWh)	SBC Rate EE Portion ($/kWh)	SBC Rate EAP Portion ($/kWh)	SBC Rate LBR Portion ($/kWh)	2020 Total SBC Rate ($/kWh)
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N
2020	$ 8,169,469	$ 283,556	$ 746,048	$ -	$ (951,086)	$ -	$ (40,836)	$ 6,229,615	1,179,851,294	$0.00528	$0.00150	$0.00074	$0.00752

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Company Forecast
Col. C: Company Forecast
Col. D: Company Forecast
Col. E: Company Forecast
Col. F: Page 2, Line 15
Col. G: Page 3, Line 14 (2020)
Col. H. Page 3, Line 15 - Line 14 (2020)
Col. I: Col. B - Col. C - Col. D - Col. E + Col. F - Col. H.
Col. J: Company Forecast
Col. K: Col. I / Col. J
Col. L: EAP Portion of SBC Rate
Col. M: Page 4, Col. G
Col. N: Col. K + Col. L + Col. M

Unitil Energy Systems, Inc.
Energy Efficiency Expense & SBC Revenue Reconciliation
January 1, 2019 to December 31, 2019

		Jan-19 Recast	Feb-19 Recast	Mar-19 Recast	Apr-19 Recast	May-19 Recast	Jun-19 Estimate	Jul-19 Estimate	Aug-19 Estimate	Sep-19 Estimate	Oct-19 Estimate	Nov-19 Estimate	Dec-19 Estimate	Total
1	Beginning Balance -- (Over)/Under Recovery	$ (1,502,655)	$ (1,471,232)	$ (1,782,301)	$ (1,907,946)	$ (2,165,650)	$ (2,161,044)	$ (2,056,035)	$ (1,956,433)	$ (1,846,132)	$ (1,698,756)	$ (1,492,134)	$ (1,224,579)	
2	**Total Costs**	161,074	151,595	323,648	238,534	414,610	575,029	594,534	596,786	633,543	629,294	648,798	692,057	$ 5,659,503
	Revenues													
3	Class Sales (inc. LI) -- kWh	106,079,283	101,444,970	96,352,577	90,642,951	86,378,165	89,558,374	115,316,153	113,182,801	94,293,685	96,547,396	85,775,055	96,051,319	1,171,622,729
4	Charge -- $/kWh	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	$ 0.00373	
5	Energy Efficiency Revenues	$ 346,308	$ 378,600	$ 359,543	$ 338,258	$ 322,350	$ 334,053	$ 430,129	$ 422,172	$ 351,715	$ 360,122	$ 319,941	$ 358,271	$ 4,321,462
6	Forward Capacity Market Revenue	$ 77,580	$ 77,526	$ 77,571	$ 77,571	$ 77,571	$ 55,453	$ 55,453	$ 55,453	$ 55,453	$ 55,453	$ 55,453	$ 55,453	$ 775,991
7	RGGI Funding	$ 74,147	$ -	$ -	$ 71,223	$ -	$ 71,004	$ -	$ -	$ 71,004	$ -	$ -	$ -	$ 287,379
8	Other Revenues	$ (375,000)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ (375,000)
9	**Total Revenues**	$ 123,036	$ 456,126	$ 437,114	$ 487,052	$ 399,922	$ 460,510	$ 485,582	$ 477,625	$ 478,173	$ 415,575	$ 375,394	$ 413,724	$ 5,009,832
10	(Over)/Under Recovery (excluding interest)	$ (1,464,617)	$ (1,775,763)	$ (1,895,768)	$ (2,156,463)	$ (2,150,962)	$ (2,046,524)	$ (1,947,083)	$ (1,837,271)	$ (1,690,761)	$ (1,485,036)	$ (1,218,730)	$ (946,246)	
	Interest Calculation													
11	Average Monthly Balance	$ (1,483,636)	$ (1,623,498)	$ (1,839,035)	$ (2,032,205)	$ (2,158,306)	$ (2,103,784)	$ (2,001,559)	$ (1,896,852)	$ (1,768,446)	$ (1,591,896)	$ (1,355,432)	$ (1,085,412)	
12	Interest Rate	5.25%	5.25%	5.25%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.25%	5.25%	5.25%	
13	Days per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
14	Computed Interest	$ (6,615)	$ (6,538)	$ (12,178)	$ (9,187)	$ (10,082)	$ (9,510)	$ (9,350)	$ (8,861)	$ (7,994)	$ (7,098)	$ (5,849)	$ (4,840)	$ (98,102)
15	**Ending Balance**	$ (1,471,232)	$ (1,782,301)	$ (1,907,946)	$ (2,165,650)	$ (2,161,044)	$ (2,056,035)	$ (1,956,433)	$ (1,846,132)	$ (1,698,756)	$ (1,492,134)	$ (1,224,579)	$ (951,086)	

Line 1: Prior period ending balance.
Line 2: Page 1, Col. B
Line 3: Company Forecast
Line 4: Page 1, Col. J
Line 5: Line 3 * Line 4
Line 6: Page 1, Col. D
Line 7: Page 1, Col. C
Line 8: Page 1, Col. E.
Line 9: Sum of Lines 5 through 8
Line 10: Line 1 + Line 2 - Line 9
Line 11: (Line 1 + Line 10)/2
Line 12: Prime Rate
Line 14: Line 11 * ((Line 12/# days per year) * Line 13)). March includes interest adjustments for 2017 performance incentive true-ups.
Line 15: Line 10 + Line 14

Unitil Energy Systems, Inc.
Energy Efficiency Expense & SBC Revenue Reconciliation
January 1, 2020 to December 31, 2020

		Jan-20 Estimate	Feb-20 Estimate	Mar-20 Estimate	Apr-20 Estimate	May-20 Estimate	Jun-20 Estimate	Jul-20 Estimate	Aug-20 Estimate	Sep-20 Estimate	Oct-20 Estimate	Nov-20 Estimate	Dec-20 Estimate	Total
1	Beginning Balance -- (Over)/Under Recovery	$ (951,086)	$ (1,060,291)	$ (1,079,631)	$ (1,128,791)	$ (1,067,604)	$ (927,933)	$ (890,514)	$ (869,974)	$ (788,723)	$ (710,051)	$ (485,729)	$ (293,056)	
2	**Total Costs**	549,300	572,307	614,009	618,319	641,326	683,028	687,338	710,345	752,047	748,689	771,695	821,066	$ 8,169,469
	Revenues													
3	Class Sales (inc. LI) -- kWh	110,673,223	98,014,312	98,047,815	91,425,658	80,973,448	97,351,281	114,790,200	107,691,923	102,740,134	88,051,798	85,162,786	104,928,714	1,179,851,294
4	Charge -- $/kWh	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	$ 0.00528	
5	Energy Efficiency Revenues	$ 584,355	$ 517,516	$ 517,692	$ 482,727	$ 427,540	$ 514,015	$ 606,092	$ 568,613	$ 542,468	$ 464,913	$ 449,660	$ 554,024	$ 6,229,615
6	Forward Capacity Market Revenue	$ 69,689	$ 69,689	$ 69,689	$ 69,689	$ 69,689	$ 56,801	$ 56,801	$ 56,801	$ 56,801	$ 56,801	$ 56,801	$ 56,801	$ 746,048
7	RGGI Funding	$ -	$ -	$ 70,889	$ -	$ -	$ 70,889	$ -	$ -	$ 70,889	$ -	$ 70,889	$ -	$ 283,556
8	Other Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
9	**Total Revenues**	$ 654,043	$ 587,204	$ 658,270	$ 552,416	$ 497,229	$ 641,704	$ 662,893	$ 625,414	$ 670,158	$ 521,714	$ 577,349	$ 610,824	$ 7,259,219
10	(Over)/Under Recovery (excluding interest)	$ (1,055,829)	$ (1,075,189)	$ (1,123,892)	$ (1,062,888)	$ (923,507)	$ (886,610)	$ (866,068)	$ (785,043)	$ (706,833)	$ (483,077)	$ (291,384)	$ (82,813)	
	Interest Calculation													
11	Average Monthly Balance	$ (1,003,458)	$ (1,067,740)	$ (1,101,761)	$ (1,095,839)	$ (995,555)	$ (907,272)	$ (878,291)	$ (827,509)	$ (747,778)	$ (596,564)	$ (388,556)	$ (187,934)	
12	Interest Rate	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	
13	Days per Month	31	29	31	30	31	30	31	31	30	31	30	31	366
14	Computed Interest	$ (4,462)	$ (4,442)	$ (4,899)	$ (4,716)	$ (4,427)	$ (3,904)	$ (3,906)	$ (3,680)	$ (3,218)	$ (2,653)	$ (1,672)	$ (836)	$ (42,813)
15	**Ending Balance**	$ (1,060,291)	$ (1,079,631)	$ (1,128,791)	$ (1,067,604)	$ (927,933)	$ (890,514)	$ (869,974)	$ (788,723)	$ (710,051)	$ (485,729)	$ (293,056)	$ (83,649)	

Line 1: Prior period ending balance
Line 2: Page 1, Col. B
Line 3: Company Forecast
Line 4: Page 1, Col. J
Line 5: Line 3 * Line 4
Line 6: Page 1, Col. D
Line 7: Page 1, Col. C
Line 8: Page 1, Col. E
Line 9: Sum of Lines 5 through 8
Line 10: Line 1 + Line 2 - Line 9
Line 11: (Line 1 + Line 10)/2
Line 12: Prime Rate
Line 14: Line 11 * ((Line 12/# days per year) * Line 13))
Line 15: Line 10 + Line 14

Unitil Energy System, Inc.
2020 System Benefits Charge Calculation (LBR Component)

Year	Forecasted LBR Revenue	Prior Year Deferral with Interest	Current Year Interest	Total LBR Revenue	Forecasted Distribution (kWh)	SBC Rate LBR Portion ($/kWh)
Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G
2020	$ 861,767	$ 12,236	$ (870)	$ 873,133	1,179,851,294	$ 0.00074

Col. A: Effective year (January 1, 2020 - December 31, 2020)
Col. B: Page 5, Line 12, Col. P
Col. C: Prior Year LBR Component Over/(Under) recovery, with interest, Page 6 Line 9
Col. D: Page 7, Col. O, Line 8
Col. E: Col. B + Col. C + Col. D
Col. F: Company Forecast
Col. G: Col. E/Col. F

Unitil Energy System, Inc.
Estimated Monthly and Cumulative Savings (kWh) and Lost Base Revenue
January 1, 2019 to December 31, 2020

Line	Description	12/31/2018	Forecast Jan-19	Forecast Feb-19	Forecast Mar-19	Forecast Apr-19	Forecast May-19	Forecast Jun-19	Forecast Jul-19	Forecast Aug-19	Forecast Sep-19	Forecast Oct-19	Forecast Nov-19	Forecast Dec-19	2019 Annual Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annualized Savings (2019)		200,842	209,835	218,827	227,820	236,813	245,806	254,799	263,792	272,785	278,780	287,773	299,764	2,997,636
2	C&I Annualized Savings (2019)		475,384	496,670	517,955	539,241	560,527	581,813	603,099	624,385	645,671	659,861	681,147	709,528	7,095,280
3	Total		676,225	706,504	736,783	767,062	797,340	827,619	857,898	888,177	918,455	938,641	968,920	1,009,292	10,092,917
			Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Cumulative LBR Savings
4	Monthly Residential Savings		16,737	17,486	18,236	18,985	19,734	20,484	21,233	21,983	22,732	23,232	23,981	24,980	
5	Cumulative Residential Savings	351,036	367,773	385,259	403,495	422,480	442,214	462,698	483,931	505,914	528,646	551,878	575,859	600,839	5,730,984
6	Average Residential Distribution Rate		0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	0.03537	
7	Lost Residential Revenue		$ 13,008	$ 13,627	$ 14,272	$ 14,943	$ 15,641	$ 16,366	$ 17,117	$ 17,894	$ 18,698	$ 19,520	$ 20,368	$ 21,252	$ 202,705
8	Monthly C&I Savings (2017 & 2018)	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	
9	Average C&I Distribution Rate		0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	0.03212	
10	Lost C&I Revenue		$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 34,029	$ 408,342
11	Monthly C&I Savings (2019)		39,615	41,389	43,163	44,937	46,711	48,484	50,258	52,032	53,806	54,988	56,762	59,127	
12	Cumulative C&I Savings	-	39,615	81,004	124,167	169,104	215,815	264,299	314,557	366,589	420,395	475,384	532,146	591,273	
13	Average C&I Distribution Rate (kWh		0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	0.00024	
14	Lost C&I Revenue		$ 10	$ 19	$ 30	$ 41	$ 52	$ 63	$ 75	$ 88	$ 101	$ 114	$ 128	$ 142	$ 863
15	Monthly C&I kW Savings (2019)		32	32	32	32	32	32	32	32	32	32	32	32	
16	Cumulative C&I kW Savings	-	32	95	158	221	284	347	410	473	536	599	662	725	
17	Average C&I Demand Rate		$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	$ 9.11	
18	Lost C&I Demand Revenue		$ 287	$ 861	$ 1,435	$ 2,009	$ 2,583	$ 3,157	$ 3,731	$ 4,305	$ 4,879	$ 5,453	$ 6,027	$ 6,601	$ 41,327
19	**Total Lost Revenue**		**$ 47,333**	**$ 48,536**	**$ 49,765**	**$ 51,021**	**$ 52,304**	**$ 53,615**	**$ 54,952**	**$ 56,316**	**$ 57,707**	**$ 59,115**	**$ 60,551**	**$ 62,023**	**653,237**

Line	Description	12/31/2019	Forecast Jan-20	Forecast Feb-20	Forecast Mar-20	Forecast Apr-20	Forecast May-20	Forecast Jun-20	Forecast Jul-20	Forecast Aug-20	Forecast Sep-20	Forecast Oct-20	Forecast Nov-20	Forecast Dec-20	2020 Annual Savings
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N	Col. O
1	Residential Annualized Savings (2020)		215,359	225,002	234,645	244,287	253,930	263,573	273,216	282,859	292,502	298,931	308,574	321,431	3,214,309
2	C&I Annualized Savings (2020)		719,221	751,425	783,629	815,833	848,037	880,241	912,445	944,649	976,853	998,322	1,030,526	1,073,464	10,734,644
3	Total		934,580	976,427	1,018,274	1,060,120	1,101,967	1,143,814	1,185,661	1,227,508	1,269,355	1,297,253	1,339,099	1,394,895	13,948,953
			Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Cumulative LBR Savings
4	Monthly Residential Savings		17,947	18,750	19,554	20,357	21,161	21,964	22,768	23,572	24,375	24,911	25,714	26,786	
5	Cumulative Residential Savings	600,839	618,786	637,536	657,089	677,447	698,608	720,572	743,340	766,912	791,287	816,198	841,912	868,698	8,838,383
6	Average Residential Distribution Rate		0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	0.03558	
7	Lost Residential Revenue		$ 22,016	$ 22,684	$ 23,379	$ 24,104	$ 24,856	$ 25,638	$ 26,448	$ 27,287	$ 28,154	$ 29,040	$ 29,955	$ 30,908	$ 314,470
8	Monthly C&I Savings (2017 & 2018)	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	1,059,418	
9	Average C&I Distribution Rate		0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	0.03152	
10	Lost C&I Revenue		$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 33,393	$ 400,714
11	Monthly C&I Savings (2020)		59,935	62,619	65,302	67,986	70,670	73,353	76,037	78,721	81,404	83,193	85,877	89,455	
12	Cumulative C&I Savings (2019 & 2020)	591,273	651,208	713,827	779,130	847,116	917,785	991,139	1,067,176	1,145,897	1,227,301	1,310,495	1,396,372	1,485,827	
13	Average C&I Distribution Rate (kWh		0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	0.00026	
14	Lost C&I Revenue		$ 169	$ 186	$ 203	$ 220	$ 239	$ 258	$ 277	$ 298	$ 319	$ 341	$ 363	$ 386	$ 3,259
15	Monthly C&I kW Savings (2020)		46	46	46	46	46	46	46	46	46	46	46	46	
16	Cumulative C&I Savings (2019 & 2020)	756	802	894	986	1,077	1,169	1,261	1,353	1,444	1,536	1,628	1,720	1,812	
17	Average C&I Demand Rate		$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	$ 9.14	
18	Lost C&I Demand Revenue		$ 7,330	$ 8,169	$ 9,008	$ 9,847	$ 10,685	$ 11,524	$ 12,363	$ 13,202	$ 14,041	$ 14,880	$ 15,719	$ 16,557	$ 143,325
19	**Total Lost Revenue**		**$ 62,909**	**$ 64,431**	**$ 65,982**	**$ 67,563**	**$ 69,173**	**$ 70,813**	**$ 72,482**	**$ 74,180**	**$ 75,907**	**$ 77,654**	**$ 79,430**	**$ 81,245**	**861,767**

2020
Line 1: Estimated Savings per 2020 Core Filing
Line 2: Estimated Savings per 2020 Core Filing
Line 3: Line 1 + Line 2
Line 4: Line 1 / 12
Line 5: Prior Month Line 5 + Current Month Line 4. 12/31/18 Cumulative savings shown in Col. B from 2018 Annual Report.
Line 6: Page 8, Line 1, Col. 5
Line 7: Line 5 x Line 6
Line 8: Prior Month Line 9 + Current Month Line 8. 12/31/18 Cumulative savings shown in Col. B from 2018 Annual Report.
Line 9: Page 8, line 2, column (b)
Line 10: Line 8 x Line 9
Line 11: Line 2/12
Line 12: Prior month Line 12 + current month Line 11
Line 13: Page 8 Line 4, Column (a)
Line 14:Line 12 x Line 13
Line 15: Page 5a Line 29
Line 16: Prior month Lines 15 + 16 + Current month Line 15
Line 17: Page 8 Line 4 Column 6
Line 18: Line 16 x Line 17
Line 19: Line 7 + Line 10 + Line 14 + Line 18

UNITIL ENERGY SYSTEM, INC.

	Electric Savings for LBR Calculation	**PLAN SAVINGS - PROGRAM YEAR 2020**	
		Annual kWh	Peak kW
1.	Residential Programs	for LBR Calc	for LBR Calc
2.	Home Energy Assistance	77,948	
3.	EnergyStar Homes	98,351	
4.	Home Performance w/EnergyStar	93,440	
5.	Energy Star Products	2,269,569	
6.	Home Energy Reports	675,000	
7.	Residential	3,214,309	n/a (1)
8.			
9.	Commercial & Industrial Programs		
10.	Large Business Energy Solutions	6,050,964	726
11.	Small Business Energy Solutions	4,224,433	357
12.	Municipal Energy Solutions	459,247	19
13.	Commercial & Industrial	10,734,644	1,101
14.			
15.	Total 2019 Portfolio	13,948,953	1,101

LBR Savings Allocation			Estimate Jan-20	Estimate Feb-20	Estimate Mar-20	Estimate Apr-20	Estimate May-20	Estimate Jun-20	Estimate Jul-20	Estimate Aug-20	Estimate Sep-20	Estimate Oct-20	Estimate Nov-20	Estimate Dec-20	Total
16.	Residential Programs														
17.	Annualized kWh by Month	L. 7 * L. 34	215,359	225,002	234,645	244,287	253,930	263,573	273,216	282,859	292,502	298,931	308,574	321,431	3,214,309
18.															
19.	Monthly Incremental	L. 17 ÷ 12 Mo.	17,947	18,750	19,554	20,357	21,161	21,964	22,768	23,572	24,375	24,911	25,714	26,786	267,859
20.	Monthly Cumulative	Sum of L. 19	17,947	36,697	56,250	76,608	97,769	119,733	142,501	166,073	190,448	215,359	241,073	267,859	1,628,315
21.															
22.	Commercial & Industrial Programs														
23.	Annualized kWh by Month	L. 13 * L. 34	719,221	751,425	783,629	815,833	848,037	880,241	912,445	944,649	976,853	998,322	1,030,526	1,073,464	10,734,644
24.	Annualized kW by Mo.	L. 13 "kW" ÷ 12	92	92	92	92	92	92	92	92	92	92	92	92	1,101
25.															
26.	Monthly Incremental kWh	L. 23 ÷ 12 Mo.	59,935	62,619	65,302	67,986	70,670	73,353	76,037	78,721	81,404	83,193	85,877	89,455	894,554
27.	Monthly Cumulative kWh - Current Yr	Sum of L. 26	59,935	122,554	187,856	255,842	326,512	399,865	475,903	554,623	636,028	719,221	805,098	894,554	5,437,992
28.															
29.	Monthly Incremental kW - Year 1 @ 50%	L. 24 ÷ 2	45.89	45.89	45.89	45.89	45.89	45.89	45.89	45.89	45.89	45.89	45.89	45.89	550.67
30.	Monthly Cumulative kW - Current Yr	Sum of L. 29	45.89	137.67	229.45	321.22	413.00	504.78	596.56	688.34	780.12	871.89	963.67	1,055.45	6,608.04
31.															
32.															
33.	Cumulative Annualized kWh by Mo.	Sum L. 17 + L. 23	934,580	1,911,007	2,929,280	3,989,401	5,091,368	6,235,182	7,420,843	8,648,351	9,917,706	11,214,958	12,554,058	13,948,953	
34.	Percent of Plan Savings	(L. 17 + L. 23)÷ L. 15	6.7%	7.0%	7.3%	7.6%	7.9%	8.2%	8.5%	8.8%	9.1%	9.3%	9.6%	10.0%	

NOTES:

(1) LBR associated with residential peak reductions is not applicable.

Unitil Energy System, Inc.
Lost Base Revenue Reconciliation
January 1, 2019 to December 31, 2019

Line	Description	Recast Jan-19	Recast Feb-19	Recast Mar-19	Recast Apr-19	Recast May-19	Forecast Jun-19	Forecast Jul-19	Forecast Aug-19	Forecast Sep-19	Forecast Oct-19	Forecast Nov-19	Forecast Dec-19	2019 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N
1	Beginning Balance	$ (29,866)	$ (27,795)	$ (33,170)	$ (34,625)	$ (31,804)	$ (25,430)	$ (19,383)	$ (25,653)	$ (29,453)	$ (21,838)	$ (13,972)	$ 1,090	
2	Lost Revenues	$ 47,333	$ 48,536	$ 49,765	$ 51,021	$ 52,304	$ 53,615	$ 54,952	$ 56,316	$ 57,707	$ 59,115	$ 60,551	$ 62,023	$ 653,237
	REVENUE													
3	Revenue ($)	$ 45,134	$ 53,787	$ 51,069	$ 48,050	$ 45,797	$ 47,466	$ 61,118	$ 59,987	$ 49,976	$ 51,170	$ 45,461	$ 50,907	$ 609,923
4	Cumulative Over/(Under) Recovery	$ (27,667)	$ (33,047)	$ (34,474)	$ (31,654)	$ (25,297)	$ (19,282)	$ (25,549)	$ (29,325)	$ (21,722)	$ (13,893)	$ 1,118	$ 12,206	
	INTEREST													
5	Average Monthly Balance	$ (28,767)	$ (30,421)	$ (33,822)	$ (33,140)	$ (28,550)	$ (22,356)	$ (22,466)	$ (27,489)	$ (25,588)	$ (17,865)	$ (6,427)	$ 6,648	
6	Interest Rate	5.25%	5.25%	5.25%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.25%	5.25%	5.25%	5.25%
7	Days per Month	31	28	31	30	31	30	31	31	30	31	30	31	365
8	Computed Interest	$ (128)	$ (123)	$ (151)	$ (150)	$ (133)	$ (101)	$ (105)	$ (128)	$ (116)	$ (80)	$ (28)	$ 30	$ (1,213)
9	**Ending Balance**	$ (27,795)	$ (33,170)	$ (34,625)	$ (31,804)	$ (25,430)	$ (19,383)	$ (25,653)	$ (29,453)	$ (21,838)	$ (13,972)	$ 1,090	$ 12,236	

Line 1: Prior period ending balance
Line 2: Page 5, Line 12
Line 3: Actual revenue through May 2019. Estimated revenue June through December.
Line 4: Line 1 + Line 2 - Line 3
Line 5: (Line 1 + Line 4)/2
Line 6: Prime Rate
Line 8: Line 7 * ((Line 5/# days per year) * Line 9))
Line 9: Line 4 + Line 8

Unitil Energy System, Inc.
Lost Base Revenue Reconciliation
January 1, 2020 to December 31, 2020

Line	Description	Estimate Jan-20	Estimate Feb-20	Estimate Mar-20	Estimate Apr-20	Estimate May-20	Estimate Jun-20	Estimate Jul-20	Estimate Aug-20	Estimate Sep-20	Estimate Oct-20	Estimate Nov-20	Estimate Dec-20	2020 Total
	Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J	Col. K	Col. L	Col. M	Col. N
1	Beginning Balance	$ 12,236	$ (6,741)	$ (14,886)	$ (21,540)	$ (21,725)	$ (12,548)	$ (13,831)	$ (26,384)	$ (32,026)	$ (32,285)	$ (19,905)	$ (3,546)	
2	Lost Revenues	$ 62,909	$ 64,431	$ 65,982	$ 67,563	$ 69,173	$ 70,813	$ 72,482	$ 74,180	$ 75,907	$ 77,654	$ 79,430	$ 81,245	$ 861,767
	REVENUE													
3	Revenue ($)	$ 81,898	$ 72,531	$ 72,555	$ 67,655	$ 59,920	$ 72,040	$ 84,945	$ 79,692	$ 76,028	$ 65,158	$ 63,020	$ 77,647	$ 873,090
4	Cumulative Over/(Under) Recovery	$ (6,754)	$ (14,841)	$ (21,459)	$ (21,632)	$ (12,471)	$ (13,775)	$ (26,295)	$ (31,896)	$ (32,147)	$ (19,790)	$ (3,496)	$ 51	
	INTEREST													
5	Average Monthly Balance	$ 2,741	$ (10,791)	$ (18,173)	$ (21,586)	$ (17,098)	$ (13,161)	$ (20,063)	$ (29,140)	$ (32,086)	$ (26,037)	$ (11,701)	$ (1,748)	
6	Interest Rate	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	
7	Days per Month	31	29	31	30	31	30	31	31	30	31	30	31	366
8	Computed Interest	$ 12	$ (45)	$ (81)	$ (93)	$ (76)	$ (57)	$ (89)	$ (130)	$ (138)	$ (116)	$ (50)	$ (8)	$ (870)
9	**Ending Balance**	$ (6,741)	$ (14,886)	$ (21,540)	$ (21,725)	$ (12,548)	$ (13,831)	$ (26,384)	$ (32,026)	$ (32,285)	$ (19,905)	$ (3,546)	$ 43	

Line 1: Prior period ending balance
Line 2: Page 5, Line 12
Line 3: Estimated revenue
Line 4: Line 1 + Line 2 - Line 3
Line 5: (Line 1 + Line 4)/2
Line 6: Prime Rate
Line 8: Line 7 * ((Line 5/# days per year) * Line 9))
Line 9: Line 4 + Line 8

Unitil Energy Systems, Inc.
Calculation of Forecasted Average Distribution Rate for Lost Revenue
Based on Actual Billing Determinants for January - December 2018 and Distribution Rates effective May 1, 2019

	(1)	(2)	(3)	(4)	(5)	(6) = (1) / (4)	(7) = (2) / (5)	(8) = (3) / (5)
		Revenue*			Units			
Rate Class	Demand Charges	kWh Charges	Total Demand and kWh Charges	Delivery kW	Delivery kWh	Average Distribution Rate $/kW	Average Distribution Rate $/kWh[(a)]	Average Distribution Rate $/kWh[(b)]
1 **Residential D**	$ -	$ 18,166,910	$ 18,166,910	-	510,593,306	**N/A**	**N/A**	**$ 0.03558**
2 Regular General G2	$ 14,152,865	$ 184,162	$ 14,337,026	1,348,376	356,329,407	10.50	$ 0.00052	$ 0.04024
3 Large General Service Rate G1	$ 7,910,309	$ -	$ 7,910,309	1,066,070	349,430,348	7.42	$ -	$ 0.02264
4 **Commercial and Industrial**	$ 22,063,173	$ 184,162	$ 22,247,335	2,414,445	705,759,755	**$ 9.14**	**$ 0.00026**	**$ 0.03152**

Note: See page 10 for details.
* Revenues include demand charges and kWh charges only.
Customer, meter and per luminaire charges are excluded.
(a) For 2019 & 2020 C&I Savings.
(b) For 2017 & 2018 C&I Savings (in 2020 calculation).

Bill Impacts of Changes in System Benefits Charge - Unitil Energy Systems, Inc.
Rates Effective August 1, 2019

	2019	2020
System Benefits Charge ($/kWh)	$ 0.00576	0.00752
Bill per month, including UES Default Service Charge		
Residential Rate R (625 kWh/month)	$ 106.36	$ 107.46
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)	$ 1,451.99	$ 1,469.59
Change from previous rate level - $ per month		
Residential Rate R (625 kWh/month)		$ 1.10
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		$ 17.60
Change from previous rate level - %		
Residential Rate R (625 kWh/month)		1.0%
General Service Rate G, three-phase service (40 kW, 10,000 kWh/month)		1.2%

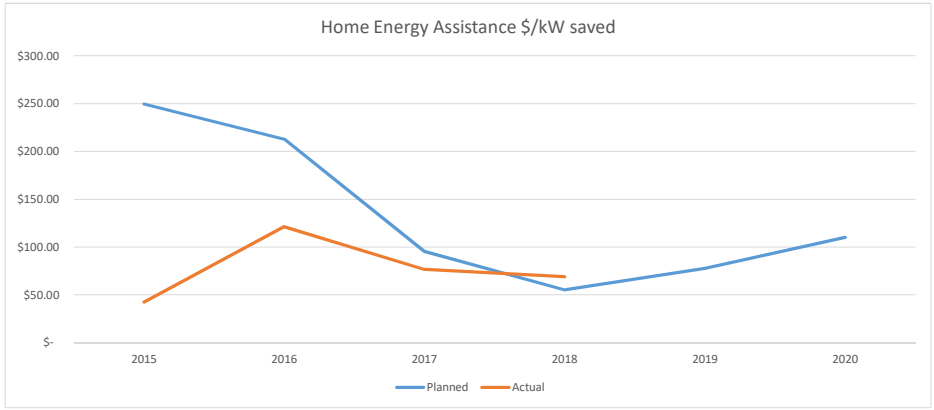
Unitil Energy Systems, Inc.
Calculation of Distribution Revenue at the Rate Level Effective January 1, 2018 - December 31, 2018
Based on Billing Determinants for the Twelve Months Ending December 31, 2018

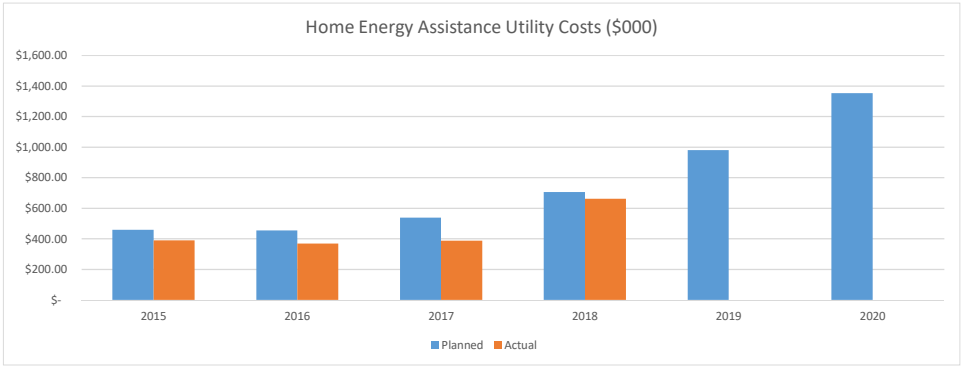
Rate Class	Customer Group		(a) 5/1/2019 Monthly Distribution Charge	(b) Jan - Dec Billing Determinants	(c) Calculated Revenue = (a) X (b) Customer/ Meter/ Luminaire	Demand	kWh	Total
Residential Rate R	Standard Rate	Customer Charge	$ 16.22	802,334	$ 13,013,850			
		All kWh	$ 0.03558	510,593,306			$ 18,166,910	$ 31,180,759
Total Rate R		**Customers**		**802,334**				
		Meters		**n/a**				
		KWH		**510,593,306**				
		Revenue			**$ 13,013,850**	**$ -**	**$ 18,166,910**	**$ 31,180,759**
General Rate G2	Standard Rate	Customer Charge	$ 29.19	124,876	$ 3,645,135			
		Demand charge (All KW)	$ 10.51	1,348,376		$ 14,171,428		
		All KWH	$ -	350,227,041			$ -	
		Transformer Ownership Credit, G2	$ (0.50000)	37,126		$ (18,563)		$ 17,798,000
	G2 - kWh Meter	Customer Charge	$ 18.38	512,615	$ 9,421,864			
		All KWH	$ 0.00883	489,369			$ 4,321	$ 9,426,185
QR Water Heating and/or Space Heat		Customer Charge	$ 9.73	3,179	$ 30,934			
		All KWH	$ 0.03204	5,612,997			$ 179,840	$ 210,774
Total Rate G2		**Customers**		**640,670**				
		Meters		**n/a**				
		Billing demand		**1,348,376**				
		KWH		**356,329,407**				
		Revenue			**$ 13,097,933**	**$ 14,152,865**	**$ 184,162**	**$ 27,434,959**
Large General Rate G1	Standard Rate	Customer Charge Secondary Voltage	$ 162.18	1,534	$ 248,768			
		Customer Charge Primary Voltage	$ 86.49	395	$ 34,181			
		All kVA	$ 7.60	1,066,070		$ 8,102,130		
		All KWH	$ -	349,430,348			$ -	
		Transformer Ownership Credit, G1	$ (0.50000)	383,642		$ (191,821)		$ 8,193,258
Total Rate G1		**Customers Secondary Voltage**		**1,534**				
		Customers Primary Voltage		**395**				
		Meters		**n/a**				
		Billing demand		**1,066,070**				
		KWH		**349,430,348**				
		Revenue			**$ 282,949**	**$ 7,910,309**	**$ -**	**$ 8,193,258**

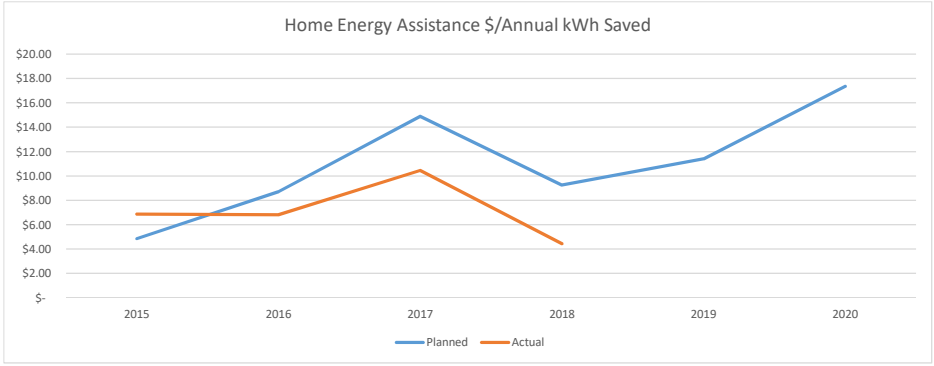
Outdoor Lighting Rate OL	100	Mercury Vapor Street			$13.28	16,172	$	214,769		
	175	Mercury Vapor Street			$15.75	821	$	12,933		
	250	Mercury Vapor Street			$17.85	868	$	15,496		
	400	Mercury Vapor Street			$21.25	1,603	$	34,072		
	1000	Mercury Vapor Street			$42.19	24	$	1,013		
	250	Mercury Vapor Flood			$19.02	732	$	13,921		
	400	Mercury Vapor Flood			$22.75	1,110	$	25,261		
	1000	Mercury Vapor Flood			$37.70	170	$	6,414		
	100	Mercury Vapor Power Bracket			$13.41	4,305	$	57,729		
	175	Mercury Vapor Power Bracket			$14.87	607	$	9,026		
	50	Sodium Vapor Street			$13.52	42,697	$	577,260		
	100	Sodium Vapor Street			$15.22	1,270	$	19,337		
	150	Sodium Vapor Street			$15.28	4,323	$	66,054		
	250	Sodium Vapor Street			$19.14	13,751	$	263,193		
	400	Sodium Vapor Street			$24.13	2,896	$	69,879		
	1000	Sodium Vapor Street			$41.66	1,641	$	68,364		
	150	Sodium Vapor Flood			$17.61	2,842	$	50,051		
	250	Sodium Vapor Flood			$20.76	3,867	$	80,274		
	400	Sodium Vapor Flood			$23.58	4,864	$	114,683		
	1000	Sodium Vapor Flood			$42.03	2,628	$	110,475		
	50	Sodium Vapor Power Bracket			$12.51	1,409	$	17,622		
	100	Sodium Vapor Power Bracket			$14.04	881	$	12,373		
	175	Metal Halide Street			$19.91	17	$	329		
	250	Metal Halide Street			$21.65	-	$	-		
	400	Metal Halide Street			$22.45	-	$	-		
	175	Metal Halide Flood			$23.00	-	$	-		
	250	Metal Halide Flood			$24.83	-	$	-		
	400	Metal Halide Flood			$24.88	-	$	-		
	1000	Metal Halide Flood			$32.22	**446**	$	14,363		
	175	Metal Halide Power Bracket			$18.63	-	$	-		
	250	Metal Halide Power Bracket			$19.81	-	$	-		
	400	Metal Halide Power Bracket			$21.17	-	$	-		
	42	LED Area Light Fixture			$13.16	-	$	-		
	57	LED Area Light Fixture			$13.21	-	$	-		
	25	LED Cobra Head Fixture			$13.11	-	$	-		
	88	LED Cobra Head Fixture			$13.30	-	$	-		
	108	LED Cobra Head Fixture			$13.36	-	$	-		
	193	LED Cobra Head Fixture			$13.62	-	$	-		
	123	LED Flood Light Fixture			$13.41	-	$	-		
	194	LED Flood Light Fixture			$13.62	-	$	-		
	297	LED Flood Light Fixture			$13.93	-	$	-		
Total Rate OL		**Luminaires**				**109,944**				
		Customers			n/a					
		Meters			**-**					
		KWH	$	-	**8,060,761**					
		Revenue					**$**	**1,854,889**	**$**	**-**
										$
Total Retail		**Customers**			**1,444,538**					**1,854,889**
		Meters			**n/a**					
		Luminaires			**110,390**					
		Billing Demand			**2,414,445**					
		KWH			**1,224,413,822**					
		Revenue				**$ 26,394,731**	**$**	**23,918,062**	**$**	**18,351,071**
										$
										68,663,865

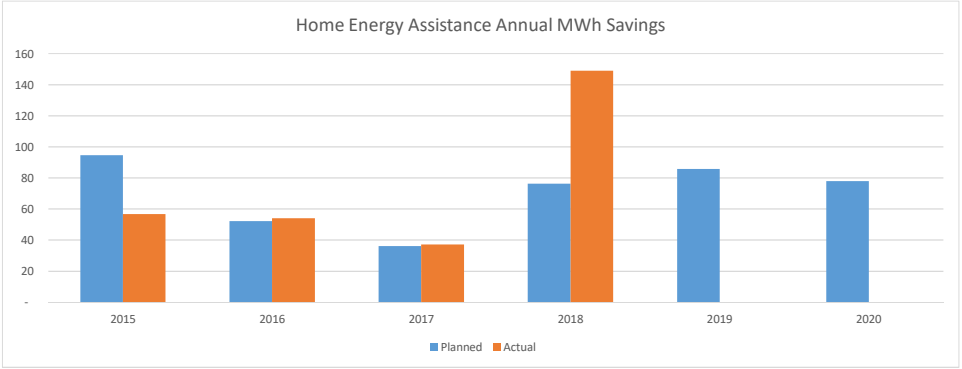
Home Energy Assistance

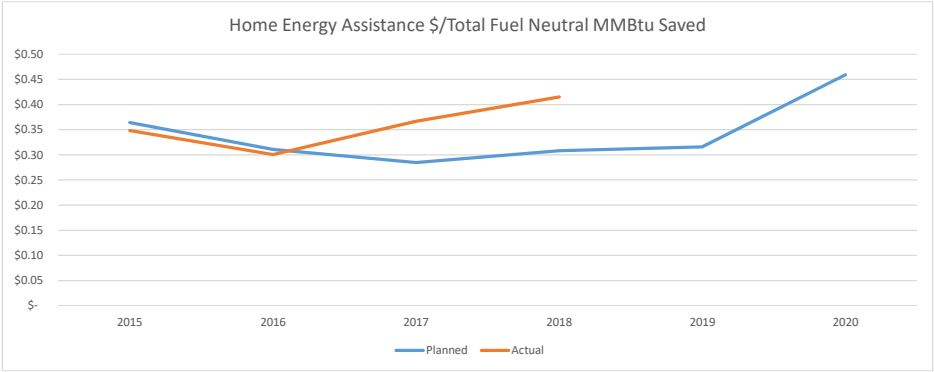
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 459.62	$ 455.33	$ 538.87	$ 706.64	$ 980.09	$ 1,353.13
Annual MWh Savings	95	52	36	76	86	78
Summer kW Savings	1.84	2.14	5.65	12.81	12.61	12.29
Annual MMBTU Savings	1,261.63	1,465.79	1,892.00	2,293.60	3,102.63	2,948.24
$/Annual kWh Saved	$ 4.86	$ 8.71	$ 14.92	$ 9.25	$ 11.41	$ 17.36
$/kW saved	$ 249.52	$ 212.85	$ 95.35	$ 55.14	$ 77.74	$ 110.14
$/Total Fuel Neutral MMBtu Saved	$ 0.36	$ 0.31	$ 0.28	$ 0.31	$ 0.32	$ 0.46
Actual						
Utility Costs ($000)	$ 389.54	$ 369.33	$ 388.23	$ 662.39		
Annual MWh Savings	57	54	37	149		
Summer kW Savings	9.19	3.05	5.07	9.62		
Annual MMBTU Savings	1,118.95	1,228.97	1,058.07	1,595.98		
$/Annual kWh Saved	$ 6.86	$ 6.82	$ 10.45	$ 4.44		
$/kW saved	$ 42.40	$ 121.24	$ 76.54	$ 68.88		
$/Total Fuel Neutral MMBtu Saved	$ 0.35	$ 0.30	$ 0.37	$ 0.42		





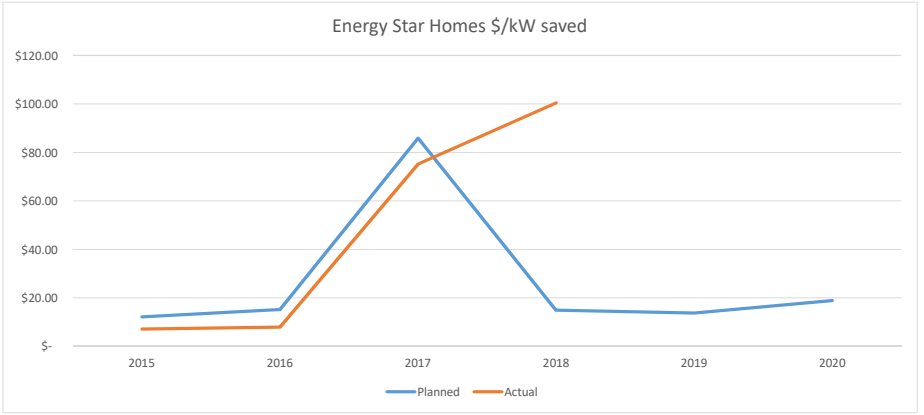


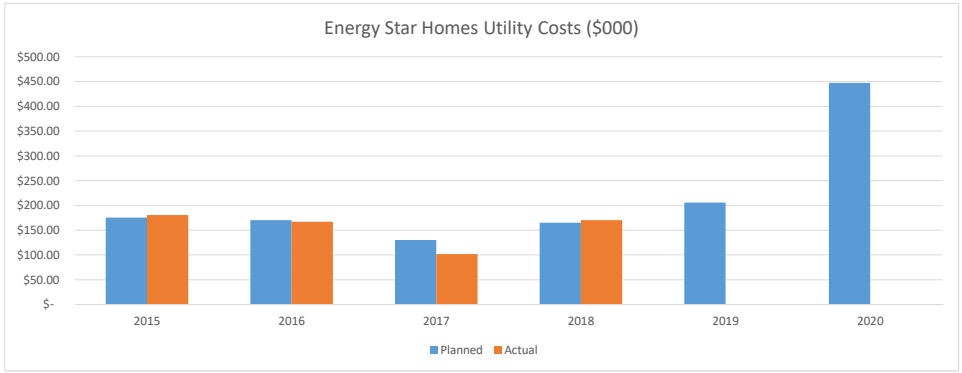


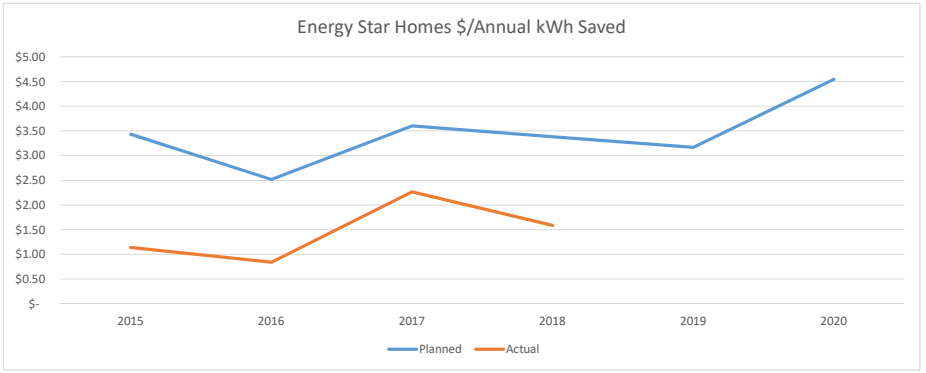


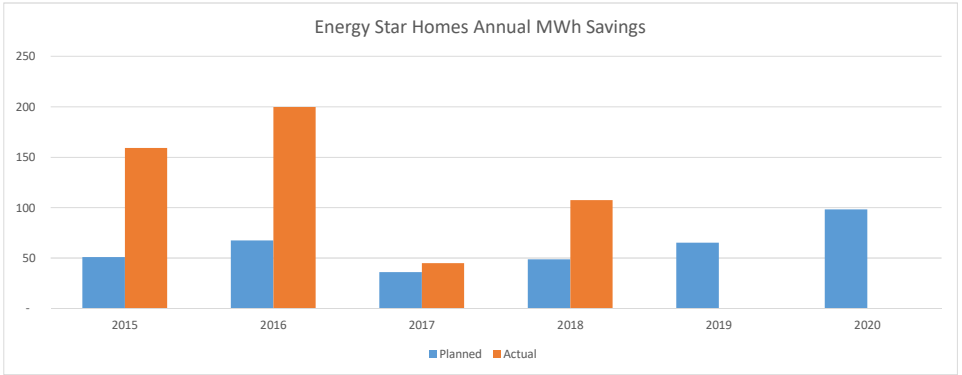
Energy Star Homes

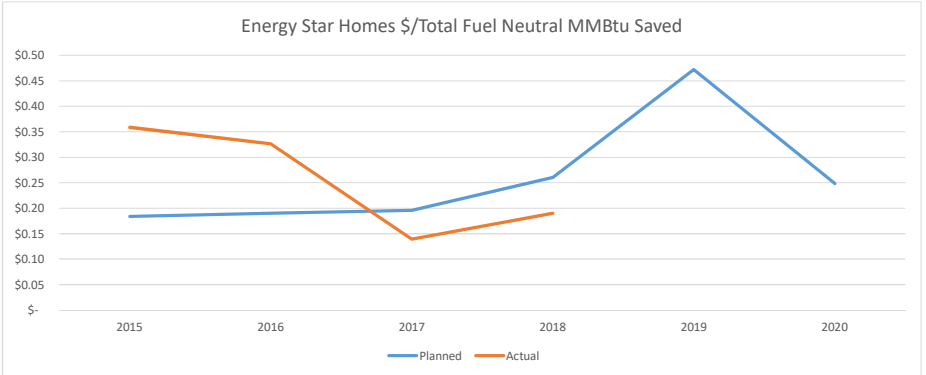
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 175.00	$ 170.00	$ 130.00	$ 164.70	$ 205.78	$ 446.82
Annual MWh Savings	51	68	36	49	65	98
Summer kW Savings	14.34	11.26	1.51	11.06	15.11	23.71
Annual MMBTU Savings	951.23	894.92	665.27	632.42	436.04	1,800.00
$/Annual kWh Saved	$ 3.43	$ 2.52	$ 3.60	$ 3.38	$ 3.16	$ 4.54
$/kW saved	$ 12.21	$ 15.10	$ 85.87	$ 14.90	$ 13.62	$ 18.84
$/Total Fuel Neutral MMBtu Saved	$ 0.18	$ 0.19	$ 0.20	$ 0.26	$ 0.47	$ 0.25
Actual						
Utility Costs ($000)	$ 180.41	$ 167.13	$ 101.43	$ 169.80		
Annual MWh Savings	159	200	45	107		
Summer kW Savings	25.18	21.15	1.35	1.69		
Annual MMBTU Savings	503.05	512.40	728.51	893.50		
$/Annual kWh Saved	$ 1.13	$ 0.84	$ 2.26	$ 1.58		
$/kW saved	$ 7.17	$ 7.90	$ 75.15	$ 100.45		
$/Total Fuel Neutral MMBtu Saved	$ 0.36	$ 0.33	$ 0.14	$ 0.19		





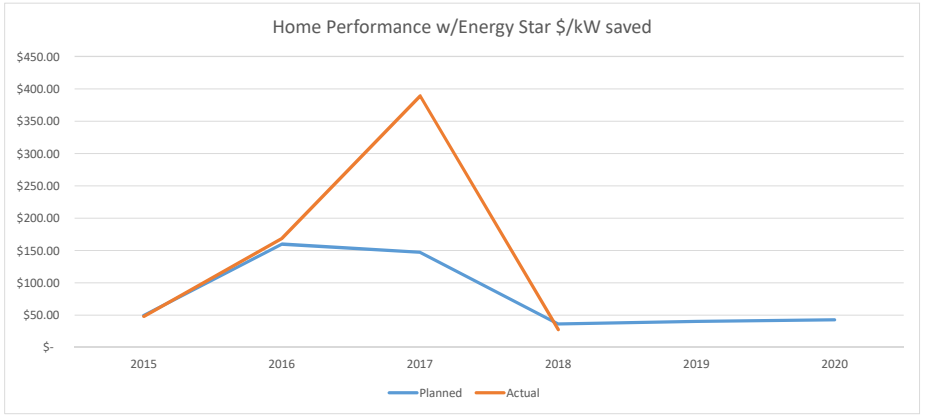


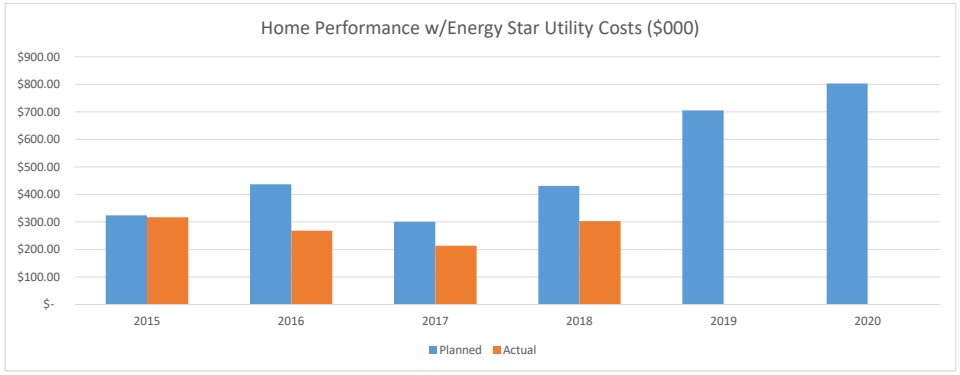


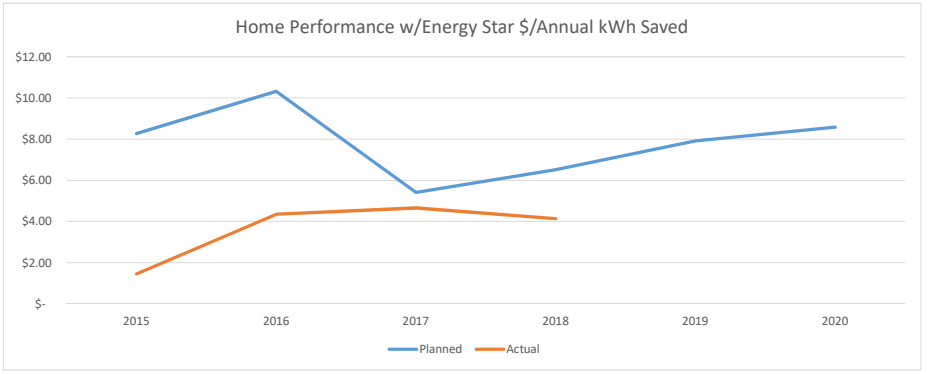


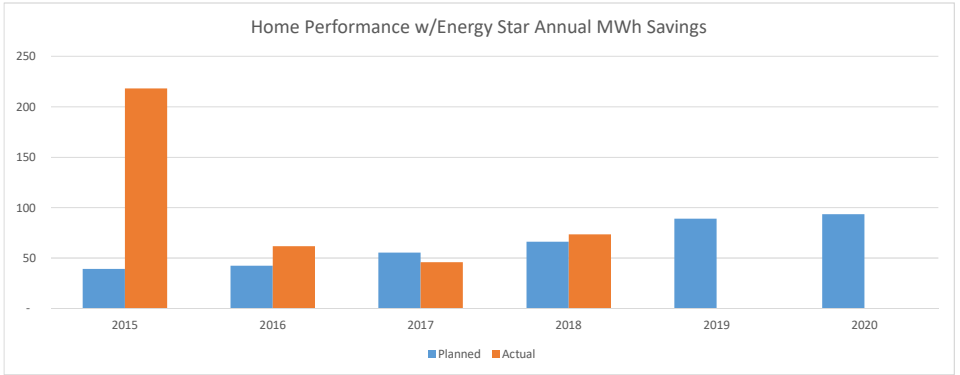
Home Performance w/Energy Star

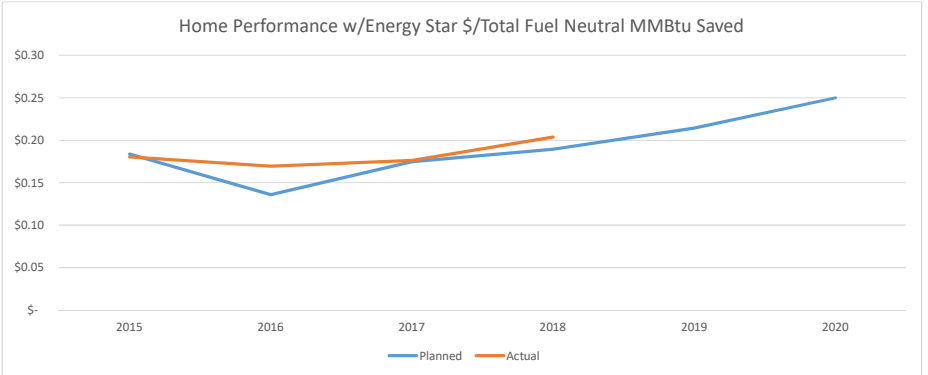
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 322.99	$ 436.63	$ 300.00	$ 430.00	$ 704.30	$ 801.80
Annual MWh Savings	39	42	55	66	89	93
Summer kW Savings	6.53	2.73	2.05	11.94	17.60	19.01
Annual MMBTU Savings	1,759.57	3,210.97	1,717.60	2,270.40	3,291.00	3,209.40
$/Annual kWh Saved	$ 8.27	$ 10.33	$ 5.41	$ 6.51	$ 7.91	$ 8.58
$/kW saved	$ 49.49	$ 159.70	$ 146.69	$ 36.01	$ 40.01	$ 42.17
$/Total Fuel Neutral MMBtu Saved	$ 0.18	$ 0.14	$ 0.17	$ 0.19	$ 0.21	$ 0.25
Actual						
Utility Costs ($000)	$ 316.63	$ 268.19	$ 213.46	$ 302.73		
Annual MWh Savings	218	62	46	73		
Summer kW Savings	6.63	1.59	0.55	11.07		
Annual MMBTU Savings	1,757.81	1,583.90	1,212.18	1,486.46		
$/Annual kWh Saved	$ 1.45	$ 4.34	$ 4.65	$ 4.12		
$/kW saved	$ 47.75	$ 168.74	$ 389.00	$ 27.35		
$/Total Fuel Neutral MMBtu Saved	$ 0.18	$ 0.17	$ 0.18	$ 0.20		





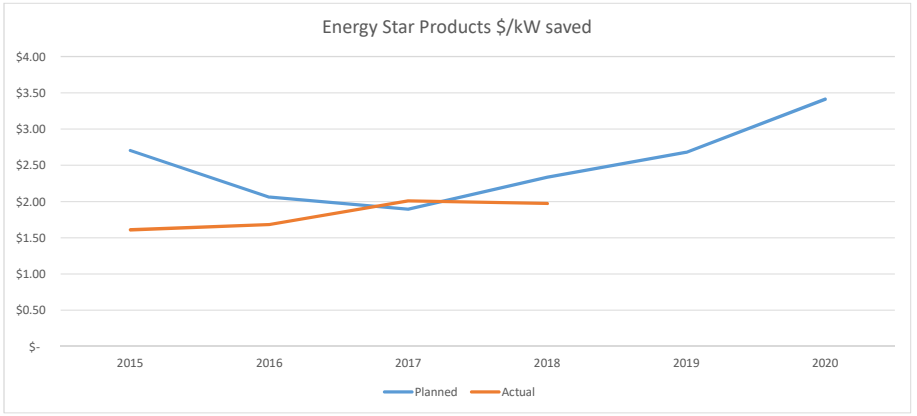


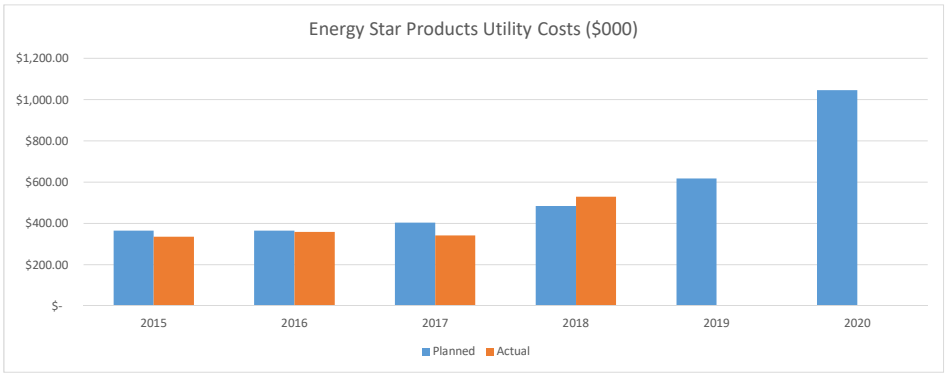


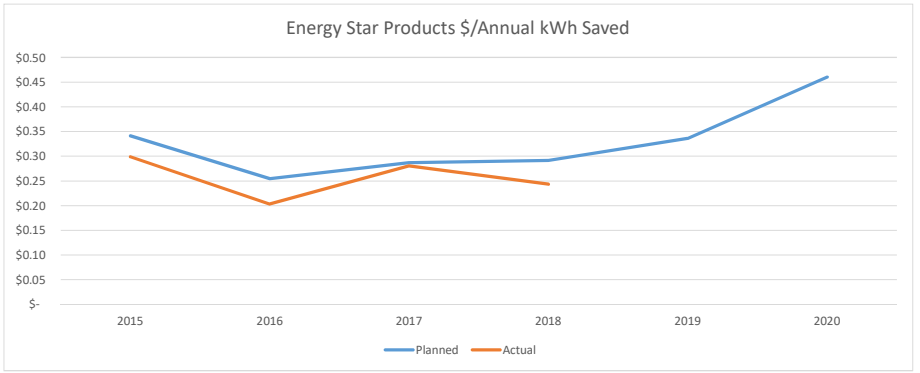


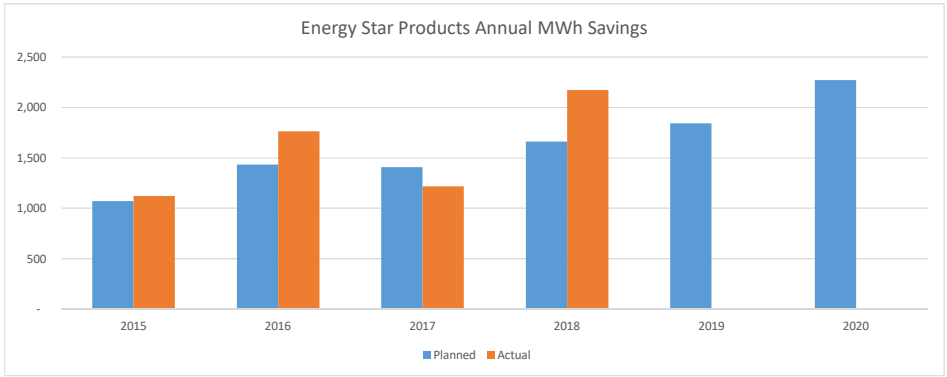
Energy Star Products

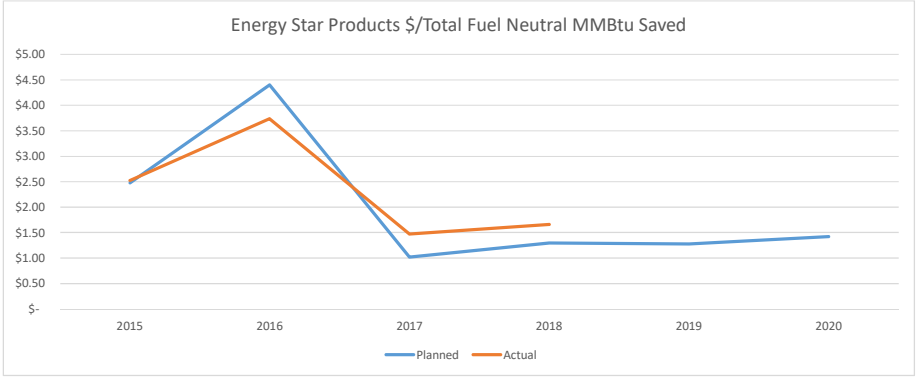
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 365.00	$ 365.00	$ 402.83	$ 484.19	$ 617.96	$ 1,044.55
Annual MWh Savings	1,070	1,433	1,406	1,663	1,841	2,270
Summer kW Savings	134.88	177.23	212.54	207.29	230.88	306.11
Annual MMBTU Savings	147.48	82.97	394.63	373.88	485.14	733.65
$/Annual kWh Saved	$ 0.34	$ 0.25	$ 0.29	$ 0.29	$ 0.34	$ 0.46
$/kW saved	$ 2.71	$ 2.06	$ 1.90	$ 2.34	$ 2.68	$ 3.41
$/Total Fuel Neutral MMBtu Saved	$ 2.47	$ 4.40	$ 1.02	$ 1.30	$ 1.27	$ 1.42
Actual						
Utility Costs ($000)	$ 334.79	$ 358.24	$ 340.90	$ 528.29		
Annual MWh Savings	1,121	1,764	1,216	2,173		
Summer kW Savings	208.01	212.96	169.71	267.59		
Annual MMBTU Savings	132.37	95.90	231.34	317.87		
$/Annual kWh Saved	$ 0.30	$ 0.20	$ 0.28	$ 0.24		
$/kW saved	$ 1.61	$ 1.68	$ 2.01	$ 1.97		
$/Total Fuel Neutral MMBtu Saved	$ 2.53	$ 3.74	$ 1.47	$ 1.66		





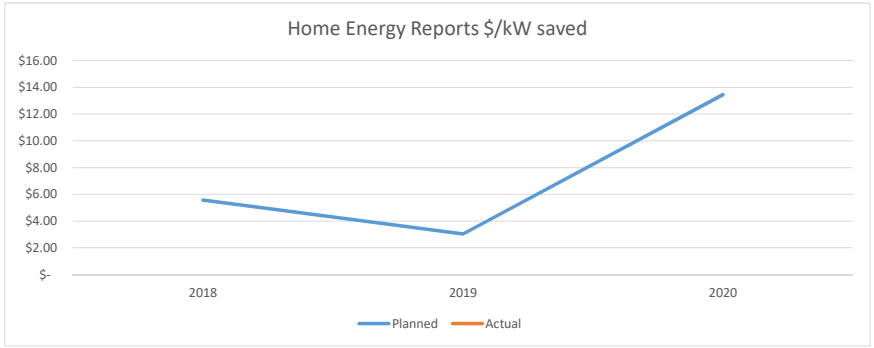


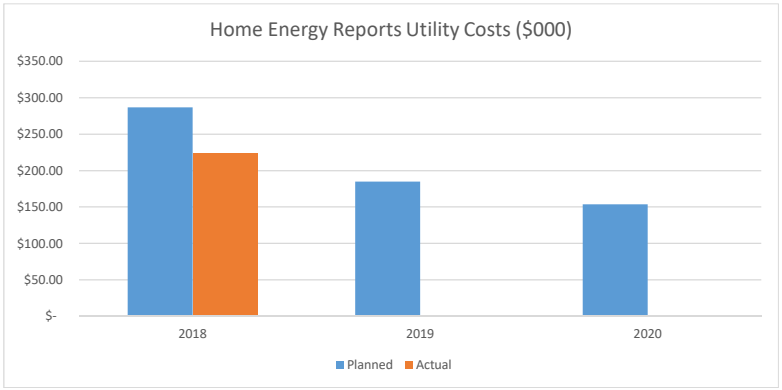


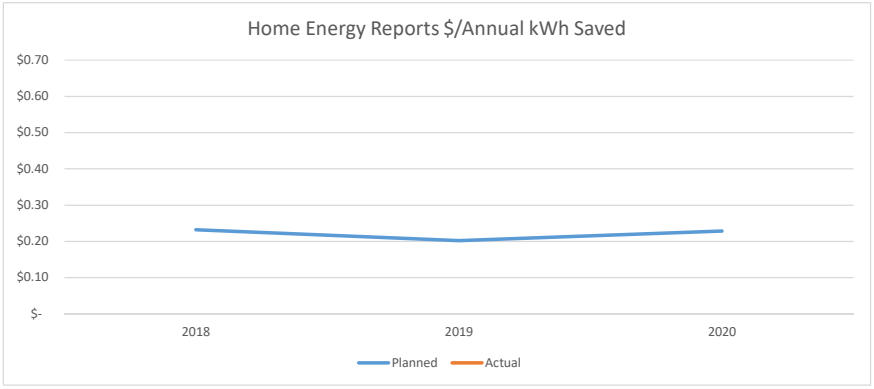


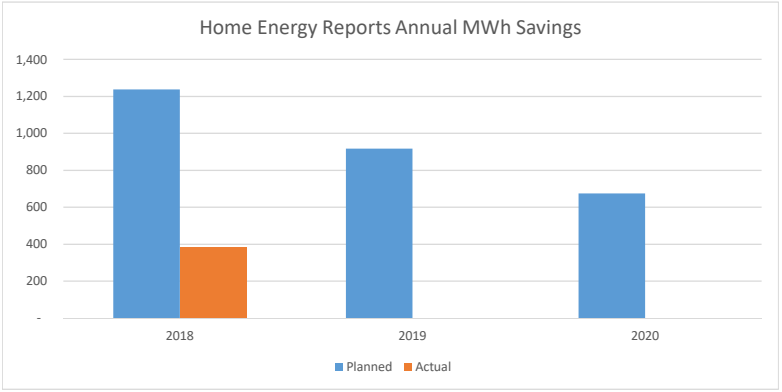
Home Energy Reports

	2018	2019	2020
Planned			
Utility Costs ($000)	$ 286.98	$ 184.99	$ 153.78
Annual MWh Savings	1,237	917	675
Summer kW Savings	51.54	60.71	11.43
$/Annual kWh Saved	$ 0.23	$ 0.20	$ 0.23
$/kW saved	$ 5.57	$ 3.05	$ 13.46
Actual			
Utility Costs ($000)	$ 223.78		
Annual MWh Savings	386		
Summer kW Savings	60.15		
$/Annual kWh Saved	$ 0.58		
$/kW saved	$ 3.72		



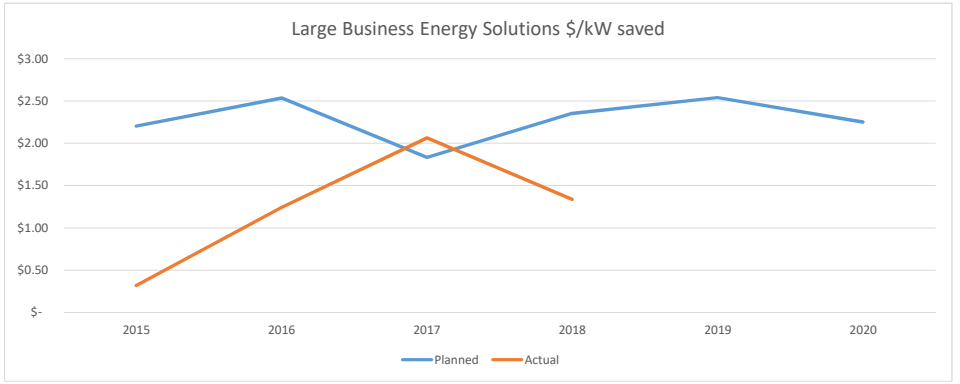


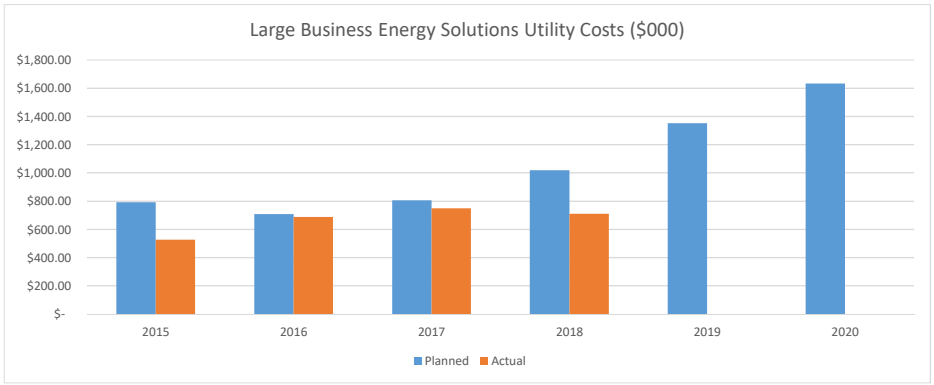


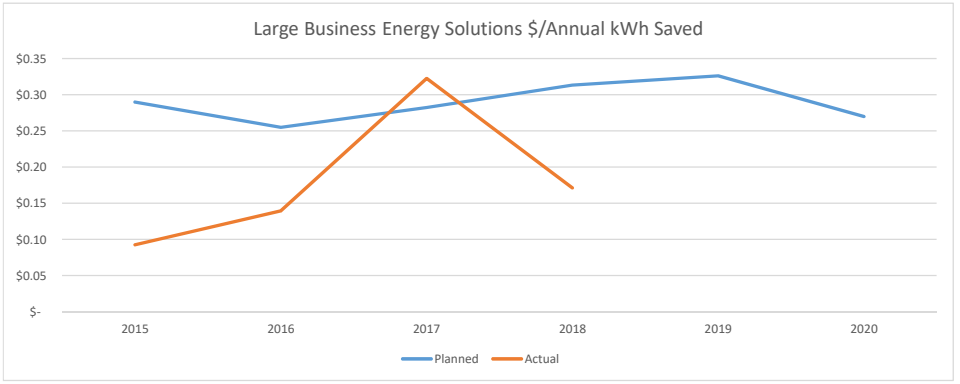


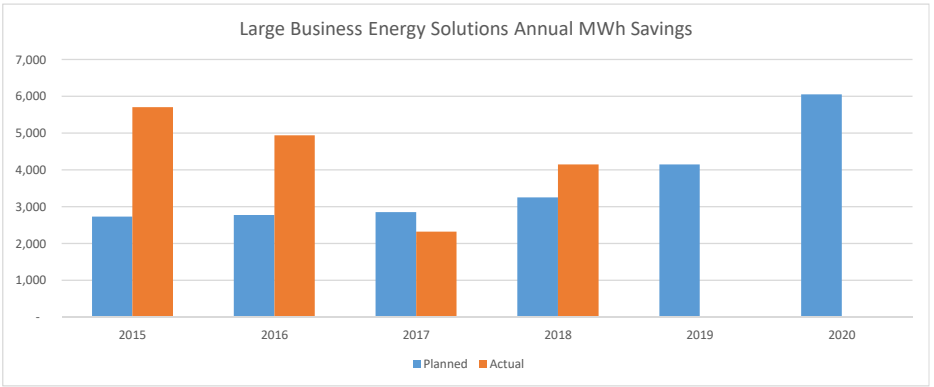
Large Business Energy Solutions

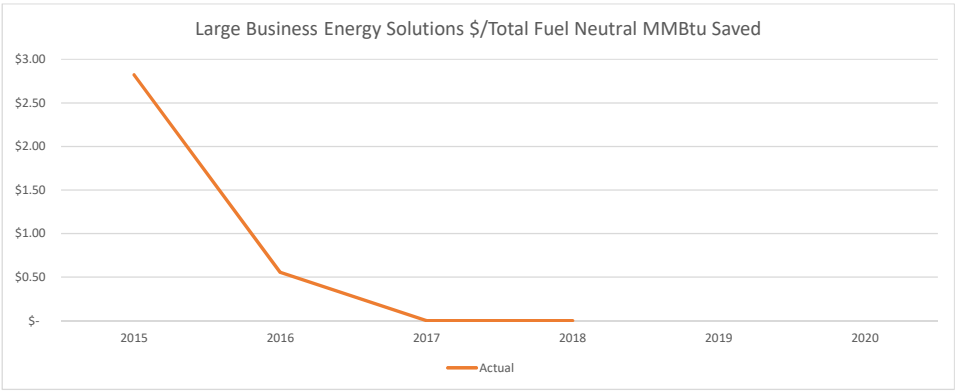
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 792.42	$ 708.10	$ 804.86	$ 1,018.00	$ 1,353.12	$ 1,632.10
Annual MWh Savings	2,734	2,779	2,851	3,251	4,148	6,051
Summer kW Savings	360.05	279.38	439.10	432.43	532.63	725.53
$/Annual kWh Saved	$ 0.29	$ 0.25	$ 0.28	$ 0.31	$ 0.33	$ 0.27
$/kW saved	$ 2.20	$ 2.53	$ 1.83	$ 2.35	$ 2.54	$ 2.25
Actual						
Utility Costs ($000)	$ 527.21	$ 688.32	$ 748.21	$ 711.15		
Annual MWh Savings	5,705	4,939	2,320	4,153		
Summer kW Savings	1,660.17	554.89	362.79	532.27		
Annual MMBTU Savings	186.80	1,239.06	-	-		
$/Annual kWh Saved	$ 0.09	$ 0.14	$ 0.32	$ 0.17		
$/kW saved	$ 0.32	$ 1.24	$ 2.06	$ 1.34		
$/Total Fuel Neutral MMBtu Saved	$ 2.82	$ 0.56				





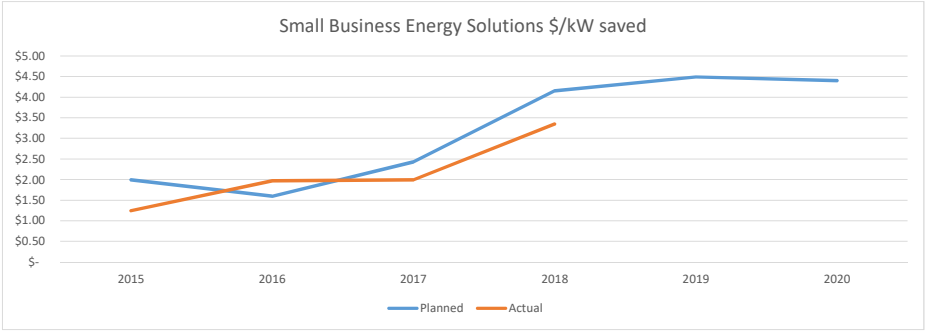


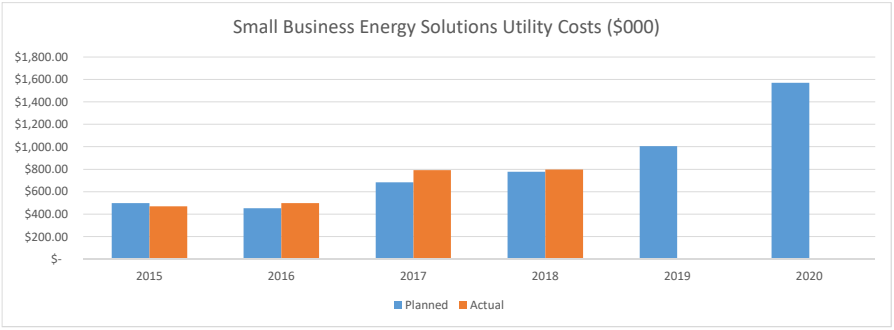


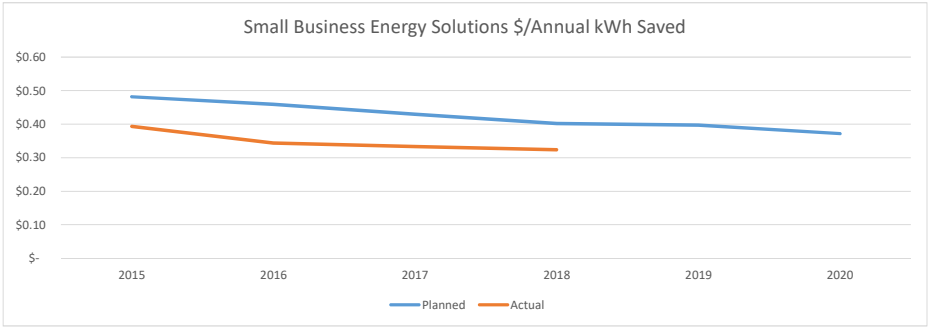


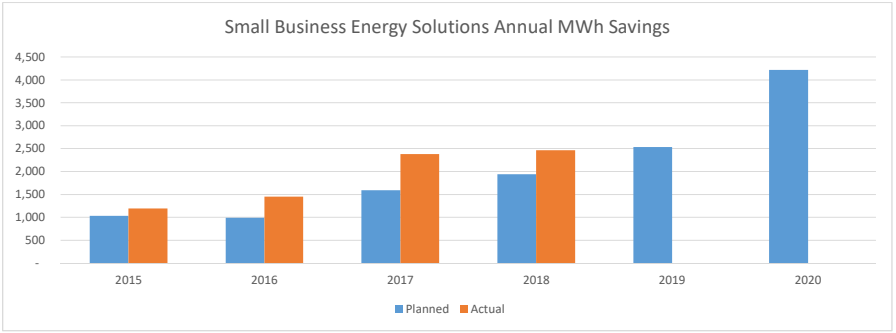
Small Business Energy Solutions

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 500.00	$ 455.00	$ 686.09	$ 779.76	$ 1,008.20	$ 1,570.43
Annual MWh Savings	1,037	991	1,597	1,941	2,536	4,224
Summer kW Savings	250.94	284.84	282.22	187.90	224.44	356.84
$/Annual kWh Saved	$ 0.48	$ 0.46	$ 0.43	$ 0.40	$ 0.40	$ 0.37
$/kW saved	$ 1.99	$ 1.60	$ 2.43	$ 4.15	$ 4.49	$ 4.40
Actual						
Utility Costs ($000)	$ 471.60	$ 499.14	$ 794.50	$ 799.50		
Annual MWh Savings	1,198	1,452	2,382	2,469		
Summer kW Savings	379.92	253.82	398.49	238.83		
$/Annual kWh Saved	$ 0.39	$ 0.34	$ 0.33	$ 0.32		
$/kW saved	$ 1.24	$ 1.97	$ 1.99	$ 3.35		



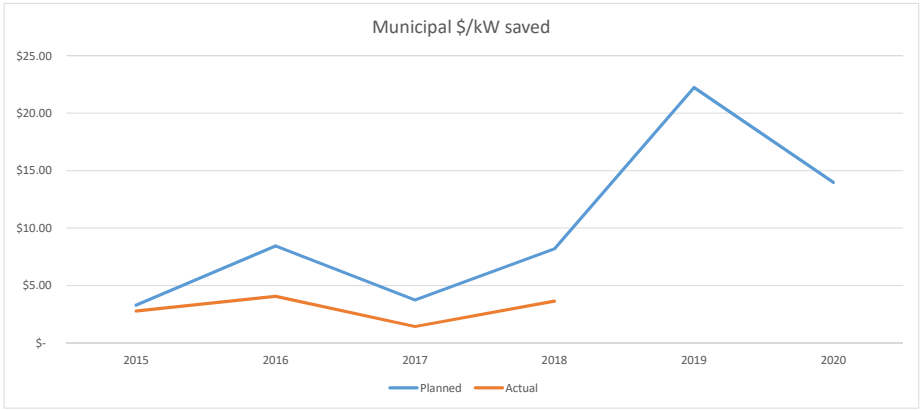


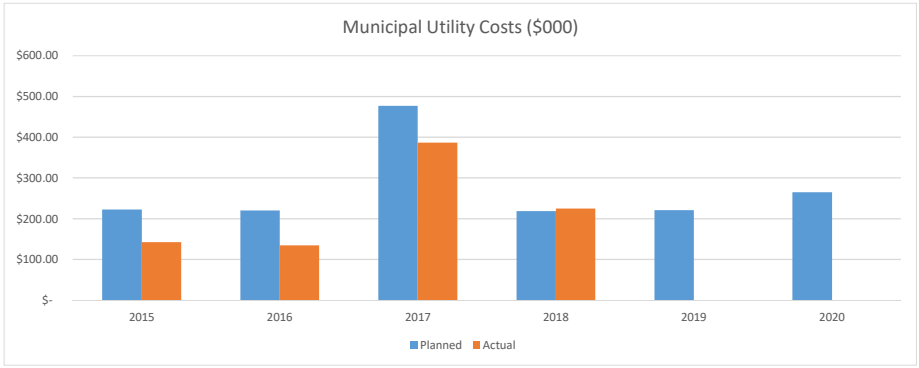


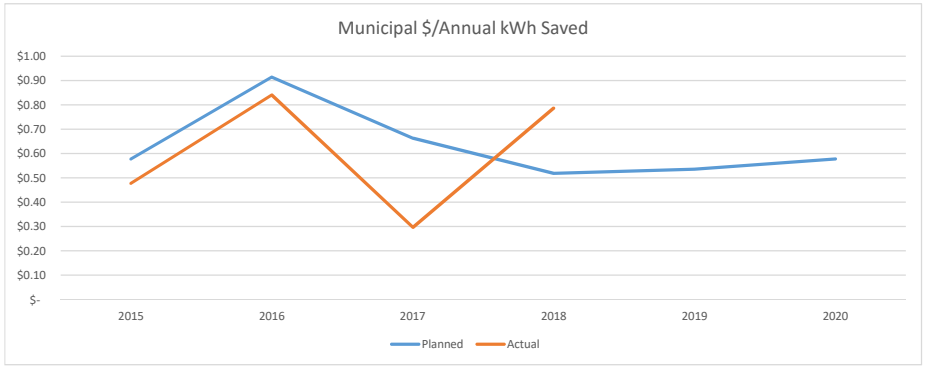


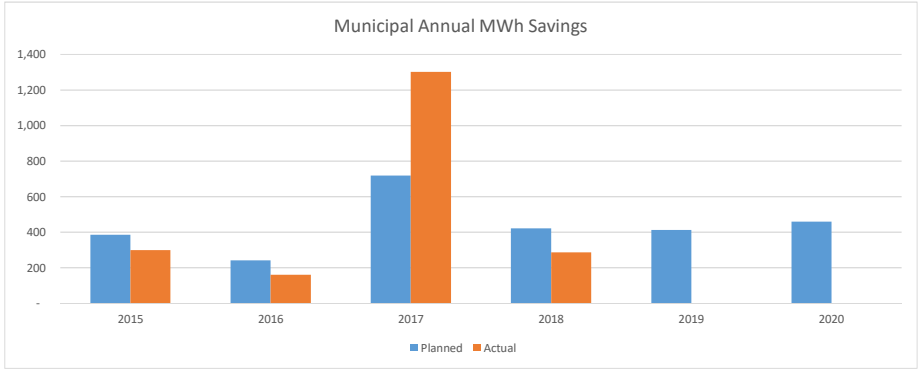
Municipal

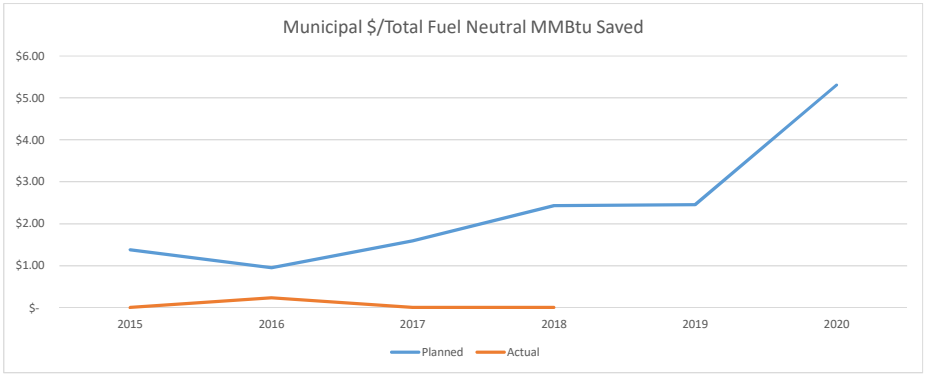
	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 222.57	$ 219.88	$ 476.53	$ 218.88	$ 220.64	$ 265.23
Annual MWh Savings	385	241	719	422	412	459
Summer kW Savings	67.76	26.00	126.85	26.69	9.93	18.98
Annual MMBTU Savings	161.40	231.00	300.00	90.00	90.00	50.00
$/Annual kWh Saved	$ 0.58	$ 0.91	$ 0.66	$ 0.52	$ 0.54	$ 0.58
$/kW saved	$ 3.28	$ 8.46	$ 3.76	$ 8.20	$ 22.23	$ 13.98
$/Total Fuel Neutral MMBtu Saved	$ 1.38	$ 0.95	$ 1.59	$ 2.43	$ 2.45	$ 5.30
Actual						
Utility Costs ($000)	$ 142.71	$ 134.37	$ 386.76	$ 224.88		
Annual MWh Savings	299	160	1,303	286		
Summer kW Savings	51.68	33.15	269.98	61.96		
Annual MMBTU Savings	-	579.10	-	-		
$/Annual kWh Saved	$ 0.48	$ 0.84	$ 0.30	$ 0.79		
$/kW saved	$ 2.76	$ 4.05	$ 1.43	$ 3.63		
$/Total Fuel Neutral MMBtu Saved		$ 0.23				











Program Cost-Effectiveness - 2020 PLAN

Program	Total Resource Benefit / Cost Ratio	Benefits ($000)	Utility Costs ($000)	Participant Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Participants Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential											
Home Energy Assistance	1.01	1,690.9	1,676.4	-	57.2	1,155.9	28.9	-	302	8,460.1	170,836.4
Energy Star Homes	1.04	2,831.4	874.689	1,841.4	168.486	3,762.1	15.9	40.9	406	12,724.4	283,197.6
Home Performance with Energy Star	1.67	2,079.7	933.2	309.2	178.7	1,066.8	38.2	27.9	649	11,796.1	209,185.5
Energy Star Products	1.06	1,840.2	867.569	861.5	123.1	1,919.0	62.3	-	2,013	11,161.4	188,881.4
Home Energy Reports	1.02	294.0	286.995	-	-	-	-	-	27,594	7,438.2	27,346.3
Sub-Total Residential	**1.14**	**8,736.2**	**4,638.9**	**3,012.2**	**527.5**	**7,903.8**	**145.3**	**68.8**	**30,964**	**51,580.2**	**879,447.1**
Commercial, Industrial & Municipal											
Large Business Energy Solutions	1.91	8,611.1	2,190.7	2,315.8	-	-	-	-	92	65,052.5	1,037,113.5
Small Business Energy Solutions	1.31	3,904.8	1,805.1	1,173.3	-	-	-	-	974	30,789.0	491,863.4
Education	0.00	-	87.9	-	-	-	-	-	-	-	-
Sub-Total Commercial, Industrial & Municipal	**1.65**	**12,515.9**	**4,083.8**	**3,489.1**	**-**	**-**	**-**	**-**	**1,067**	**95,841.5**	**1,528,976.9**
Total	**1.40**	**21,252.1**	**8,722.6**	**6,501.4**	**527.5**	**7,903.8**	**145.3**	**68.8**	**32,031**	**147,421.7**	**2,408,424.1**

Note: a 10% NEI adder is applied to total benefits, and an additional 10% NEI adder is applied to total benefits of the Home Energy Assistance program, excluding water.

Present Value Benefits - 2020 PLAN

Program	Total Benefits ($000)	Resource Benefits																		Non-Resource Benefits		
		Electric														Non-Electric						
		CAPACITY				ENERGY						Total Electric Resource Benefits							Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefits	Total Non-Resource Benefits
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE		Gas Benefits	Gas DRIPE	Total Gas Benefits	Water Benefits							
Residential																						
Home Energy Assistance	$ 1,691	$ -	$ -	$ -	$ -	$ 33	$ 29	$ 0	$ 1	$ 3	$ 66	$ 1,171	$ 39	$ 1,211	$ -	$ 1,276	$ 160	$ 255	$ 415			
Energy Star Homes	$ 2,831	$ 62	$ -	$ 62	$ 54	$ 57	$ 76	$ 24	$ 31	$ 8	$ 374	$ 1,890	$ 59	$ 1,949	$ 3	$ 2,327	$ 272	$ 232	$ 505			
Home Performance with Energy Star	$ 2,080	$ 5	$ -	$ 14	$ 12	$ 26	$ 22	$ 9	$ 8	$ 7	$ 103	$ 1,433	$ 50	$ 1,484	$ 143	$ 1,731	$ 190	$ 159	$ 349			
Energy Star Products	$ 1,840	$ -	$ -	$ -	$ -	$ 57	$ 52	$ 1	$ 1	$ 6	$ 116	$ 1,353	$ 52	$ 1,404	$ -	$ 1,520	$ 168	$ 152	$ 320			
Home Energy Reports	$ 294	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 231	$ 19	$ 250	$ -	$ 250	$ 19	$ 25	$ 44			
Sub-Total Residential	**$ 8,736**	**$ 67**	**$ -**	**$ 76**	**$ 66**	**$ 172**	**$ 179**	**$ 34**	**$ 40**	**$ 24**	**$ 659**	**$ 6,078**	**$ 219**	**$ 6,297**	**$ 147**	**$ 7,103**	**$ 810**	**$ 823**	**$ 1,633**			
Commercial, Industrial & Municipal																						
Large Business Energy Solutions	$ 8,611	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,703	$ 295	$ 6,998	$ -	$ 6,998	$ 914	$ 700	$ 1,613			
Small Business Energy Solutions	$ 3,905	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,033	$ 120	$ 3,153	$ -	$ 3,153	$ 437	$ 315	$ 752			
Education	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			
Sub-Total Commercial, Industrial & Municipal	**$ 12,516**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 9,735**	**$ 415**	**$ 10,150**	**$ -**	**$ 10,150**	**$ 1,350**	**$ 1,015**	**$ 2,365**			
Total	**$ 21,252**	**$ 67**	**$ -**	**$ 76**	**$ 66**	**$ 172**	**$ 179**	**$ 34**	**$ 40**	**$ 24**	**$ 659**	**$ 15,814**	**$ 634**	**$ 16,447**	**$ 147**	**$ 17,253**	**$ 2,160**	**$ 1,838**	**$ 3,999**			

Performance Incentive Calculation - 2020 Plan

Row	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime MMBtu Savings	2,408,424	*1,806,318*	-	-	2.475%	-	$ 215,885	$ 269,856	-	Program Cost Effectiveness (Page 1 of 3)
2	Annual MMBtu Savings	147,422	*110,566*	-	-	1.100%	-	$ 95,949	$ 119,936	-	Program Cost Effectiveness (Page 1 of 3)
3	Total Resource Benefits	$ 17,253,478		-	-						Present Value Benefits (Page 2 of 3)
4	Total Utility Costs[1]	$ 8,722,615		-	-						Program Cost Effectiveness (Page 1 of 3)
5	Net Benefits	$ 8,530,863	*$ 6,398,147*	-	-	1.925%		$ 167,910	$ 209,888	-	Line 5 minus line 6
6	**Total**					**5.500%**	**-**	**$ 479,744**	**$ 599,680**	**-**	Sum of Rows 1, 2 & 5

Row	Portfolio	Total Resource Cost Test Planned	Total Resource Cost Test Actual	Source
7	Total Benefits	$ 21,252,105	-	Present Value Benefits (Page 2 of 3)
8	Performance Incentive	$ 479,744	-	Row 6
9	Participant Costs	$ 6,501,354	-	Program Cost Effectiveness (Page 1 of 3)
10	Total Utility Costs	$ 8,722,615	-	Row 4
11	**Total Resource Benefit / Cost Ratio**	**1.35**	**-**	Row 7 Divided by Rows 8+9+10

All dollar values are expressed in 2020 dollars.

[1]In order to avoid circular reference in the calculation of the Performance Incentive (PI), "Total Utility Costs" does not include the value of the PI.

Liberty Utilities Gas Home Energy Assistance Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Thermostat - Standard, 7-Day Programmable	84	23	112	19	19	19	15	15	15	87%	87%	20,621	5,663	27,481	3	4	3	98%	98%	3,754	1,470	5,003
Multifamily weatherization	142	49	165	171	66	115	22	19	20	87%	87%	458,636	50,319.56	338,285	10	36	13	98%	98%	29,088	33,032	41,900
Single Family weatherization	120	90	137	216	220	277	21	20	21	87%	87%	465,360	155,338	676,958	42	38	39	98%	98%	102,261	67,315	107,583
Boiler - NG Boiler Replacement AFUE>=90%	19	11	23	142	142	142	20	20	20	87%	87%	47,385	26,911	55,836	19	19	19	100%	100%	7,450	4,231	8,778
Furnace - NG Furnace Replacement AFUE>=90%	19	10	23	162	162	162	18	18	18	87%	87%	48,653	25,340	57,330	19	19	19	100%	100%	6,425	3,346	7,571
Program Summary*				**49,935**	**13,069**	**57,179**						**1,040,654**	**266,644**	**1,155,890**	**7,252**	**5,636**	**8,460**			**148,978**	**109,394**	**170,836**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings based on recent trends and reflect expected project sizes.
2. US DOE WAP Collaboration: The federal Weatherization Assistance Program is expected to fund additional work and achieve additional MMBTU Savings.
3. For gas heated homes, customer may be served by both gas and electric utilities in this program, but gas companies will pay for the weatherization project up to their cap first and will claim associated MMBTU savings.

Liberty Utilities Gas Home Performance with ENERGY STAR®

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Single Family Weatherization	189	123	149	-	100	-	21	22	22	100%	100%	-	242,850	-	29	38	40	100%	100%	115,013	100,496	129,165
Multi Family Weatherization	-	11	-	-	-	-	21	24	22	100%	100%	-	-	-	-	40	-	100%	100%	-	10,496	-
Thermostat - Standard, 7-Day Programmable	66	32	31	-	6	-	15	15	15	100%	100%	-	2,964	-	6	5	6	100%	100%	5,631	2,415	2,661
Baseload Audit - Thermal Savings	320	310	500	-	-	-	14	8	14	100%	100%	-	-	-	8	10	11	100%	100%	34,781	26,425	78,651
Baseload Audit - Electric Savings	320	310	500	322	292	335	5	3	5	100%	100%	515,647	307,924	837,925	-	-	-	100%	100%	-	-	-
Electric Measures	189	123	149	88	107	75	20	16	21	100%	100%	336,310	211,479	228,908	-	0	-	100%	100%	-	722	-
Program Summary*				**119,725**	**116,260**	**178,695**						**851,956**	**765,217**	**1,066,833**	**8,248**	**8,527**	**11,856**			**155,424**	**140,554**	**210,477**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings based on recent trends and reflect expected project sizes.

Liberty Utilities Gas ENERGY STAR® Homes

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Single-Family	19	20	6	1,892	421	1,437	25	25	25	100%	100%	907,576	210,265	215,562	34	58	54	100%	100%	16,446	29,102.50	8,110
Multi-Family	50	58	400	80	462	400	25	25	22	100%	100%	99,356	373,469.55	3,546,491	19	21	31	100%	100%	23,122	30,474	275,087
Program Summary*				**40,277**	**35,233**	**168,486**						**1,006,932**	**583,735**	**3,762,052**	**1,583**	**2,385**	**12,724**			**39,568**	**59,576**	**283,198**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings based on recent trends and reflect expected project sizes.

Liberty Utilities Gas ENERGY STAR® Products Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Water Heater - Indirect (attached to ES FHW Boiler; Comb	65	36	-	-	-	-	20	20	20	100%	100%	-	-	-	8	8	4	100%	89.00%	10,400	5,760	-
Condensing Boiler w/On-Demand DHW >= 90% AFUE	100	4	10	-	-	-	19	19	19	100%	100%	-	-	-	10	10	10	100%	89%	19,570	783	1,742
Condensing Boiler w/On-Demand DHW >= 95% AFUE	85	168	185	-	-	-	19	19	19	100%	100%	-	-	-	13	13	13	100%	100%	20,672	40,858	44,992
Water Heater - Tankless, On-Demand >=.94	178	96	-	-	-	-	19	19	19	100%	100%	-	-	-	10	10	10	100%	100%	33,482	18,058	-
Boiler Reset Controls	-	2	2	-	-	-	15	15	15	100%	100%	-	-	-	5	5	5	100%	100%	-	135	153
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	81	32	35	-	-	-	18	18	18	100%	100%	-	-	-	11	11	12	100%	100%	16,621	6,566	7,623
Condensing Boiler >= 95% AFUE (Up to 300 MBH)	115	51	99	-	-	-	19	19	19	100%	100%	-	-	-	14	14	15	100%	100%	30,809	13,663	27,894
Furnace 95+ AFUE (<150) w/ECM Motor	146	112	130	168	168	168	17	17	17	100%	100%	415,671	319,872	371,280	8	8	10	100%	100%	20,041	15,422	21,658
Furnace 97+ AFUE (<150) w/ECM Motor	100	74	90	168	168	168	17	17	17	100%	100%	285,600	211,344	257,040	9	9	10	100%	100%	15,640	11,574	15,759
Heat Recovery Ventilator (-133 kWh penalty)	4	-	2	(133)	(133)	(133)	20	20	20	100%	100%	(10,640)	-	(5,320)	8	8	8	100%	100%	616	-	308
Thermostat - Standard, 7-Day Programmable	120	95	110	-	-	-	15	15	15	100%	100%	-	-	-	3	3	4	100%	100%	5,760	4,560	5,775
Thermostat - WiFI (Cooling & Heating)	60	-	-	104	104	104	15	15	15	100%	100%	93,600	-	-	7	7	7	100%	100%	5,940	-	-
Thermostat - WiFi (Heating Only)	640	4,354	1,350	-	-	64	15	15	15	100%	100%	-	-	1,296,000	7	7	3	100%	100%	63,360	431,046	62,978
Program Summary*				**46,959**	**31,248**	**123,094**						**784,231**	**531,216**	**1,919,000**	**14,079**	**35,151**	**11,161**			**242,911**	**548,424**	**188,881**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Liberty Utilities Gas Home Energy Reports Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Behavioral Savings	38,000	38,000	27,594	-	-	-	3.9	3.7	3.7	100%	100%	-	-	-	0.20	0.21	0.27	100%	100%	28,860	30,027	27,346
Program Summary*				**-**	**-**	**-**						**-**	**-**	**-**	**7,480**	**8,116**	**7,438**			**28,860**	**30,027**	**27,346**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual MMBtu Savings developed with program implementation support vendor

Liberty Utilities Gas Large Business Energy Solutions Programs

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	-	2	-	-	-	-	25	25	25	100%	100%	-	-	-	15	15	15	102%	100%	-	750	-
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	3	2	4	-	-	-	25	25	25	100%	100%	-	-	-	95	95	95	102%	100%	7,236	4,824	9,450
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	3	-	4	-	-	-	25	25	25	100%	100%	-	-	-	165	165	165	102%	100%	12,658	-	15,799
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	3	6	4	-	-	-	25	25	25	100%	100%	-	-	-	28	28	28	102%	100%	2,144	4,288	2,800
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	3	-	4	-	-	-	25	25	25	100%	100%	-	-	-	51	51	51	102%	100%	3,936	-	5,140
Infrared Heater, Low Intensity (all sizes)	20	2	4	-	-	-	17	17	17	100%	100%	-	-	-	12	12	12	102%	100%	4,166	417	816
Steam Trap	400	326	350	-	-	-	6	6	6	100%	100%	-	-	-	12	26	12	91%	91%	25,089	43,074	21,954
Kitchen - Convection Oven (>= 44% efficiency)	-	2	3	-	-	-	12	12	12	100%	100%	-	-	-	13	13	36	102%	100%	-	316	1,285
Kitchen - Conveyor Oven (>= 44% efficiency)	-	1	3	-	-	-	12	12	12	100%	100%	-	-	-	88	88	88	102%	100%	-	1,083	3,182
Kitchen - Fryer	-	3	4	-	-	-	12	12	12	100%	100%	-	-	-	51	51	78	102%	100%	-	1,867	3,758
Large Business Custom	45	24	42	-	2,600	-	13	15	16	100%	100%	-	623,990	-	1,240	1,922	1,539	91%	91%	659,106	642,671	972,929
Program Summary*				**-**	**623,990**	**-**						**0**	**623,990**	**0**	**56,641**	**50,500**	**65,052**			**714,335**	**699,292**	**1,037,113**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings based on recent trends and reflect expected project sizes.
2. Approximate number of Steam Traps per project is 17

Liberty Utilities Gas Small Business Energy Solutions Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Aerator	150	1,913	400	-	-	-	10	10	10	100%	100%	-	-	-	2	2	2	100%	100%	2,552	32,521	6,800
Salon Sprayer	100	2	10	-	-	-	5	5	5	100%	100%	-	-	-	13	13	11	100%	100%	6,600	132	570
Shower Head	20	744	150	-	-	-	10	10	10	100%	100%	-	-	-	3	3	3	100%	100%	530	19,716	3,975
Shower Head Hand Handle	10	39	40	-	-	-	10	10	10	100%	100%	-	-	-	3	3	3	100%	100%	265	1,034	1,060
Water Heater - Storage >=75 MBTUH, 90% TE	68	21	30	-	-	-	15	15	15	100%	100%	-	-	-	23	23	25	100%	100%	23,511	7,261	11,070
Water Heater - Indirect (attached to ES FHW Boiler; Combined eff rating	62	15	5	-	-	-	15	15	15	100%	100%	-	-	-	19	19	19	100%	100%	17,670	4,275	1,425
Condensing Boiler w/On-Demand DHW >= 90% AFUE	3	1	-	-	-	-	20	20	20	100%	100%	-	-	-	25	25	25	100%	100%	1,476	492	-
Condensing Boiler w/On-Demand DHW >= 95% AFUE	3	2	-	-	-	-	20	20	20	100%	100%	-	-	-	31	31	31	100%	100%	1,830	1,220	-
Water Heater - Volume >=75 MBTUH, 92% TE	25	8	9	-	-	-	15	15	15	100%	100%	-	-	-	234	234	258	100%	100%	87,630	28,042	34,790
Water Heater - Tankless, <200 MBTUH, EF >=94%	156	7	7	-	-	-	20	20	20	100%	100%	-	-	-	9	9	20	100%	100%	27,768	1,246	2,786
Boiler Reset Controls	1	-	-	-	-	-	15	15	15	100%	100%	-	-	-	11	11	11	100%	100%	171	-	-
Condensed Unit Heater >= 90% thermal efficiency (up to 300 MBH)	-	2	-	-	-	-	18	18	18	100%	100%	-	-	-	41	28	41	100%	100%	-	1,001	-
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	30	27	10	-	-	-	25	25	25	100%	100%	-	-	-	15	21	15	100%	100%	11,025	13,898	3,675
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	5	-	7	-	-	-	25	25	25	100%	100%	-	-	-	95	95	95	100%	100%	11,813	-	16,538
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	8	7	9	-	-	-	25	25	25	100%	100%	-	-	-	165	294	165	100%	100%	32,137	51,403	37,193
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	8	20	9	-	-	-	25	25	25	100%	100%	-	-	-	28	38	28	100%	100%	5,600	18,960	6,300
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	8	19	10	-	-	-	25	25	25	100%	100%	-	-	-	51	78	51	100%	100%	10,280	36,993	12,850
Condensing Boiler >= 96% AFUE (Up to 300 MBH)	-	5	-	-	-	-	25	25	25	100%	100%	-	-	-	18	28	18	100%	100%	-	3,475	-
Furnace 95+ AFUE (<150) w/ECM Motor	-	10	10	168	168	-	18	18	18	100%	100%	-	30,240	-	6	6	6	100%	100%	-	1,026	1,026
Furnace 97+ AFUE (<150) w/ECM Motor	-	-	5	168	168	-	18	18	18	100%	100%	-	-	-	7	7	7	100%	100%	-	-	603
Infrared Heater, Low Intensity (all sizes)	24	46	25	-	-	-	17	17	17	100%	100%	-	-	-	12	12	12	100%	100%	4,896	9,384	5,100
Kitchen - Pre Rinse Sprayers	70	170	170	-	-	-	8	8	8	100%	100%	-	-	-	11	11	11	100%	100%	6,384	15,504	15,508
Steam Trap	20	-	-	-	-	-	6	6	6	100%	100%	-	-	-	12	12	8	100%	100%	1,464	-	-
Thermostat - WiFI (Cooling & Heating)	100	-	-	-	-	-	15	15	15	100%	100%	-	-	-	7	7	4	100%	100%	9,900	-	-
Thermostat - WiFi (Heating Only)	-	-	120	-	-	-	15	15	15	100%	100%	-	-	-	7	7	4	100%	100%	-	-	6,300
Kitchen - Combination Oven (>= 44% efficiency)	-	-	1	-	-	-	12	12	12	100%	100%	-	-	-	112	112	110	100%	100%	-	-	1,324
Kitchen - Convection Oven (>= 44% efficiency)	5	3	25	-	-	-	12	12	12	100%	100%	-	-	-	13	13	36	100%	100%	774	464	10,710
Kitchen - Conveyor Oven (>= 44% efficiency)	-	2	1	-	-	-	12	12	12	100%	100%	-	-	-	88	88	88	100%	100%	-	2,122	1,061
Kitchen - Fryer	5	7	24	-	-	-	12	12	12	100%	100%	-	-	-	51	51	78	100%	100%	3,048	4,267	22,550
Kitchen - Griddle	-	-	3	-	-	-	12	12	12	100%	100%	-	-	-	13	13	38	100%	100%	-	-	1,364
Kitchen - Rack Oven (>= 50% efficiency)	2	-	1	-	-	-	12	12	12	100%	100%	-	-	-	211	211	211	100%	100%	5,071	-	2,536
Kitchen - Steamer (ES >= 38% efficiency)	-	3	2	-	-	-	12	12	12	100%	100%	-	-	-	105	105	371	100%	100%	-	3,794	8,897
Thermostat - Standard, 7-Day Programmable	-	389	300	-	-	-	-	15	15	100%	100%	-	-	-	-	3	4	100%	100%	-	18,672	15,750
Small Business Custom	33	80	120	-	1,268	-	13	20	17	100%	100%	-	1,070,770	-	520	217	128	100%	100%	224,158	224,203	260,104
Program Summary*				**-**	**66,362**	**-**						**0**	**1,101,010**	**0**	**34,790**	**28,935**	**30,789**			**496,553**	**501,103**	**491,863**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Planning Assumptions

1. Annual Savings based on recent trends and reflect expected project sizes.
2. Approximate number of Steam Traps per project is 17
3. Approximate number of Aerators per multifamily project is 166

REDACTED

STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

Docket No. DG 19-XXX

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Winter 2019/2020 Cost of Gas Filing
Summer 2020 Cost of Gas Filing

DIRECT TESTIMONY

OF

DAVID B. SIMEK

AND

CATHERINE A. MCNAMARA

September 3, 2019

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I. INTRODUCTION

Q. Please state your full name and business address.

A. (DS) My name is David B. Simek. My business address is 15 Buttrick Road, Londonderry, New Hampshire.

(CM) My name is Catherine A. McNamara. My business address is 15 Buttrick Road, Londonderry, New Hampshire.

Q. Please state by whom you are employed.

A. We are employed by Liberty Utilities Service Corp. ("Liberty"), which provides service to Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities ("EnergyNorth" or the "Company").

Q. Please describe your educational background and your business and professional experience.

A. (DS) I graduated from Ferris State University in 1993 with a Bachelor of Science in Finance. I received a Master's of Science in Finance from Walsh College in 2000. I also received a Master's of Business Administration from Walsh College in 2001. In 2006, I earned a Graduate Certificate in Power Systems Management from Worcester Polytechnic Institute. In August 2013, I joined Liberty as a Utility Analyst and I was promoted to Manager, Rates and Regulatory Affairs in August 2017. Prior to my employment at Liberty, I was employed by NSTAR Electric & Gas ("NSTAR") as a Senior Analyst in Energy Supply from 2008 to 2012. Prior to my position in Energy

Supply at NSTAR, I was a Senior Financial Analyst within the NSTAR Investment Planning group from 2004 to 2008.

(CM) I graduated from the University of Massachusetts, Boston, in 1993 with a Bachelor of Science in Management with a concentration in Accounting. In November 2017, I joined Liberty as an Analyst in Rates and Regulatory Affairs. Prior to my employment at Liberty, I was employed by Eversource as a Senior Analyst in the Investment Planning group from 2015 to 2017. From 2008 to 2015, I was a Supervisor in the Plant Accounting department. Prior to my position in Plant Accounting, I was a Financial Analyst/General Ledger System Administrator within the Accounting group from 2000 to 2008.

Q. Have you previously testified in regulatory proceedings before the New Hampshire Public Utilities Commission (the "Commission")?

A. (DS) Yes. I have testified on numerous occasions before the Commission.

(CM) Yes. I have testified on multiple occasions before the Commission.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is to explain the Company's proposed firm sales cost of gas rates for the 2019/2020 Winter (Peak) Period and the Company's proposed 2019/2020 Local Delivery Adjustment Clause, both effective November 1, 2019. Our testimony also explains the Company's proposed firm sales cost of gas rates for the 2020 Summer (Off-Peak) Period.

II. WINTER 2019/2020 COST OF GAS FACTOR

Q. What are the proposed firm Winter sales and firm transportation cost of gas rates?

A. The Company proposes a firm sales cost of gas rate of $0.6203 per therm for residential customers, $0.6190 per therm for commercial/industrial high winter use customers, and $0.6258 per therm for commercial/industrial low winter use customers as shown on Proposed Sixth Revised Page 92 (Bates 049). The Company proposes a firm transportation cost of gas rate of $0.0009 per therm as shown on Proposed Third Revised Page 94 (Bates 051).

Q. Please explain tariff page and Proposed Sixth Revised Page 92 (Bates 049).

A. Proposed Sixth Revised Page 92 contains the calculation of the 2019/2020 Winter Period Cost of Gas Rate and summarize the Company's forecast of firm gas costs and firm gas sales. As shown on Page 92, the proposed 2019/2020 Average Cost of Gas of $0.6203 per therm is derived by adding the Direct Cost of Gas Rate of $0.5947 per therm to the Indirect Cost of Gas Rate of $0.0256 per therm. The estimated total Anticipated Direct Cost of Gas, derived on Page 92, is $52,211,274. The estimated Indirect Cost of Gas, also derived on Page 92, is $2,251,330. The Direct Cost of Gas Rate of $0.5947 and the Indirect Cost of Gas Rate of $0.0256 are determined by dividing each of these total cost figures by the projected winter period firm sales volumes of 87,788,508 therms.

To calculate the total Anticipated Direct Cost of Gas, the Company adds a list of allowable adjustments from deferred gas cost accounts to the projected demand and commodity costs for the winter period supply portfolio. These allowable adjustments,

shown on Page 92.1 (Bates 050), total $275,601. These adjustments are added to the Unadjusted Anticipated Cost of Gas of $51,935,672 to determine the Total Anticipated Direct Cost of Gas of $52,211,274.

Q. What are the components of the Unadjusted Anticipated Cost of Gas?

A. The Unadjusted Anticipated Cost of Gas shown on Proposed Original Page 92.1 consists of the following components:

1.	Purchased Gas Demand Costs	$10,157,458
2.	Purchased Gas Commodity Costs	34,260,417
3.	Storage Demand and Capacity Costs	902,742
4.	Storage Commodity Costs	4,281,375
5.	Produced Gas Cost	2,333,680
	Total	$51,935,672

Q. What are the components of the allowable adjustments to the Cost of Gas?

A. The allowable adjustments to gas costs, listed on Proposed Original Page 92.1, are as follows:

1.	Deferred Gas Cost Prior Period Under Collection	$1,912,210
2.	Interest	(81,952)
3.	Fuel Inventory Revenue Requirement	351,641
4.	Broker Revenues	(30,924)
5.	Transportation COG Revenue	(44,891)
6.	Capacity Release Margin	(1,875,483)
7.	Fixed Price Administrative Cost	45,000
	Total Adjustments	$275,601

These allowable adjustments are standard adjustments made to the deferred gas cost balance through the operation of the Company's cost of gas adjustment clause. We discuss the factors contributing to the prior period under collection later in this testimony.

Q. How does the proposed average cost of gas rate in this filing compare to the average cost of gas rate approved by the Commission in Docket No. DG 18-137 for the 2018/2019 Winter Period?

A. The average cost of gas rate proposed in this filing of $0.6203 per therm is $0.1208 per therm less than the initial rate of $0.7411 per therm approved by the Commission in Order No. 26,188 (November 1, 2018) in Docket No. DG 18-137. The $0.1208 per therm decrease in the rate reflects an $8,411,494 decrease in the Total Unadjusted Direct Cost of Gas Cost of Gas.

Q. How does the proposed firm transportation winter cost of gas rate compare to the rate approved by the Commission for the 2018/2019 winter period?

A. The proposed firm transportation winter cost of gas rate is $0.0009 per therm (Bates 051). The rate approved in Docket No. DG 18-137 was $0.0005 per therm. The increase in the rate relates primarily to an estimated $30,335 increase in costs due to the difference between the winter season 2018/2019 beginning balance of $59,496 (an over-collection) and the winter season 2019/2020 beginning balance of $29,161 (an over-collection).

Q. In the calculation of its firm transportation winter cost of gas rate, has the Company updated the estimated percentage used for pressure support purposes?

A. No. The Company used, for pressure support purposes, a rate of 8.7% based on the marginal cost study used for the rate design approved in Docket No. DG 17-048.

Q. Did the Company include a fuel inventory revenue requirement calculation in this filing?

A. Yes (Bates 199). The Company is proposing to collect $351,641 in fuel inventory revenue requirement consistent with Order No. 26,156 (July 10, 2018) in Docket No. DG 17-048. The impact of this amount to the overall Cost of Gas rate is $0.0040 per therm which is determined by dividing the $351,641 by the estimated November 2019 through October 2020 COG sales volumes of 87,788,508 therms.

Q. How was the statutory tax rate of 27.08% calculated (Bates 199)?

A. The statutory rate of 27.08% was calculated by using a 21% federal tax rate and a 7.7% tax rate for the State of New Hampshire (0.21 + 0.077 – (0.21 x 0.077) = 0.27083).

Q. How was the common equity pre-tax rate of 6.280% calculated (Bates 199)?

A. The common equity pre-tax rate of 6.280% was calculated by dividing the 9.30% rate of return on common equity, approved in Docket No. DG 17-048, by 0.72917 (1 – 0.27083) [statutory tax rate – see previous question]) and multiplied by 49.20% (equity component of the capital structure approved in DG 17-048) [0.093 / 0.72917 x 0.4920 = 0.0628].

Q. Has the bad debt percentage in this filing of 1.11% changed from the bad debt percentage calculated in the Winter 2018/2019 Cost of Gas Reconciliation?

A. Yes, the bad debt percentage of 1.11% used in this filing is the calculated rate for the period of May 2018–April 2019. This is a $0.59 decrease from the calculated rate filed in the Winter 2018/2019 COG filing of 1.70%.

Q. What was the actual weighted average firm sales cost of gas rate for the 2018/2019 winter period?

A. The weighted average cost of gas rate was $0.6633 per therm (Bates 092 Line 54). This was calculated by applying the actual monthly cost of gas rates for November 2018 through April 2019 to the monthly therm usage of an average residential heating customer using 809 therms per year, or 666 therms for the six winter period months.

III. PRIOR WINTER PERIOD UNDER-COLLECTION

Q. Please explain the prior period under collection of $1,912,210.

A. The prior period under-collection is detailed in the 2018/2019 Winter Period Reconciliation that was filed with the Commission on August 22, 2019. The $1,912,210 under-collection is the sum of the deferred gas cost, bad debt, and working capital over- and under-collection balances as of April 30, 2019. The under-collection was driven mainly by the lag in the timing of monthly cost of gas rate adjustments as compared to changes in the underlying costs.

IV. FIXED PRICE OPTION

Q. Has the Company established a winter period fixed price pursuant to its Fixed Price Option Program?

A. Yes. Pursuant to Order No. 24,515 in Docket No. DG 05-127, the Fixed Price Option Program ("FPO") rates are set at $0.0200 per therm higher than the initial proposed COG rate. Proposed Second Revised Page 91 (Bates 048) contains the FPO rate for the 2019/2020 Winter period, which is $0.6403 per therm for residential customers. This

compares to the FPO rate approved for the 2018/2019 winter period of $0.7611 per therm for residential customers. This represents a $0.1208 per therm, or 15.8% decrease in the residential FPO rate. The total bill impact on the winter period bills for an average FPO heating customer using 666 therms is a decrease of approximately $82.11 or 16.2% compared to last winter. The total bill impact reflects the overall rates in effect following implementation of the increases approved in Docket No. DG 19-054, effective July 1, 2019, relating to the cast iron/bare steel main replacement program. The estimated winter period bill for an average residential heating customer opting for the FPO would be approximately $13.32 (or 1.45%) higher than the bill under the proposed cost of gas rates, assuming no monthly adjustments to the COG rate during the course of the winter. Schedule 23 (Bates 196) contains the historical results of the FPO program.

V. LOCAL DELIVERY ADJUSTMENT CLAUSE ("LDAC")

Q. What are the surcharges that will be billed under the LDAC?

A. As shown on Proposed Second Revised Page 97 (Bates 054), the Company is submitting for approval an LDAC of $0.0635 per therm for the residential non-heating class and residential heating class, and $0.0494 per therm for the commercial/industrial bundled sales classes, effective November 1, 2019. The surcharges proposed to be billed under the LDAC are the Energy Efficiency Charge, the Revenue Decoupling Adjustment Factor, the Energy Efficiency Resource Standard Lost Revenue Adjustment Mechanism, the Environmental Surcharge for Manufactured Gas Plant ("MGP") remediation, the Residential Low Income Assistance Program charge, and the rate case expense reconciliation surcharge from Docket No. DG 17-048.

Q. Which customers are billed an LDAC?

A. All EnergyNorth customers including those in Keene are billed an LDAC charge. When calculating the LDAC charge, the November 1, 2019, through October 31, 2020, forecasted Keene therm sales of 1,542,677 are added to the EnergyNorth therm sales forecast of 185,636,009 for a total therm sales forecast of 187,178,686 (slightly off due to rounding).

Q. Please explain the Energy Efficiency Charge.

A. The Energy Efficiency Charge is designed to recover the projected expenses associated with the Company's energy efficiency programs for Calendar Year 2019 that will be filed with the Commission in the near future. In the calculation of the Energy Efficiency Charge, the Company has also included the projected prior period under-recovery of the Company's residential and commercial energy efficiency programs as of October 2019. As shown on Schedule 19 Energy Efficiency (Bates 132-134), the proposed Energy Efficiency charge is $0.0640 per therm for Residential customers and $0.0426 per therm for commercial and industrial customers.

Q. Please explain the Revenue Decoupling Adjustment Factor ("RDAF").

A. This is the initial calculation of the RDAF since the implementation of decoupling on November 1, 2019. The purpose of the RDAF is to recover or refund, on an annual basis, the difference between the Actual Base Revenue per Customer and the Benchmark Base Revenue per Customer. While in the process of preparing the necessary calculations, it was discovered that with respect to low-income customers the formulas approved in the

Company's tariff to calculate the Actual Base Revenue per Customer and the Benchmark Base Revenue per Customer do not use the same basis between the two formulas to calculate the revenue per customer. The approved Benchmark Base Revenue per Customer calculation uses low income residential heating revenue (rate R-4) in the calculation while the Actual Base Revenue per Customer calculation uses the residential heating rate (rate R-3) to calculate the rate R-4 revenue. In other words, the formulas in the tariff use the R-4 rate to calculate the benchmark R-4 revenue per customer and use the R-3 rate to calculate the actual R-4 revenue per customer. Schedule 19 RDAF (Bates 118-123) shows the proposed Actual Base Revenue per Customer and the Benchmark Base Revenue per Customer calculation of a total over-collection of $4,691,932 effective November 1, 2019, through October 31, 2020. In that calculation, the Company has aligned the Base Revenue per Customer and Benchmark Revenue per Customer calculations related to low income customers. Schedule 19 RDAF (Bates 124–129) shows the Actual Base Revenue per Customer and the Benchmark Base Revenue per Customer calculation reflecting the current language in the tariff, which results in a total over-collection of $6,642,895 effective November 1, 2019, through October 31, 2020, based on the formulas in the Company's tariff.

Q. What would be the effect of using the calculation based on the current tariff language?

A. The net effect would be that the dollars collected to recover the costs of the low-income program would effectively be returned to customers through the RDAF mechanism.

Q. Please explain the Energy Efficiency Resource Standard Lost Revenue Adjustment Mechanism ("LRAM").

A. As shown on Schedule 19 LRAM (Bates 116–117), the proposed LRAM charge is $0.0001 per therm for residential customers and $0.0001 per therm for commercial and industrial customers. It is designed to recover lost revenues associated with energy efficiency measures installed under the EERS programs. Since the Company implemented decoupling effective November 1, 2019, the Company will continue to implement its Lost Revenue Adjustment only as a prior period true-up mechanism effective November 1, 2019, and ending October 31, 2020.

Q. What is the proposed Residential Low Income Assistance Program ("RLIAP") charge?

A. As shown on Schedule 19 RLIAP (Bates 130–131), the proposed RLIAP charge is $0.0123 per therm. It is designed to recover administrative costs, revenue shortfall, and the prior period reconciliation adjustment relating to this program. For the 2019/2020 Winter Period, the Company is providing a 60% base rate discount, consistent with the settlement agreement approved by the Commission in Order No. 24,669 (Sept. 22, 2006) in Docket No. DG 06-120. The proposed RLIAP charge is designed to recover $2,307,356, of which $1,861,760 is for the revenue shortfall resulting from 5,932 customers receiving a 60% discount off their base rates, and $445,596 for the prior year reconciling adjustment.

Q. In Order No. 24,824 (Feb. 29, 2008) in Docket No. DG 06-122 relating to short-term debt issues, the Company agreed to adjust its short-term debt limits each year as part of the Company's Winter Period Cost of Gas filing. Did the Company calculate the short-term debt limit for fuel and non-fuel purposes in accordance with this settlement?

A. Yes, the Company included in Schedule 24 (Bates 197) the short-term debt limit for fuel and non-fuel purposes for the 2019/20 period. As shown, the short-term debt limit for fuel inventory financing for the period November 1, 2019, through October 31, 2020, is calculated to be $16,338,781 and the limit for non-fuel purposes is calculated to be $99,644,640.

Q. Has the Company updated the Environmental Surcharge (Tariff Page 95)?

A. Yes, it has. The costs submitted for recovery through the MGP remediation cost recovery mechanism, as well as the third party recoveries, are included in the Environmental Cost Summary in Schedule 20 (Bates 135) of this filing. The environmental investigation and remediation costs that underlie these expenses are the result of efforts by the Company to respond to its legal obligations with regard to these sites, as described by Ms. Casey in her pre-filed direct testimony in this proceeding and as set forth in the MGP site summaries included in this filing under Schedule 20. The Summary included in Schedule 20 shows the remediation cost pools for the Concord Pond, Concord MGP, Manchester, Nashua, and Laconia sites, and a General Pool for costs that cannot be directly assigned to a specific site.

A summary sheet and detailed backup spreadsheets that support the 2018/2019 costs are provided in Schedule 20 of this filing. Ms. Casey's testimony describes the Company's activities with regard to all five sites.

Q. Please describe how the Company calculated the Environmental Surcharge included in this filing.

A. The proposed Manufactured Gas Plant Remediation surcharge for the period beginning November 1, 2019, and ending October 31, 2020, is $0.0153 per therm. Consistent with filings made over the past few years, this surcharge will recover a total of $2,860,522 in amortized remediation costs. The costs submitted for recovery are shown in the Environmental Cost Summary included in Schedule 20 of this filing. This surcharge has not included recovery of any beginning balance transferred over from National Grid when the Company was acquired by Liberty Energy Utilities Corp. in Docket No. DG 11-040 nor has the surcharge included any actual to forecast true-up refund or recovery since the acquisition as provided for in the Company's tariff. The Company is planning to submit an environmental reconciliation to PUC audit staff for review and opinion by January 15, 2020. Audit Staff findings will be addressed in the Winter 2020/2021 COG filing.

Q. Did the Company include a Rate Case Expense (RCE) surcharge in this filing?

A. Yes. As shown on Schedule 19 RCE (Bates 114–115), the Company is proposing to collect $309,225 in uncollected rate case and recoupment expense consistent with Order No. 26,122 (April 27, 2018) in Docket No. DG 17-048. The RCE rate of $0.0017 per

therm is determined by dividing the $309,225 by the estimated November 2019 through October 2020 sales volumes of 187,178,686 therms.

Q. Has the Company also updated its Company Allowance percentage for the period November 2019 through October 2020 in accordance with Section 8 of the Company's Delivery Terms and Condition?

A. Yes, in Schedule 25 (Bates 198) the Company has recalculated its Company Allowance for the period November 2019 through October 2020. The Company calculated the Company Allowance of 1.92% based on sendout and throughput data for the twelve-month period ending June 2019. The Company proposes to apply this recalculated Company Allowance to all supplier deliveries beginning in November 2019.

VI. CUSTOMER BILL IMPACTS

Q. What are the estimated impacts of the proposed firm sales cost of gas rate and proposed LDAC surcharges on an average heating customer's winter bill as compared to the winter rates in effect last year?

A. The bill impact analysis is presented in Schedule 8 (Bates 092) of this filing. These bill impacts reflect the implementation of the increases approved in Docket No. DG 19-054 effective July 1, 2019, relating to the cast iron/bare steel main replacement program. The total bill impact over the winter period for an average residential heating customer is a decrease of approximately $24.76 or 2.6%. The total bill impact over the winter period for an average commercial/industrial G-41 customer is a decrease of approximately

$129.12, or 5.2% (Bates 093). Schedule 8 of this filing provides more detail of the impact of the proposed rate adjustments on heating customers.

VII. OTHER TARIFF CHANGES

Q. Is the Company updating its Delivery Terms and Conditions in the filing?

A. Yes. The Company is submitting Proposed Second Revised Page 147 (Bates 055) relating to Supplier Balancing and Peaking Demand Charges and Proposed Second Revised Page 148 (Bates 056) relating to Capacity Allocation.

Q. Please describe the changes to tariff Page 147.

A. In Proposed Second Revised Page 147, the Company is updating the Peaking Demand Charge from $20.41 per MMBtu of Peak MDQ to $18.12 per MMBtu of Peak MDQ. This calculation is also presented in Schedule 21 (Bates 187).

Q. Please describe the changes to tariff Page 148.

A. Proposed Second Revised Page 148 updates the Capacity Allocator percentages used to allocate pipeline, storage, and local peaking capacity to high and low load factor customers under the mandatory capacity assignment requirement for firm transportation service. Schedule 22 (Bates 190–195) contains the six-page worksheet that backs up the calculations for the updated allocators.

VIII. SUMMER 2020 COST OF GAS FACTOR

Q. What are the proposed 2020 summer firm sales cost of gas rates?

A. The Company proposes a firm sales cost of gas rate of $0.4520 per therm for residential customers, $0.4474 per therm for commercial/industrial high winter use customers, and $0.4591 per therm for commercial/industrial low winter use customers as shown on Proposed Eighth Revised Page 89 (Bates 205).

Q. Please explain tariff pages Proposed Third Revised Page 88 and Proposed Ninth Revised Page 89.

A. Proposed Third Revised Page 88 (Bates 204) and Proposed Ninth Revised Page 89 contain the calculation of the 2020 Summer Period Cost of Gas Rate and summarize the Company's forecast of firm gas sales, firm gas sendout, and gas costs. On Proposed Ninth Revised Page 89, the 2020 Average Cost of Gas of $0.4520 per therm is derived by adding the Direct Cost of Gas Rate of $0.4603 per therm to the Indirect Cost of Gas Rate of ($0.0083) per therm. The estimated total Anticipated Direct Cost of gas is $9,653,380 and the estimated Indirect Cost of Gas is ($174,652). The Direct Cost of Gas Rate and the Indirect Cost of Gas Rates are determined by dividing each of these total cost figures by the projected Summer firm sales volumes of 20,973,031 therms. Proposed Ninth Revised Page 89 further shows that the Residential Cost of Gas Rate of $0.4520 per therm is equal to the Average Cost of Gas for all firm sales customers. It also shows the calculation of the Commercial/Industrial High Winter Use Cost of Gas Rate of $0.4474 per therm and the Commercial/Industrial Low Winter Use Cost of Gas Rate of $0.4591 per therm.

The calculation of the Anticipated Direct Cost of Gas is shown on Proposed Third Revised Page 88. To derive the total Anticipated Direct Cost of Gas of $9,653,380, the Company starts with the Unadjusted Anticipated Cost of Gas of $7,685,193 and adds the Net Adjustment totaling $1,968,188.

Q. What are the components of the Unadjusted Anticipated Cost of Gas?

A. The Unadjusted Anticipated Cost of Gas consists of the following:

1. Purchased Gas Demand Costs	$4,548,346
2. Purchased Gas Supply Costs	3,114,165
3. Produced Gas Costs	22,682
Total Unadjusted Anticipated Cost of Gas	$7,685,193

Q. What are the components of the adjustments to the cost of gas?

A. The adjustments to gas costs, listed on proposed Third Revised Page 88, are as follows:

1. Prior Period (Over)/Under Collection	$1,885,446
2. Interest	82,742
Total Adjustments	$1,968,188

Q. How does the proposed average Residential Summer cost of gas rate in this filing compare to the initial cost of gas rate approved by the Commission for the 2020 Summer Period?

A. The cost of gas rate proposed in this filing is $0.0075 per therm higher than the initial rate approved by the Commission for the 2019 Summer Period ($0.4445 vs. $0.4520)

(Schedule 8, Bates 228). This increase is primarily due to a $1,268,403 estimated under-collection increase compared to the under-collection from the prior summer period.

Q. Does this conclude your testimony?

A. Yes, it does.

	Residential	
1	October 31, 2019 Projected Balance (LRAM true-up)	$3,971
2	Calculated Lost Distribution Revenue - November 2019 through October 2020	$0
3	Calculated Interest - November 2019 through October 2020	$65
4		
5	Total to be recovered	$4,036
6		
7	Estimated November 2019 - October 2020 Sales (therms)	65,525,887
8		
9	LRAM residential rate per therm November 2019 - October 2020	$0.0001
	Commercial & Industrial	
10	October 31, 2019 Projected Balance (LRAM true-up)	$9,158
11	Calculated Lost Distribution Revenue - November 2019 through October 2020	$0
12	Calculated Interest - November 2019 through October 2020	$169
13		
14	Total to be recovered	$9,327
15		
16	Estimated November 2019 - October 2020 Sales (therms)	121,652,799
17		
18	LRAM C&I rate per therm November 2019 - October 2020	$0.0001

Liberty Utilities (Energy North Natural Gas) Corp. d/b/a Liberty Uitilities
Lost Revenue Adjustment Factor (LRAM)
NOVEMBER 2019 THROUGH OCTOBER 2020
Lost Revenue Adjustment Mechanism

		(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	(Estimate)	
1	**FOR THE MONTH OF:**	**Nov-19**	**Dec-19**	**Jan-20**	**Feb-20**	**Mar-20**	**Apr-20**	**May-20**	**Jun-20**	**Jul-20**	**Aug-20**	**Sep-20**	**Oct-20**	**Total**
2	**DAYS IN MONTH**	**30**	**31**	**31**	**28**	**31**	**30**	**31**	**30**	**31**	**31**	**30**	**31**	
						RESIDENTIAL								
3	Beginning Balance (LRAM true-up)	$ 3,971	$ 3,721	$ 3,250	$ 2,570	$ 1,831	$ 1,201	$ 771	$ 521	$ 400	$ 332	$ 266	$ 168	**$ 19,002**
4														
5	Add: Lost Distribution Revenues	-	-	-	-	-	-	-	-	-	-	-	-	**-**
6														
7	Less: Lost Distribution Revenue Collections	(266)	(485)	(691)	(747)	(635)	(434)	(252)	(123)	(69)	(67)	(99)	(175)	**(4,043)**
8														
9	Add: Other	-	-	-	-	-	-	-	-	-	-	-	-	**-**
10														
11	Ending Balance Pre-Interest	$ 3,705	$ 3,236	$ 2,559	$ 1,824	$ 1,196	$ 767	$ 518	$ 398	$ 331	$ 265	$ 167	$ (7)	**$ 14,959**
12														
13	Month's Average Balance	$ 3,838	$ 3,478	$ 2,905	$ 2,197	$ 1,513	$ 984	$ 645	$ 459	$ 365	$ 299	$ 217	$ 81	
14														
15	Interest Rate	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	
16														
17	Interest Applied	$ 16	$ 14	$ 11	$ 7	$ 5	$ 3	$ 2	$ 2	$ 1	$ 1	$ 1	$ (0)	**65**
18														
19	Ending Balance	**$ 3,721**	**$ 3,250**	**$ 2,570**	**$ 1,831**	**$ 1,201**	**$ 771**	**$ 521**	**$ 400**	**$ 332**	**$ 266**	**$ 168**	**$ (7)**	
						COMMERCIAL & INDUSTRIAL								
3	Beginning Balance	$ 9,158	$ 8,461	$ 7,471	$ 6,158	$ 4,769	$ 3,552	$ 2,590	$ 1,945	$ 1,501	$ 1,167	$ 840	$ 474	**$ 48,086**
4														
5	Add: Lost Distribution Revenues	-	-	-	-	-	-	-	-	-	-	-	-	**-**
6														
7	Less: Lost Distribution Revenue Collections	(733)	(1,023)	(1,341)	(1,408)	(1,233)	(973)	(654)	(450)	(339)	(331)	(367)	(487)	**(9,339)**
8														
9	Add: Other	-	-	-	-	-	-	-	-	-	-	-	-	**-**
10														
11	Ending Balance Pre-Interest	$ 8,425	$ 7,438	$ 6,130	$ 4,750	$ 3,536	$ 2,579	$ 1,936	$ 1,494	$ 1,162	$ 836	$ 472	$ (12)	**$ 38,747**
12														
13	Month's Average Balance	$ 8,791	$ 7,950	$ 6,801	$ 5,454	$ 4,153	$ 3,066	$ 2,263	$ 1,720	$ 1,331	$ 1,001	$ 656	$ 231	
14														
15	Interest Rate	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	
16														
17	Interest Applied	$ 36	$ 33	$ 27	$ 19	$ 16	$ 11	$ 9	$ 6	$ 5	$ 4	$ 2	$ (0)	**169**
18														
19	Ending Balance	**$ 8,461**	**$ 7,471**	**$ 6,158**	**$ 4,769**	**$ 3,552**	**$ 2,590**	**$ 1,945**	**$ 1,501**	**$ 1,167**	**$ 840**	**$ 474**	**$ (12)**	

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Energy Efficiency Programs
For Residential Non-Heating and Heating Classes
November 1, 2019 - October 31, 2020
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over)/Under	Residential DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures		Incentive	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Monthly Federal Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over)/Under	Forecasted Residential Therm Sales	Residential Therm Sales	# of Days
						Residential	Low-Income									
May 19	Actual	(937,930)	($0.0287)	(120,310)	294,962	321,246	134,621	13,751	(588,621)	(763,276)	5.50%	(4,694)	(593,315)	4,095,234	4,213,465	31
June 19	Actual	(593,315)	($0.0287)	(65,711)	294,962	138,113	13,713	13,751	(493,449)	(543,382)	5.50%	(4,097)	(497,546)	1,981,666	1,785,463	30
July 19	Forecast	(497,546)	($0.0287)	(66,117)	294,962	0	0	0	(268,701)	(383,124)	5.25%	(1,708)	(270,409)	1,126,024	2,303,736	31
August 19	Forecast	(270,409)	($0.0287)	(31,311)	294,962	0	0		(6,757)	(138,583)	5.25%	(618)	(7,375)	1,090,959	0	31
September 19	Forecast	(7,375)	($0.0287)	(46,452)	294,962	0	0		241,135	116,880	5.25%	504	241,640	1,618,528	0	30
October 19	Forecast	241,640	($0.0287)	(82,267)	294,962	0	0		454,335	347,987	5.25%	1,552	455,887	2,866,447	0	31
November 19	Forecast	455,887	($0.0640)	(275,552)	294,962	0	0		475,297	465,592	5.25%	2,009	477,306	4,305,494	0	30
December 19	Forecast	477,306	($0.0640)	(503,227)	294,962	0	0		269,042	373,174	5.25%	1,664	270,706	7,862,921	0	31
January 20	Forecast	270,706	($0.0640)	(717,244)	317,035	0	0		(129,503)	70,602	5.25%	315	(129,188)	11,206,936	0	31
February 20	Forecast	(129,188)	($0.0640)	(774,420)	317,035	0	0		(586,573)	(357,880)	5.25%	(1,441)	(588,014)	12,100,319	0	28
March 20	Forecast	(588,014)	($0.0640)	(658,776)	317,035	0	0		(929,755)	(758,884)	5.25%	(3,384)	(933,139)	10,293,377	0	31
April 20	Forecast	(933,139)	($0.0640)	(450,124)	317,035	0	0		(1,066,227)	(999,683)	5.25%	(4,314)	(1,070,541)	7,033,190	0	30
May 20	Forecast	(1,070,541)	($0.0640)	(261,578)	317,035	0	0		(1,015,083)	(1,042,812)	5.25%	(4,650)	(1,019,733)	4,087,157	0	31
June 20	Forecast	(1,019,733)	($0.0640)	(127,121)	317,035	0	0		(829,819)	(924,776)	5.25%	(3,990)	(833,810)	1,986,270	0	30
July 20	Forecast	(833,810)	($0.0640)	(71,801)	317,035	0	0		(588,575)	(711,192)	5.25%	(3,171)	(591,746)	1,121,890	0	31
August 20	Forecast	(591,746)	($0.0640)	(69,431)	317,035	0	0		(344,141)	(467,944)	5.25%	(2,087)	(346,228)	1,084,856	0	31
September 20	Forecast	(346,228)	($0.0640)	(102,761)	317,035	0	0		(131,953)	(239,090)	5.25%	(1,032)	(132,985)	1,605,635	0	30
October 20	Forecast	(132,985)	($0.0640)	(181,622)	317,035	0	0		2,429	(65,278)	5.25%	(291)	2,138	2,837,843	0	31
November 20	Forecast	2,138	($0.0640)	(275,552)	317,035	0	0		43,622	22,880	5.25%	99	43,720	4,305,494	0	30
December 20	Forecast	43,720	($0.0640)	(503,227)	317,035	0	0		(142,471)	(49,375)	5.25%	(220)	(142,691)	7,862,921	0	31

Estimated Residential Conservation Charge Effective November 1, 2019 - October 31, 2020		
Beginning Balance	$	455,887
Program Budget Nov 19-Oct 20		**3,760,280**
Projected Interest		(21,359)
Projected Budget with Interest	$	4,194,807
Total Charges	**$**	**4,194,807**
Projected Therm Sales		**65,525,887**
Residential Rate		**$0.0640**
Total Charges with Interest	**$**	**4,194,807**
Projected Therm Sales		**65,525,887**
Residential Rate		**$0.0640**

Residential Non Heating Therm Sales	0%	**642,126**	**711,615**	0%
Residential Heating Therm Sales	35%	**65,408,076**	**64,814,272**	35%
C&I Therm Sales	64%	**118,604,671**	**121,652,799**	65%
Total Therms	100%	**184,654,874**	**187,178,686**	100%
		Budget	Budget	
		2019	**2020**	
Low-Income Program Budget		**$ 1,310,342**	**$ 1,676,441**	
Other Refund		-	-	
Total Shared Budget		**$ 1,310,342**	**$ 1,676,441**	
Residential Program Budget		**$ 2,852,868**	**$ 2,962,415**	
Residential Program Incentive @ 70%		**$ 217,977**	**$ 255,137**	
Total Residential Program Budget		**$ 3,070,845**	**$ 3,217,552**	
Commercial/Industrial Program Budget		**$ 4,419,684**	**$ 4,083,759**	
Commercial/Industrial Program Incentive at 70%		**$ 205,958**	**$ 224,607**	
Total Commercial/Industrial Program Budget		**$ 4,625,642**	**$ 4,308,366**	
Total Program Budget		**$ 9,006,829**	**$ 9,202,359**	
Shared Expenses Allocation to Residential		$ 468,703	$ 586,874	
Shared Expenses Allocation to C&I		841,639	1,089,567	
Total Allocated Shared Expenses		**$ 1,310,342**	**$ 1,676,441**	
Total Residential (including allocation of Shared Budget)		$ 3,539,548	$ 3,804,426	
Total C&I (including allocation of Shared Budget)		5,467,281	5,397,933	
Total Budget		**$ 9,006,829**	**$ 9,202,359**	

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Energy Efficiency Programs
For Commercial/Industrial Classes
November 1, 2019 - October 31, 2020
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over)/Under	DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures C&I	Actual DSM Expenditures Low-Income	Incentive	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Fed Reserve Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over)/Under	Forecasted Commercial/ Industrial Therm Sales	Actual Commercial/ Industrial Therm Sales	# of Days
May 19	Actual	(1,185,770)	($0.0387)	(312,013)	455,607	146,152	178,452	12,745	(1,160,434)	(1,173,102)	5.50%	(4,351)	(1,164,785)	8,238,574	8,077,113	31
June 19	Actual	(1,164,785)	($0.0387)	(230,093)	455,607	113,008	18,177	12,745	(1,250,947)	(1,207,866)	5.50%	(3,797)	(1,254,744)	5,722,003	5,955,271	30
July 19	Forecast	(1,254,744)	($0.0387)	(168,174)	455,607	0	0		(967,312)	(1,111,028)	5.25%	(4,954)	(972,266)	4,345,591	0	31
August 19	Forecast	(972,266)	($0.0387)	(163,556)	455,607	0	0		(680,215)	(826,241)	5.25%	(3,684)	(683,899)	4,226,257	0	31
September 19	Forecast	(683,899)	($0.0387)	(179,980)	455,607	0	0		(408,273)	(546,086)	5.25%	(2,356)	(410,629)	4,650,649	0	30
October 19	Forecast	(410,629)	($0.0387)	(240,009)	455,607	0	0		(195,031)	(302,830)	5.25%	(1,350)	(196,382)	6,201,778	0	31
November 19	Forecast	(196,382)	($0.0426)	(406,928)	455,607	0	0		(147,703)	(172,042)	5.25%	(742)	(148,445)	9,552,304	0	30
December 19	Forecast	(148,445)	($0.0426)	(567,550)	455,607	0	0		(260,389)	(204,417)	5.25%	(911)	(261,300)	13,322,774	0	31
January 20	Forecast	(261,300)	($0.0426)	(744,139)	449,828	0	0		(555,612)	(408,456)	5.25%	(1,821)	(557,433)	17,468,054	0	31
February 20	Forecast	(557,433)	($0.0426)	(781,199)	449,828	0	0		(888,804)	(723,118)	5.25%	(2,912)	(891,716)	18,337,998	0	28
March 20	Forecast	(891,716)	($0.0426)	(683,984)	449,828	0	0		(1,125,873)	(1,008,794)	5.25%	(4,498)	(1,130,371)	16,055,968	0	31
April 20	Forecast	(1,130,371)	($0.0426)	(539,871)	449,828	0	0		(1,220,414)	(1,175,393)	5.25%	(5,072)	(1,225,486)	12,673,038	0	30
May 20	Forecast	(1,225,486)	($0.0426)	(363,132)	449,828	0	0		(1,138,790)	(1,182,138)	5.25%	(5,271)	(1,144,061)	8,524,221	0	31
June 20	Forecast	(1,144,061)	($0.0426)	(249,804)	449,828	0	0		(944,038)	(1,044,050)	5.25%	(4,505)	(948,543)	5,863,950	0	30
July 20	Forecast	(948,543)	($0.0426)	(188,185)	449,828	0	0		(686,900)	(817,721)	5.25%	(3,646)	(690,546)	4,417,480	0	31
August 20	Forecast	(690,546)	($0.0426)	(183,699)	449,828	0	0		(424,417)	(557,482)	5.25%	(2,486)	(426,903)	4,312,181	0	31
September 20	Forecast	(426,903)	($0.0426)	(203,791)	449,828	0	0		(180,866)	(303,885)	5.25%	(1,311)	(182,178)	4,783,833	0	30
October 20	Forecast	(182,178)	($0.0426)	(270,127)	449,828	0	0		(2,477)	(92,327)	5.25%	(412)	(2,888)	6,340,998	0	31
November 20	Forecast	(2,888)	($0.0426)	(406,928)	449,828	0	0		40,012	18,562	5.25%	80	40,092	9,552,304	0	30
December 20	Forecast	40,092	($0.0426)	(567,550)	449,828	0	0		(77,631)	(18,769)	5.25%	(84)	(77,714)	13,322,774	0	31

Estimated C&I Conservation Charge **November 1, 2019 - October 31, 2020**	
Beginning Balance	(196,382)
Program Budget Nov 19-Oct 20	**5,409,491**
Projected Interest	(35,261)
Program Budget with Interest	5,177,848
Total Charges	**$5,177,848**
Projected Therm Sales	**121,652,799**
C&I Rate	$0.0426
Total Charges with Interest	**$5,182,409**
Projected Therm Sales	**121,652,799**
C&I Rate	**$0.0426**

Liberty Utilities (EnergyNorth Natural Gas) Corp.
Energy Efficiency Programs
For Residential and Commercial/Industrial Classes
November 1, 2019 - October 31, 2020
Energy Efficiency Charge

Month	Actual or Forecast	Beginning Balance (Over)/Under	DSM Rate Per Therm	DSM Collections	Forecasted DSM Expenditures	Actual DSM Expenditures				Incentive	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Plus Interest Prime Rate	Interest @ Fed Reserve Bank Loan Rate	Ending Bal. Plus Interest (Over)/Under	Forecasted Therm Sales	Actual Therm Sales	# of Days
						Residential	C&I	Low-Income	Total									
May 19	Actual	(2,123,700)	n/a	(432,323)	750,569	321,246	146,152	313,073	780,471	26,496	(1,749,055)	(1,936,378)	**5.50%**	(9,045)	(1,758,100)	12,333,808	12,290,578	31
June 19	Actual	(1,758,100)	n/a	(295,804)	750,569	138,113	113,008	31,890	283,012	26,496	(1,744,396)	(1,751,248)	5.50%	(7,917)	(1,752,313)	7,703,669	7,740,734	30
July 19	Forecast	(1,752,290)	n/a	(234,292)	750,569	0	0	0	0		(1,236,013)	(1,494,152)	5.25%	(6,662)	(1,242,675)	5,471,615	2,303,736	31
August 19	Forecast	(1,242,675)	n/a	(194,867)	750,569	0	0	0	0		(686,973)	(964,824)	5.25%	(4,302)	(691,275)	5,317,216	0	31
September 19	Forecast	(691,275)	n/a	(226,432)	750,569	0	0	0	0		(167,138)	(429,206)	5.25%	(1,852)	(168,990)	6,269,177	0	30
October 19	Forecast	(168,990)	n/a	(322,276)	750,569	0	0	0	0		259,304	45,157	5.25%	201	259,505	9,068,225	0	31
November 19	Forecast	259,505	n/a	(682,480)	750,569	0	0	0	0		327,594	293,550	5.25%	1,267	328,861	13,857,797	0	30
December 19	Forecast	328,861	n/a	(1,070,777)	750,569	0	0	0	0		8,653	168,757	5.25%	752	9,406	21,185,695	0	31
January 20	Forecast	9,406	n/a	(1,461,383)	766,863	0	0	0	0		(685,114)	(337,854)	5.25%	(1,506)	(686,621)	28,674,991	0	31
February 20	Forecast	(686,621)	n/a	(1,555,619)	766,863	0	0	0	0		(1,475,377)	(1,080,999)	5.25%	(4,354)	(1,479,730)	30,438,317	0	28
March 20	Forecast	(1,479,730)	n/a	(1,342,760)	766,863	0	0	0	0		(2,055,627)	(1,767,679)	5.25%	(7,882)	(2,063,509)	26,349,344	0	31
April 20	Forecast	(2,063,509)	n/a	(989,996)	766,863	0	0	0	0		(2,286,642)	(2,175,075)	5.25%	(9,386)	(2,296,027)	19,706,228	0	30
May 20	Forecast	(2,296,027)	n/a	(624,710)	766,863	0	0	0	0		(2,153,874)	(2,224,950)	5.25%	(9,921)	(2,163,795)	12,611,378	0	31
June 20	Forecast	(2,163,795)	n/a	(376,926)	766,863	0	0	0	0		(1,773,857)	(1,968,826)	5.25%	(8,496)	(1,782,353)	7,850,220	0	30
July 20	Forecast	(1,782,353)	n/a	(259,986)	766,863	0	0	0	0		(1,275,475)	(1,528,914)	5.25%	(6,817)	(1,282,292)	5,539,370	0	31
August 20	Forecast	(1,282,292)	n/a	(253,130)	766,863	0	0	0	0		(768,559)	(1,025,425)	5.25%	(4,572)	(773,131)	5,397,037	0	31
September 20	Forecast	(773,131)	n/a	(306,552)	766,863	0	0	0	0		(312,820)	(542,975)	5.25%	(2,343)	(315,163)	6,389,467	0	30
October 20	Forecast	(315,163)	n/a	(451,748)	766,863	0	0	0	0		(48)	(157,605)	5.25%	(703)	(750)	9,178,841	0	31
November 20	Forecast	(750)	n/a	(682,480)	766,863	0	0	0	0		83,633	41,441	5.25%	179	83,812	13,857,797	0	30
December 20	Forecast	83,812	n/a	(1,070,777)	766,863	0	0	0	0		(220,102)	(68,145)	5.25%	(304)	(220,406)	21,185,695	0	31

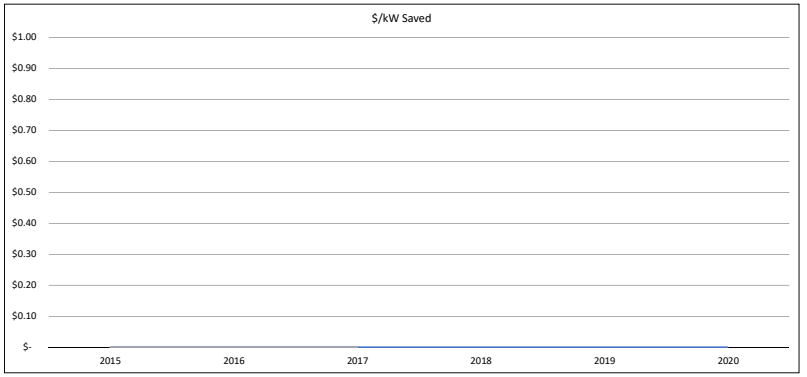
Residential (R-1 & R-3) and C & I Conservation Charge **November 1, 2019 - October 31, 2020**		
Beginning Balance	$	259,505
Program Budget Nov 19-Oct 20	$	9,169,771
Projected Interest	$	(56,620)
Program Budget with Interest	$	9,372,655
Total Charges		**$9,372,655**

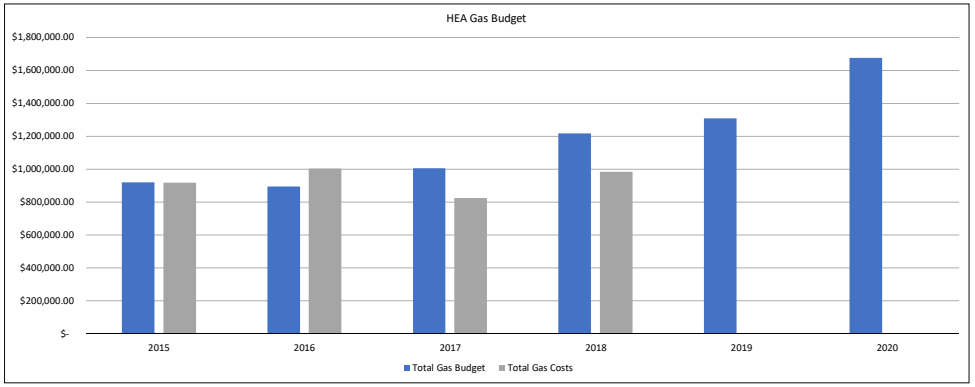
Home Energy Assistance

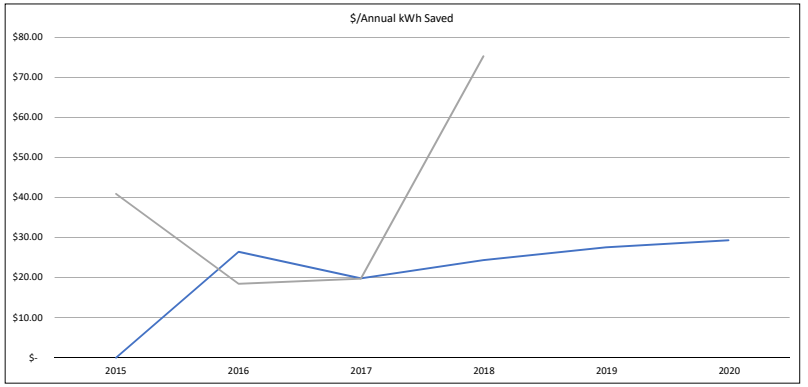
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 921,250.00	$ 895,000.00	$ 1,005,700.00	$ 1,217,300.00	$ 1,310,342.19	$ 1,676,441.36
	Annual Electric Savings Plan (kWh)	-	33,878.44	50,719.26	49,935.01	47,538.87	57,178.54
	$/Annual kWh Plan	$ -	$ 26.42	$ 19.83	$ 24.38	$ 27.56	$ 29.32
2)	Total Gas Budget	$ 921,250.00	$ 895,000.00	$ 1,005,700.00	$ 1,217,300.00	$ 1,310,342.19	$ 1,676,441.36
	Total summer peak kW Plan	-	-	-	-	-	-
	$/kW Plan	$ -	$ -	$ -	$ -	$ -	$ -
3)	Total Gas Budget	$ 921,250.00	$ 895,000.00	$ 1,005,700.00	$ 1,217,300.00	$ 1,310,342.19	$ 1,676,441.36
	Total Annual MMBtu Plan	6,650.66	6,338.51	5,302.03	7,252.46	7,636.96	8,460.12
	$/Annual MMBtu Plan	$ 138.52	$ 141.20	$ 189.68	$ 167.85	$ 171.58	$ 198.16

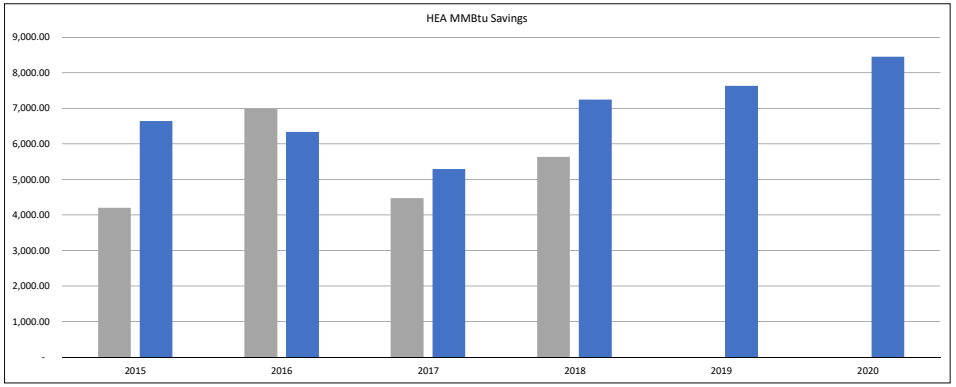
Home Energy Assistance

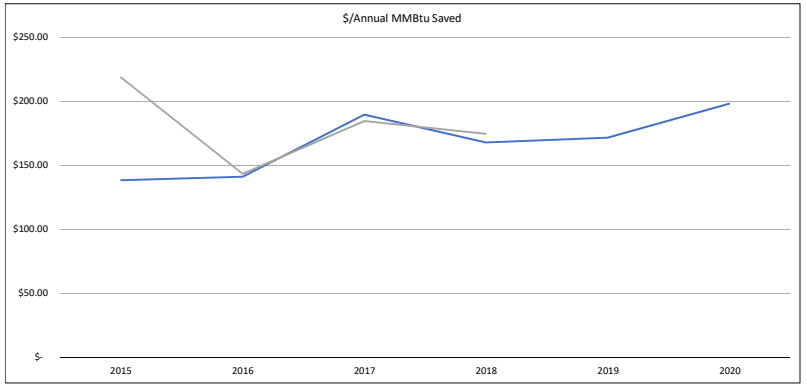
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 919,750.53	$ 1,003,642.21	$ 826,371.23	$ 984,076.99
	Annual Electric Savings Actual (kWh)	22,452.20	54,303.44	41,805.90	13,069.01
	$/Annual kWh Actual	$ 40.96	$ 18.48	$ 19.77	$ 75.30
2)	Total Gas Costs	$ 919,750.53	$ 1,003,642.21	$ 826,371.23	$ 984,076.99
	Total summer peak kW Actual	-	-	-	
	$/kW Actual	$ -	$ -	$ -	
3)	Total Gas Costs	$ 919,750.53	$ 1,003,642.21	$ 826,371.23	$ 984,076.99
	Total Annual MMBtu Actual	4,206.13	6,997.88	4,476.14	5,636.02
	$/Annual MMBtu Actual	$ 218.67	$ 143.42	$ 184.62	$ 174.60









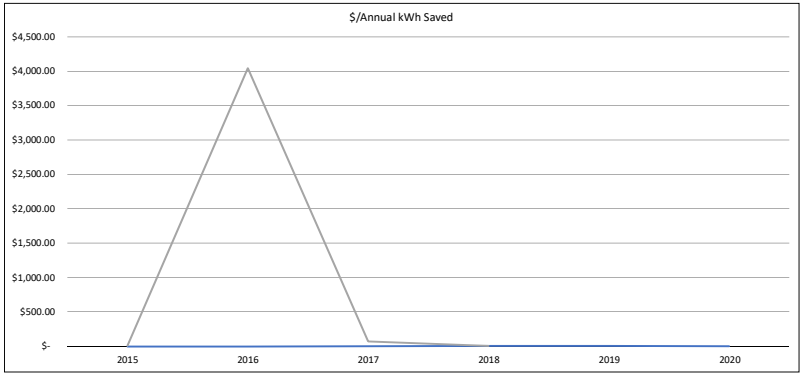


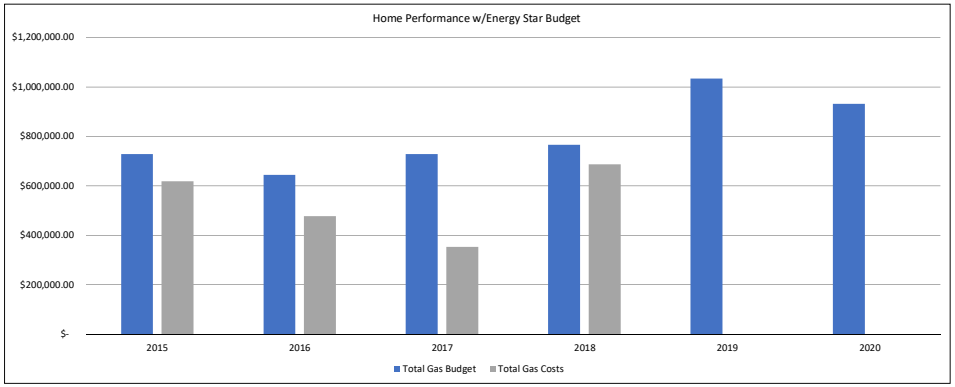
Home Performance w/Energy Star

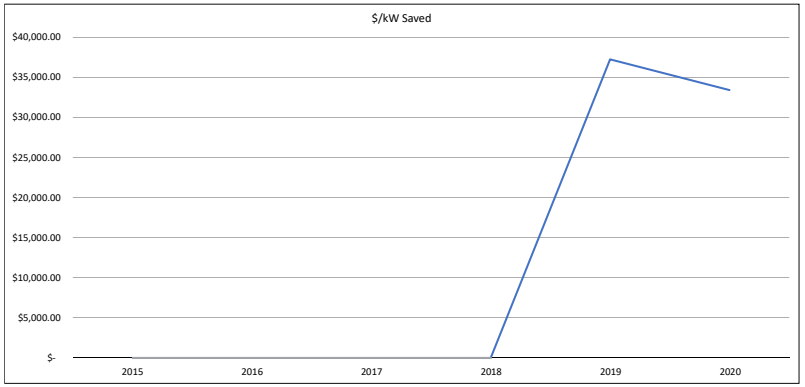
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 730,157.00	$ 645,815.00	$ 729,200.00	$ 767,160.00	$ 1,035,751.28	$ 933,161.78
	Annual Electric Savings Plan (kWh)	-	-	185,369.92	119,725.12	177,985.24	178,695.06
	$/Annual kWh Plan	$ -	$ -	$ 3.93	$ 6.41	$ 5.82	$ 5.22
2)	Total Gas Budget	$ 730,157.00	$ 645,815.00	$ 729,200.00	$ 767,160.00	$ 1,035,751.28	$ 933,161.78
	Total summer peak kW Plan	-	-	-	-	27.77	27.88
	$/kW Plan	$ -	$ -	$ -	$ -	$ 37,302.35	$ 33,474.12
3)	Total Gas Budget	$ 730,157.00	$ 645,815.00	$ 729,200.00	$ 767,160.00	$ 1,035,751.28	$ 933,161.78
	Total Annual MMBtu Plan	11,681.19	15,257.70	7,369.27	8,247.88	10,825.20	11,796.09
	$/Annual MMBtu Plan	$ 62.51	$ 42.33	$ 98.95	$ 93.01	$ 95.68	$ 79.11

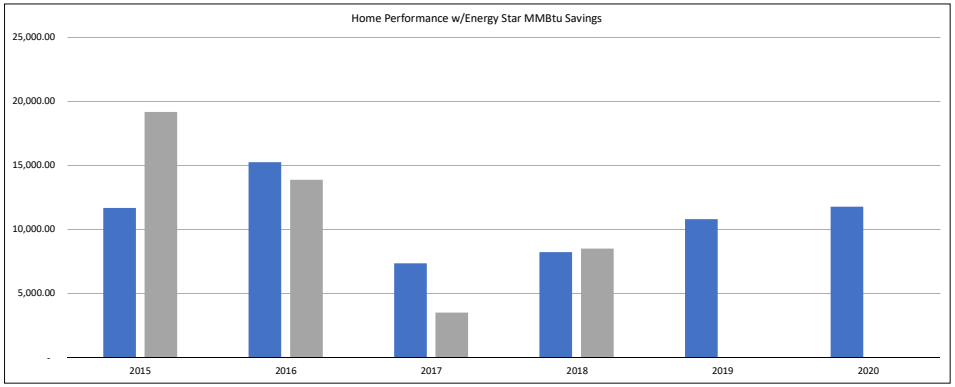
Home Performance w/Energy Star

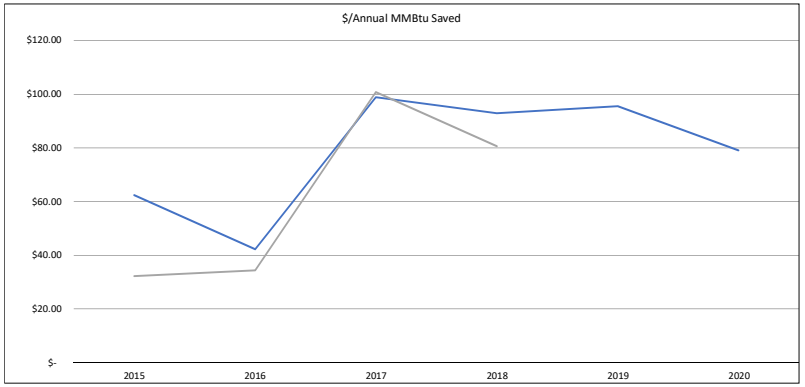
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 619,872.77	$ 478,819.12	$ 354,067.20	$ 688,212.32
	Annual Electric Savings Actual (kWh)	45,640.00	118.28	4,817.00	116,260.00
	$/Annual kWh Actual	$ 13.58	$ 4,048.30	$ 73.50	$ 5.92
2)	Total Gas Costs	$ 619,872.77	$ 478,819.12	$ 354,067.20	$ 688,212.32
	Total summer peak kW Actual	-	-	-	-
	$/kW Actual	$ -	$ -	$ -	$ -
3)	Total Gas Costs	$ 619,872.77	$ 478,819.12	$ 354,067.20	$ 688,212.32
	Total Annual MMBtu Actual	19,203.20	13,900.99	3,507.99	8,527.40
	$/Annual MMBtu Actual	$ 32.28	$ 34.44	$ 100.93	$ 80.71









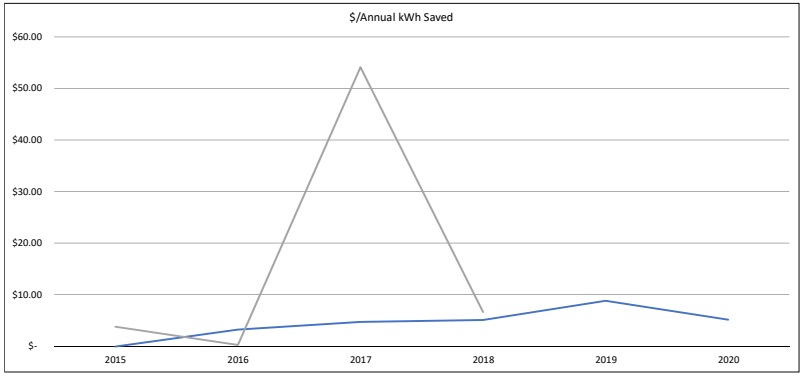


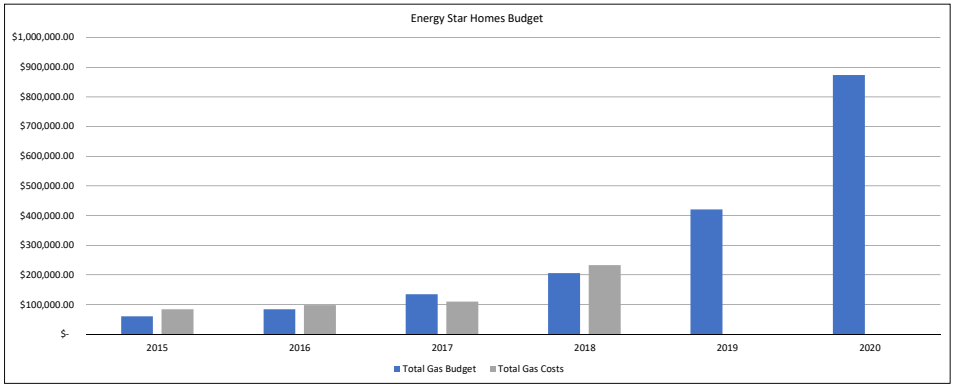
Energy Star Homes

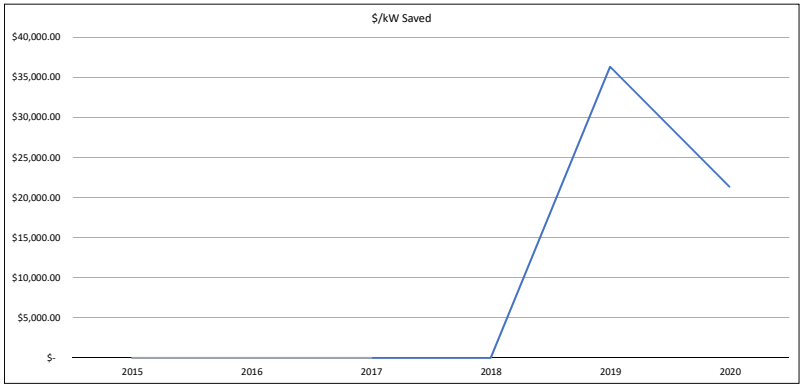
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 60,800.00	$ 85,000.00	$ 136,000.00	$ 207,100.00	$ 421,351.15	$ 874,689.22
	Annual Electric Savings Plan (kWh)	-	26,098.44	28,722.49	40,277.27	47,700.96	168,486.15
	$/Annual kWh Plan	$ -	$ 3.26	$ 4.73	$ 5.14	$ 8.83	$ 5.19
2)	Total Gas Budget	$ 60,800.00	$ 85,000.00	$ 136,000.00	$ 207,100.00	$ 421,351.15	$ 874,689.22
	Total summer peak kW Plan	-	-	-	-	11.57	40.88
	$/kW Plan	$ -	$ -	$ -	$ -	$ 36,404.46	$ 21,395.73
3)	Total Gas Budget	$ 60,800.00	$ 85,000.00	$ 136,000.00	$ 207,100.00	$ 421,351.15	$ 874,689.22
	Total Annual MMBtu Plan	989.66	1,599.35	1,828.65	1,582.72	2,576.78	12,724.41
	$/Annual MMBtu Plan	$ 61.44	$ 53.15	$ 74.37	$ 130.85	$ 163.52	$ 68.74

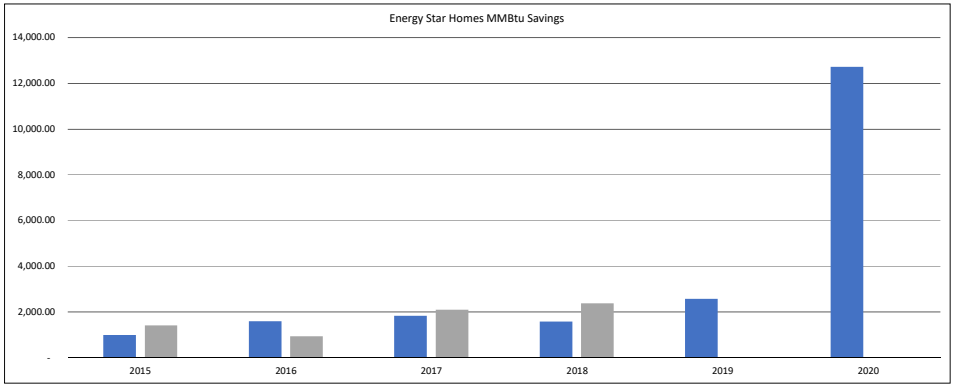
Energy Star Homes

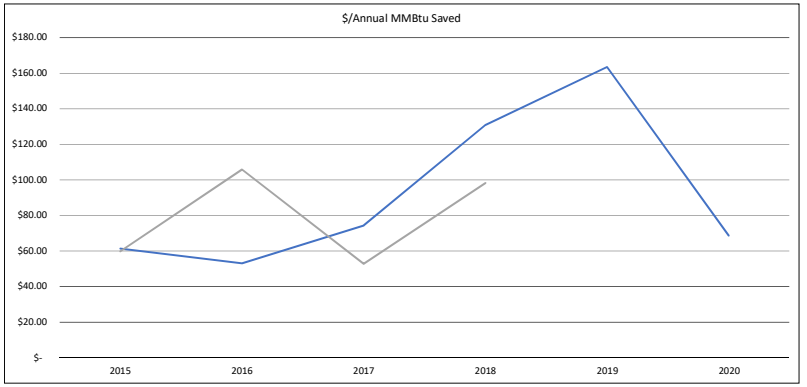
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 84,958.18	$ 99,239.80	$ 111,025.37	$ 234,317.20
	Annual Electric Savings Actual (kWh)	22,296.00	348,784.00	2,050.64	35,232.50
	$/Annual kWh Actual	$ 3.81	$ 0.28	$ 54.14	$ 6.65
2)	Total Gas Costs	$ 84,958.18	$ 99,239.80	$ 111,025.37	$ 234,317.20
	Total summer peak kW Actual	-	-	-	
	$/kW Actual	$ -	$ -	$ -	
3)	Total Gas Costs	$ 84,958.18	$ 99,239.80	$ 111,025.37	$ 234,317.20
	Total Annual MMBtu Actual	1,419.50	937.50	2,103.50	2,384.90
	$/Annual MMBtu Actual	$ 59.85	$ 105.86	$ 52.78	$ 98.25









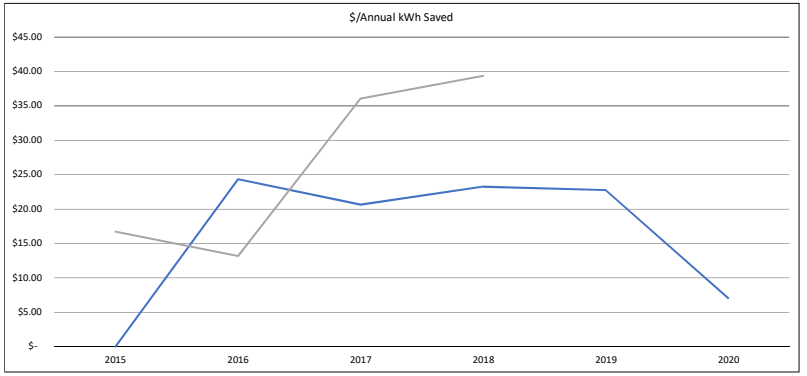


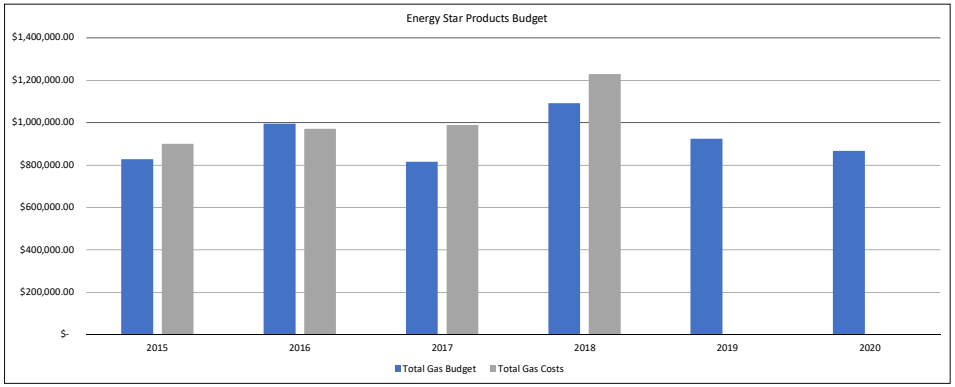
Energy Star Products

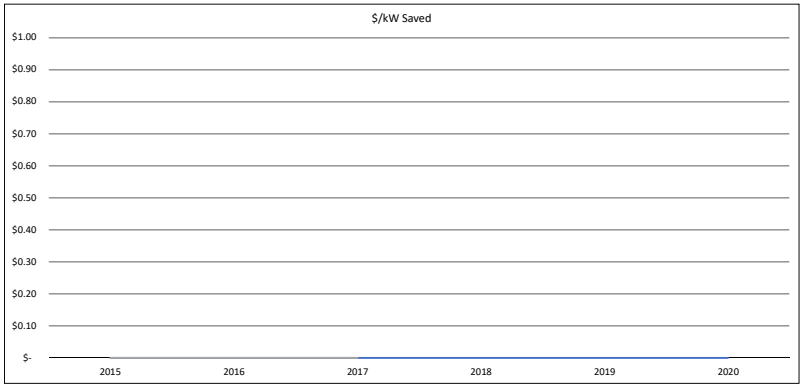
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 828,043.00	$ 995,000.00	$ 815,220.00	$ 1,091,674.00	$ 925,001.00	$ 867,569.00
	Annual Electric Savings Plan (kWh)	-	40,875.38	39,480.00	46,959.26	40,628.00	123,094.00
	$/Annual kWh Plan	$ -	$ 24.34	$ 20.65	$ 23.25	$ 22.77	$ 7.05
2)	Total Gas Budget	$ 828,043.00	$ 995,000.00	$ 815,220.00	$ 1,091,674.00	$ 925,001.00	$ 867,569.00
	Total summer peak kW Plan	-	-	-	-	-	-
	$/kW Plan	$ -	$ -	$ -	$ -	$ -	$ -
3)	Total Gas Budget	$ 828,043.00	$ 995,000.00	$ 815,220.00	$ 1,091,674.00	$ 925,001.00	$ 867,569.00
	Total Annual MMBtu Plan	14,005.99	15,590.22	10,383.60	14,078.80	11,989.98	11,161.38
	$/Annual MMBtu Plan	$ 59.12	$ 63.82	$ 78.51	$ 77.54	$ 77.15	$ 77.73

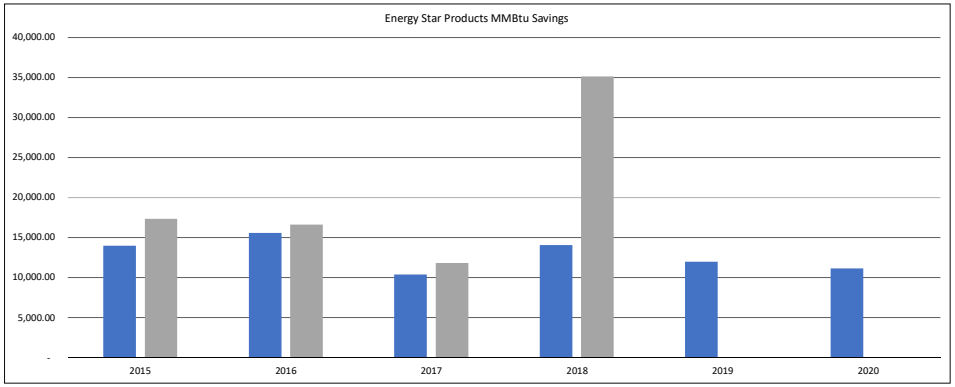
Energy Star Products

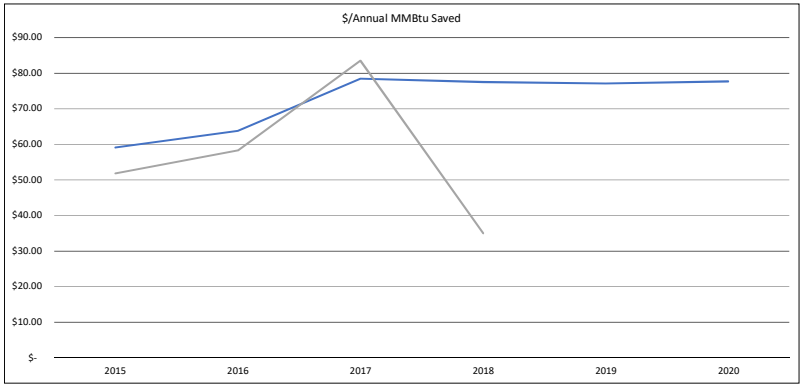
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 899,813.80	$ 970,998.20	$ 989,619.28	$ 1,230,077.32
	Annual Electric Savings Actual (kWh)	53,802.80	73,636.72	27,419.00	31,248.00
	$/Annual kWh Actual	$ 16.72	$ 13.19	$ 36.09	$ 39.36
2)	Total Gas Costs	$ 899,813.80	$ 970,998.20	$ 989,619.28	$ 1,230,077.32
	Total summer peak kW Actual	-	-	-	
	$/kW Actual	$ -	$ -	$ -	
3)	Total Gas Costs	$ 899,813.80	$ 970,998.20	$ 989,619.28	$ 1,230,077.32
	Total Annual MMBtu Actual	17,351.10	16,657.70	11,845.70	35,151.30
	$/Annual MMBtu Actual	$ 51.86	$ 58.29	$ 83.54	$ 34.99









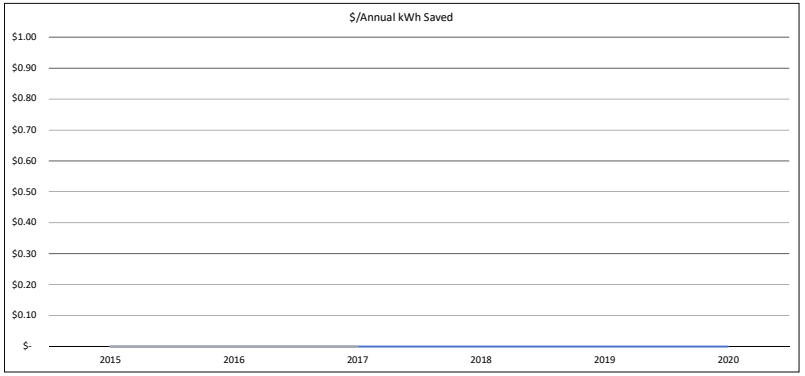


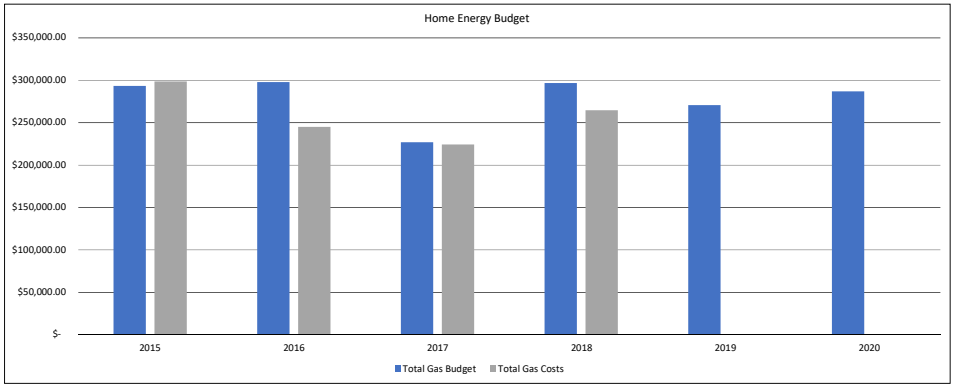
Home Energy Reports

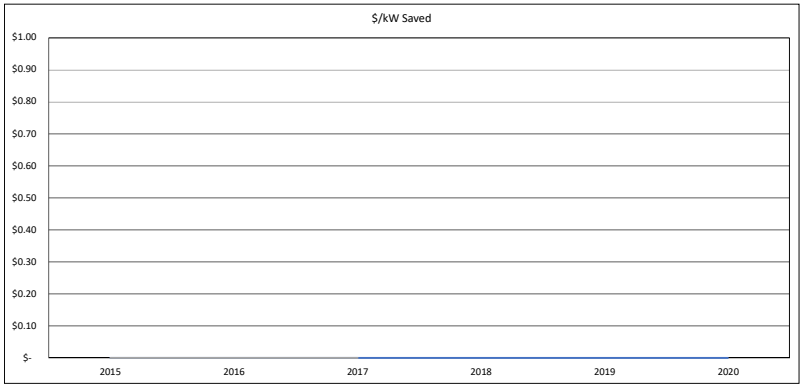
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 293,550.00	$ 298,000.00	$ 227,000.00	$ 296,600.00	$ 270,764.00	$ 286,994.54
	Annual Electric Savings Plan (kWh)	-	-	-	-	-	-
	$/Annual kWh Plan	$ -	$ -	$ -	$ -	$ -	$ -
2)	Total Gas Budget	$ 293,550.00	$ 298,000.00	$ 227,000.00	$ 296,600.00	$ 270,764.00	$ 286,994.54
	Total summer peak kW Plan	-	-	-	-	-	-
	$/kW Plan	$ -	$ -	$ -	$ -	$ -	$ -
3)	Total Gas Budget	$ 293,550.00	$ 298,000.00	$ 227,000.00	$ 296,600.00	$ 270,764.00	$ 286,994.54
	Total Annual MMBtu Plan	18,440.10	18,440.10	9,700.00	7,480.00	7,384.00	7,438.20
	$/Annual MMBtu Plan	$ 15.92	$ 16.16	$ 23.40	$ 39.65	$ 36.67	$ 38.58

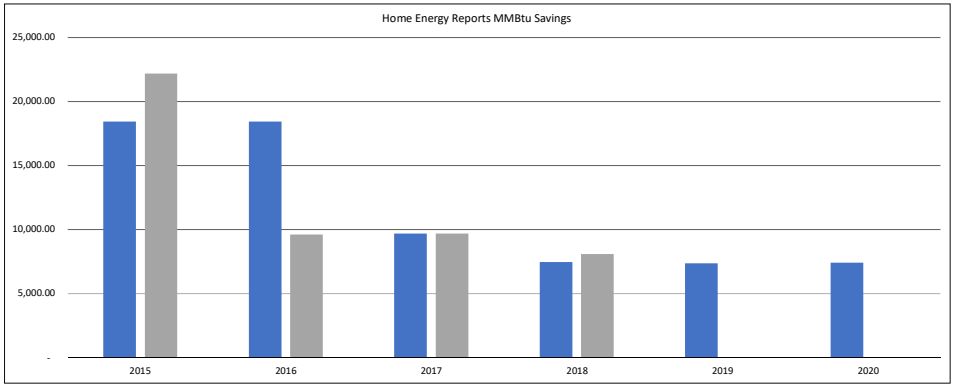
Home Energy Reports

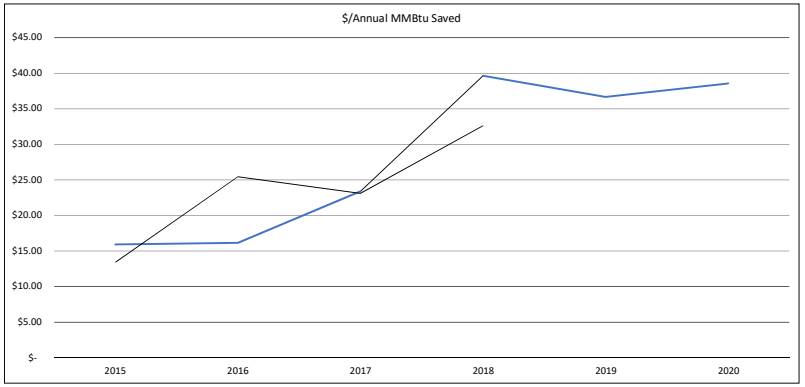
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 298,541.76	$ 245,049.37	$ 224,349.60	$ 264,913.58
	Annual Electric Savings Actual (kWh)	-	-	-	-
	$/Annual kWh Actual	$ -	$ -	$ -	$ -
2)	Total Gas Costs	$ 298,541.76	$ 245,049.37	$ 224,349.60	$ 264,913.58
	Total summer peak kW Actual	-	-	-	-
	$/kW Actual	$ -	$ -	$ -	$ -
3)	Total Gas Costs	$ 298,541.76	$ 245,049.37	$ 224,349.60	$ 264,913.58
	Total Annual MMBtu Actual	22,213.10	9,622.40	9,708.30	8,115.51
	$/Annual MMBtu Actual	$ 13.44	$ 25.47	$ 23.11	$ 32.64









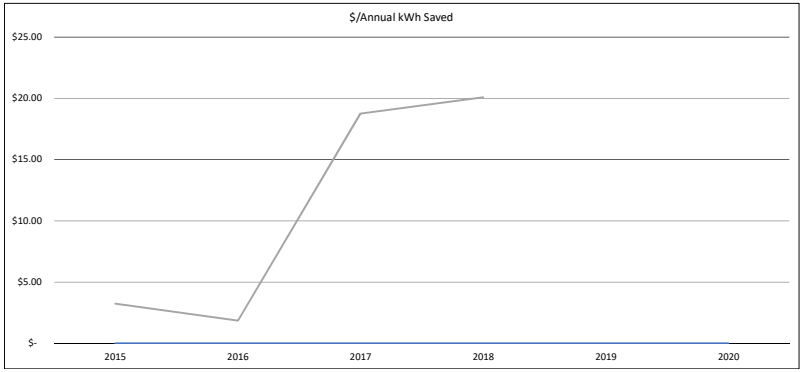


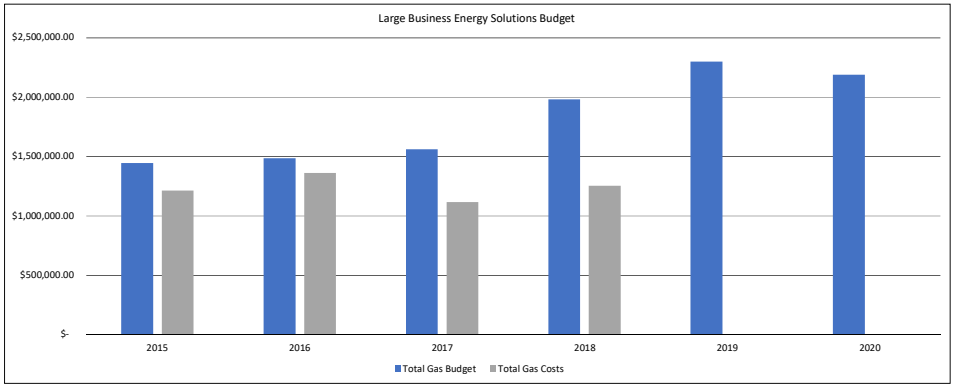
Large Business Energy Solutions

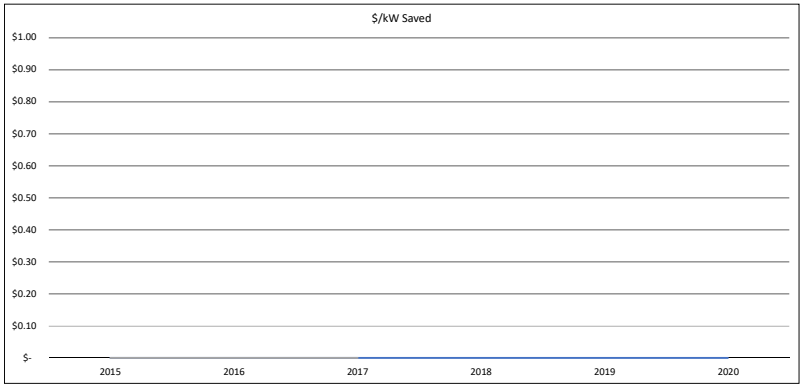
Planned		2015	2016	2017	2018	2019	2020
1)	Total Gas Budget	$ 1,445,300.00	$ 1,488,000.00	$ 1,563,100.00	$ 1,981,418.00	$ 2,300,303.00	$ 2,190,676.00
	Annual Electric Savings Plan (kWh)	-	-	-	-	-	-
	$/Annual kWh Plan	$ -	$ -	$ -	$ -	$ -	$ -
2)	Total Gas Budget	$ 1,445,300.00	$ 1,488,000.00	$ 1,563,100.00	$ 1,981,418.00	$ 2,300,303.00	$ 2,190,676.00
	Total summer peak kW Plan	-	-	-	-	-	-
	$/kW Plan	$ -	$ -	$ -	$ -	$ -	$ -
3)	Total Gas Budget	$ 1,445,300.00	$ 1,488,000.00	$ 1,563,100.00	$ 1,981,418.00	$ 2,300,303.00	$ 2,190,676.00
	Total Annual MMBtu Plan	35,112.28	47,470.90	50,253.00	56,640.57	65,862.90	65,052.48
	$/Annual MMBtu Plan	$ 41.16	$ 31.35	$ 31.10	$ 34.98	$ 34.93	$ 33.68

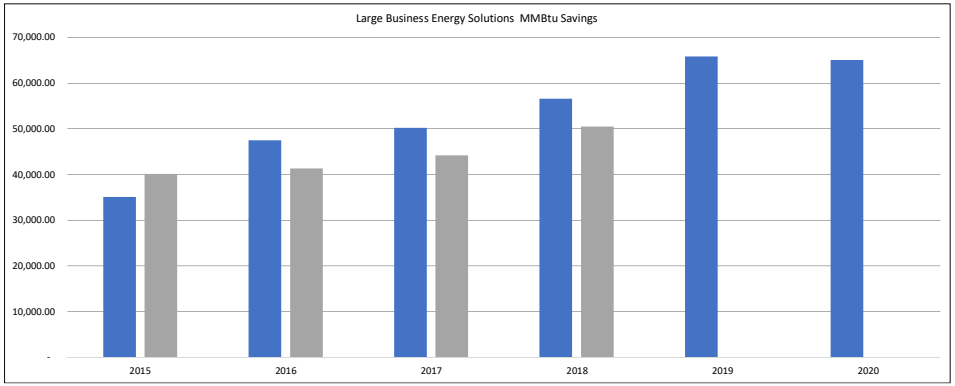
Large Business Energy Solutions

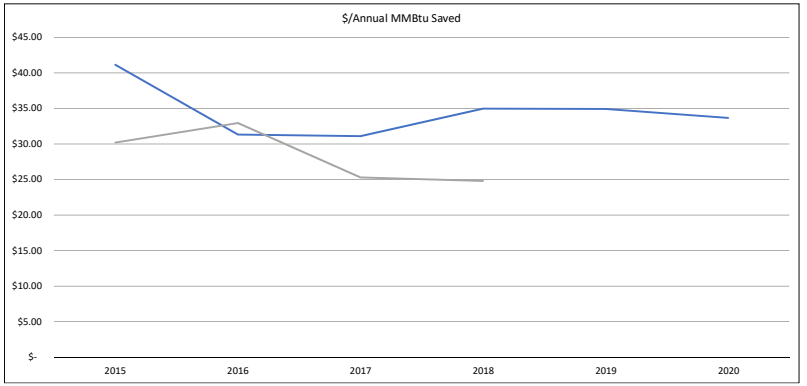
Actuals		2015	2016	2017	2018
1)	Total Gas Costs	$ 1,213,707.03	$ 1,362,062.88	$ 1,118,669.97	$ 1,253,657.27
	Annual Electric Savings Actual (kWh)	376,025.00	730,766.77	59,599.14	62,399.00
	$/Annual kWh Actual	$ 3.23	$ 1.86	$ 18.77	$ 20.09
2)	Total Gas Costs	$ 1,213,707.03	$ 1,362,062.88	$ 1,118,669.97	$ 1,253,657.27
	Total summer peak kW Actual	-	-	-	-
	$/kW Actual	$ -	$ -	$ -	$ -
3)	Total Gas Costs	$ 1,213,707.03	$ 1,362,062.88	$ 1,118,669.97	$ 1,253,657.27
	Total Annual MMBtu Actual	40,175.50	41,329.60	44,189.10	50,500.29
	$/Annual MMBtu Actual	$ 30.21	$ 32.96	$ 25.32	$ 24.82









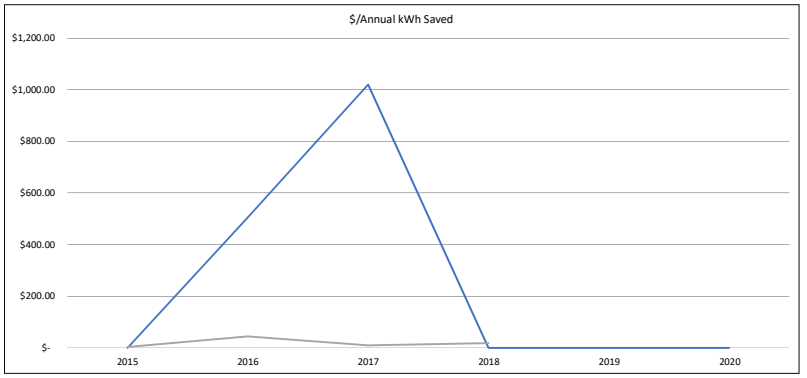


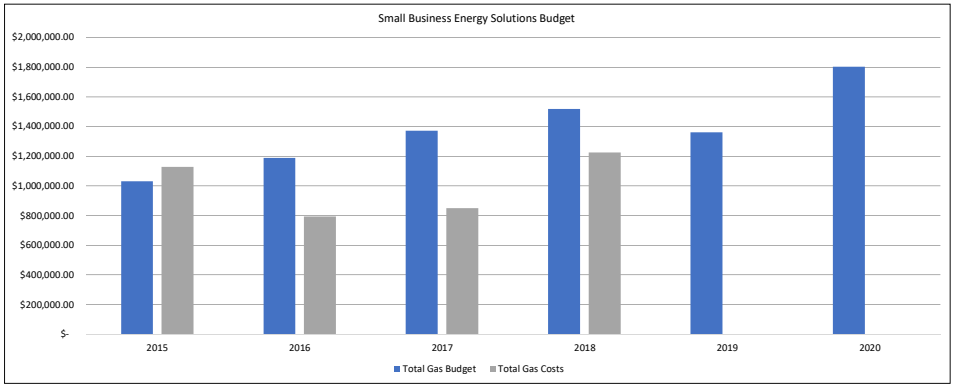
Small Business Energy Solutions

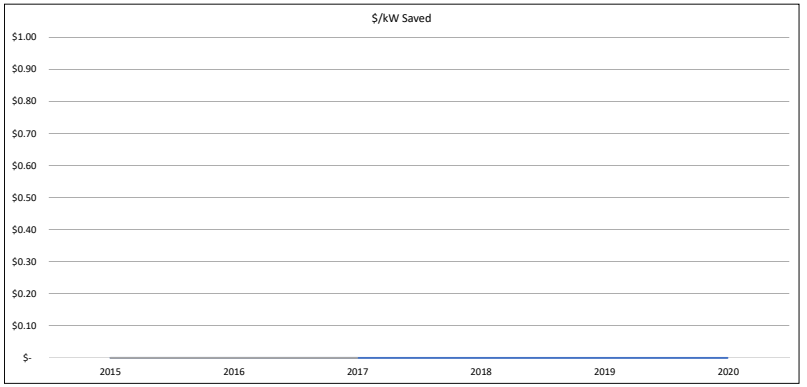
		2015	2016	2017	2018	2019	2020
Planned							
1)	Total Gas Budget	$ 1,032,710.00	$ 1,190,000.00	$ 1,373,000.00	$ 1,521,323.00	$ 1,361,981.00	$ 1,805,139.00
	Annual Electric Savings Plan (kWh)	-	2,352.00	1,344.00	-	-	-
	$/Annual kWh Plan	$ -	$ 505.95	$ 1,021.58	$ -	$ -	$ -
2)	Total Gas Budget	$ 1,032,710.00	$ 1,190,000.00	$ 1,373,000.00	$ 1,521,323.00	$ 1,361,981.00	$ 1,805,139.00
	Total summer peak kW Plan	-	-	-	-	-	-
	$/kW Plan	$ -	$ -	$ -	$ -	$ -	$ -
3)	Total Gas Budget	$ 1,032,710.00	$ 1,190,000.00	$ 1,373,000.00	$ 1,521,323.00	$ 1,361,981.00	$ 1,805,139.00
	Total Annual MMBtu Plan	19,194.68	17,647.10	38,717.41	34,789.57	31,804.20	30,789.02
	$/Annual MMBtu Plan	$ 53.80	$ 67.43	$ 35.46	$ 43.73	$ 42.82	$ 58.63

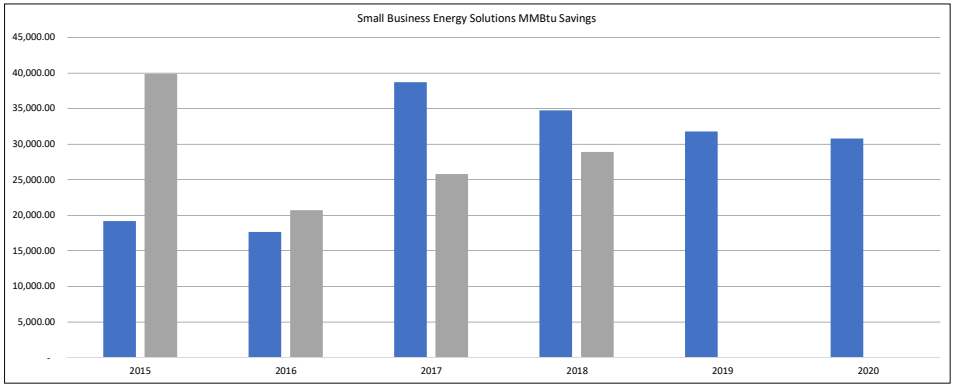
Small Business Energy Solutions

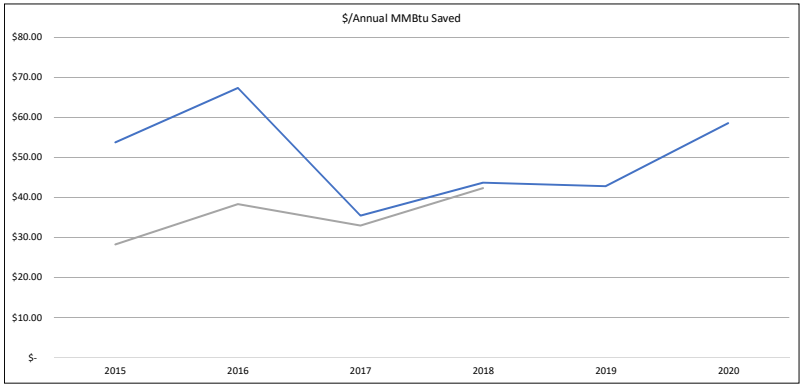
		2015	2016	2017	2018
Actuals					
1)	Total Gas Costs	$ 1,129,097.52	$ 795,988.77	$ 852,560.30	$ 1,226,552.32
	Annual Electric Savings Actual (kWh)	316,732.00	17,924.79	90,646.55	66,362.00
	$/Annual kWh Actual	$ 3.56	$ 44.41	$ 9.41	$ 18.48
2)	Total Gas Costs	$ 1,129,097.52	$ 795,988.77	$ 852,560.30	$ 1,226,552.32
	Total summer peak kW Actual	-	-	-	
	$/kW Actual	$ -	$ -	$ -	
3)	Total Gas Costs	$ 1,129,097.52	$ 795,988.77	$ 852,560.30	$ 1,226,552.32
	Total Annual MMBtu Actual	39,916.08	20,731.54	25,814.51	28,935.00
	$/Annual MMBtu Actual	$ 28.29	$ 38.40	$ 33.03	$ 42.39











Program Cost-Effectiveness - 2020 PLAN Update

	Total Resource Benefit / Cost Ratio (w/out PI)		Benefit ($000)	Utility Costs ($000)	Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served	Annual MMBTU Savings	Lifetime MMBTU Savings
Residential Programs												
Home Energy Assistance	1.03	$	426.8	413.0	-	12.3	125.2	1.4	1.0	70	2,136.8	44,343.1
Energy Star Homes	1.01	$	274.4	213.2	57.4	10.1	160.8	2.3	1.6	49	1,506.5	29,950.0
Home Performance with Energy Star	1.01	$	327.7	222.6	101.7	20.6	265.6	1.8	2.9	54	1,716.5	34,137.2
Energy Star Products	1.07	$	880.9	347.1	478.8	12.5	196.9	6.3	-	812	5,826.8	103,963.6
Home Energy Reports	0.83	$	57.2	69.2	-	-	-	-	-	9,100	1,934.0	5,304.5
Sub-Total Residential	**1.03**	**$**	**1,966.9**	**1,265.1**	**637.9**	**55.4**	**748.6**	**11.8**	**5.4**	**10,085**	**13,120.6**	**217,698.4**
Commercial, Industrial & Municipal												
Large Business Energy Solutions	1.87	$	2,335.3	740.4	511.3	-	-	-	-	93	19,094.2	278,343.2
Small Business Energy Solutions	1.74	$	1,005.3	405.2	172.5	1.9	34.7	0.1	-	217	8,096.4	126,923.4
Education	-	$	-	18.6	-	-	-	-	-		-	-
Sub-Total Commercial & Industrial	**1.81**	**$**	**3,340.6**	**1,164.2**	**683.7**	**1.9**	**34.7**	**0.1**	**-**	**310**	**27,190.6**	**405,266.6**
Total	**1.41**	**$**	**5,307.6**	**2,429.4**	**1,321.6**	**57.3**	**783.3**	**11.9**	**5.4**	**10,395**	**40,311.2**	**622,965.0**

Present Value Benefits - 2020 PLAN Update

	Total Benefits ($000)	Resource Benefits ($000)																	Non-Resource Benefits ($000)		
		Electric												Non-Electric				Total Resource Benefits	Fossil Emissions	Other Non-Resource Benefit	Total Non Resource Benefits
		CAPACITY				ENERGY				DRIPE	Total Electric Benefit	Gas Benefits		Total Gas Benefits	Water Benefit						
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Electric DRIPE		Gas Benefit	Gas DRIPE								
Residential Programs																					
Home Energy Assistance	$ 426.8	$ 1.1	$ -	$ 1.2	$ 1.1	$ 2.7	$ 2.4	$ 0.9	$ 0.8	$ 0.5	$ 10.9	$ 299.1	$ 9.6	$ 308.7	$ 1.1	$ 320.7	$ 42.2	$ 63.9	$ 106.1
Energy Star Homes	$ 274.4	$ 1.5	$ -	$ 1.7	$ 1.5	$ 3.4	$ 2.6	$ 1.4	$ 1.1	$ 0.4	$ 13.7	$ 203.2	$ 6.6	$ 209.8	$ 0.6	$ 224.1	$ 27.9	$ 22.4	$ 50.2
Home Performance with Energy Star	$ 327.7	$ 3.6	$ -	$ 3.8	$ 3.3	$ 4.8	$ 5.3	$ 1.9	$ 2.1	$ 0.9	$ 25.8	$ 235.3	$ 8.0	$ 243.3	$ -	$ 269.1	$ 31.7	$ 26.9	$ 58.6
Energy Star Products	$ 880.9	$ -	$ -	$ -	$ -	$ 5.8	$ 5.3	$ 0.1	$ 0.1	$ 0.6	$ 11.9	$ 683.1	$ 20.5	$ 703.6	$ -	$ 715.5	$ 93.8	$ 71.6	$ 165.4
Home Energy Reports	$ 57.2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 45.1	$ 3.5	$ 48.6	$ -	$ 48.6	$ 3.7	$ 4.9	$ 8.6
Sub-Total Residential	**$ 1,966.9**	**$ 6.3**	**$ -**	**$ 6.8**	**$ 5.9**	**$ 16.8**	**$ 15.6**	**$ 4.3**	**$ 4.0**	**$ 2.4**	**$ 62.2**	**$ 1,465.9**	**$ 48.2**	**$ 1,514.0**	**$ 1.8**	**$ 1,578.0**	**$ 199.4**	**$ 189.6**	$ 388.9
Commercial/Industrial Programs																					
Large Business Energy Solutions	$ 2,335.3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,820.1	$ 85.0	$ 1,905.1	$ -	$ 1,905.1	$ 239.7	$ 190.5	$ 430.2
Small Business Energy Solutions	$ 1,005.3	$ -	$ -	$ -	$ -	$ 0.8	$ 1.1	$ -	$ 0.0	$ 0.1	$ 2.0	$ 775.4	$ 30.6	$ 806.1	$ 3.8	$ 811.9	$ 112.6	$ 80.8	$ 193.4
Sub-Total Commercial & Industrial	**$ 3,340.6**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 0.8**	**$ 1.1**	**$ -**	**$ 0.0**	**$ 0.1**	**$ 2.0**	**$ 2,595.5**	**$ 115.7**	**$ 2,711.2**	**$ 3.8**	**$ 2,717.0**	**$ 352.3**	**$ 271.3**	$ 623.6
Total	**$ 5,307.6**	**$ 6.3**	**$ -**	**$ 6.8**	**$ 5.9**	**$ 17.6**	**$ 16.8**	**$ 4.3**	**$ 4.0**	**$ 2.5**	**$ 64.2**	**$ 4,061.4**	**$ 163.8**	**$ 4,225.2**	**$ 5.6**	**$ 4,295.0**	**$ 551.6**	**$ 460.9**	**$ 1,012.5**

Performance Incentive Calculation - 2020 PLAN Update

	Portfolio Planned Versus Actual Performance - 2020											
	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned	Actual PI	Source
1	Lifetime MMBtu Savings	622,965	*467,224*		0%	2.475%	0.000%	$ 60,127	$ 75,158	$ -	Planned and Actual from Cost Eff Tab
2	Annual MMBtu Savings	40,311	*30,233*		0%	1.100%	0.000%	$ 26,723	$ 33,404	$ -	Planned and Actual from Cost Eff Tab
3	Total Resource Benefits	$ 4,295,031			0%						Planned and Actual from Benefits Tab
4	Total Utility Costs[1]	$ 2,429,357			0%						Planned and Actual from Cost Eff Tab
5	Net Benefits	$ 1,865,674	*$ 1,399,255*	$ -	0%	1.925%	0.000%	$ 46,765	$ 58,456	$ -	Line 5 minus line 6
6	**Total**					**5.500%**	**0.000%**	**$ 133,615**	**$ 167,018**	$ -	

		Total Resource Cost Test		
		Planned	Actual	Source
7	Total Benefits (incl. NEIs)	$ 5,307,561		Planned and Actual from Cost Eff Tab
8	Performance Incentive	$ 133,615	$ -	from row 6 above
9	Participant Costs	$ 1,576,440	$ -	Planned and Actual from Cost Eff Tab
10	Total Utility Costs	$ 2,429,357	$ -	from row 4 above
11	**Portfolio TRC BCR**	**1.28**		row 9 divided by rows 10+11+12

All dollar values are expressed in 2020 dollars

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

This model is considered proprietary and is provided for the purpose of reviewing the

Northern Utilities Inc.
NHPUC Docket No. DE 17-136
Attachment J2 (2020 Update)
Home Energy Assistance Program

Home Energy Assistance Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Boiler - NG Boiler Replacement AFUE>=90%	1	1	2	142	-	142	20	20	20	87%	87%	2,468	-	4,936	19.40	8.05	19.40	100%	100%	388	161	776
Furnace - NG Furnace Replacement AFUE>=90%	4	1	4	168	1,020	168	18	18	18	87%	87%	10,511	15,955	10,511	20.70	8.12	20.70	100%	100%	1,490	146	1,490
Direct Install Water Measures	60	3,684	64				7	7	7	87%	87%	-	-	-	1.00	0.08	1.00	98%	100%	412	1,984	448
Heating System Tune-up	4	1	3				1	1	1	87%	87%	-	-	-	10.00	6.36	10.00	98%	98%	39	6	29
Multifamily weatherization	17	72	25	38		38	22	19	22	87%	87%	12,350	-	18,162	24.00	30.74	24.00	98%	98%	8,805	41,682	12,949
Single Family weatherization	43	19	45	58	439	58	22	22	22	87%	87%	47,680	159,540	49,898	28.00	27.58	28.00	98%	98%	25,985	11,309	27,193
Thermostat - Standard, 7-Day Programmable	12	3	15		33		15	15	15	87%	87%	-	1,304	-	6.60	2.37	6.60	98%	98%	1,165	104	1,457
LED lighting	360		384	50		25	5		5	87%	87%	78,210	-	41,712				98%	98%	-	-	
Aerator		60			2			10		87%	87%	-	939	-		0.33				-	-	
Exterior Door		1			168			15		87%	87%	-	2,190	-		1.00				-	-	-
Program Summary*												**151,220**	**179,926**	**125,219**						**38,285**	**55,393**	**44,343**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

This model is considered proprietary and is provided for the purpose of reviewing the NHSaves programs, not for

ENERGY STAR® Homes

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
ES Homes (SF + MF)	39	21	49		253		25	25	20	100%	100%	-	132,668	-	30.00	39.20	27.00	100%	100%	29,250	20,580	26,460
Cooling SF		16			89			15		100%	100%	-	21,240	-				100%	100%	-	-	-
Water Heating Savings	39	21	49		5	150	20	20	20	100%	100%	-	2,120	147,000	3.50	5.05	3.50	100%	100%	2,730	2,120	3,430
Heating - MF		108			325			25		100%	100%	-	876,600	-		14.52		100%	100%	-	39,200	-
Cooling - MF		72			42			20		100%	100%	-	60,240	-				100%	100%	-	-	-
Water Heating - MF		108			567			20		100%	100%	-	1,224,560	-				100%	100%	-	-	-
LED lighting	195	392	196	30	37	12	5	5	5	100%	100%	29,640	72,442	11,368				100%	100%	-	-	
Lighting and Appliances	39		49	25			20		20	100%	100%	19,500	-	-				100%	100%	-	-	
Clothes washer	2	1	4	124		124	11	11	5	100%	100%	2,726	-	2,478	3.00		3.00	100%	100%	66	-	60
Refrigerator		10			40			12		100%	100%	-	4,756	-				100%	100%	-	-	-
Program Summary*												**51,866**	**2,394,625**	**160,846**						**32,046**	**61,900**	**29,950**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

This model is considered proprietary and is provided for the purpose of reviewing the NHSaves programs, not for

Home Performance with ENERGY STAR®

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Direct Install Water Measures	52		-	-			8			100%	99%	-	-	-	4.15			100%	99%	1,726	-	-
Single Family weatherization	37		39	174		250	20		20	100%	99%	128,760	-	193,050	29.00		35.00	100%	99%	21,460	-	27,027
Thermostat - Standard, 7-Day Programmable	6	1.00	8		-		15	15.00	15	100%	99%	-	-	-	3.20	3.10	3.10	100%	99%	288	46.50	368
Thermostat - WiFI (Cooling & Heating)	11	2	4	52	41		15	15	15	100%	99%	8,658	1,215	-	6.60	6.76	3.50	100%	99%	1,099	203	208
Multifamily weatherization			15			80			20	100%	99%	-	-	23,760			22.00	100%	99%	-	-	6,534
LED Lighting	537	102	324	30	30	30	5	5	5	100%	99%	81,624	15,504	48,756				100%	99%	-	-	
Ancillary Heating		21			118			25		100%	99%	-	62,100	-				100%	99%	-	-	-
Ancillary Coolling		22			69			20		100%	99%	-	30,420	-				100%	99%	-	-	-
Aerator		7			14			7		100%	99%	-	672	-		0.14		100%	99%	-	7	-
Air Sealing		39			55			15		100%	99%	-	32,160	-		14.13		100%	99%	-	8,265	-
Insulation		41			73			25		100%	99%	-	74,678	-		25.88		100%	99%	-	26,525	-
Pipe Wrap- Water Heating		4			-			15		100%	99%	-	-	-		0.13		100%	99%	-	8	-
Program Summary*												**219,042**	**216,749**	**265,566**						**24,573**	**35,054**	**34,137**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

This model is considered proprietary and is provided for the purpose of reviewing the

ENERGY STAR® Products Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Water Heater - Indirect (attached to ES FHW Boiler; Combined eff rating >=85% (EF=.82)		28			-			20		100%	100%	-	-	-		8.00		100%	100%	-	4,480	-
Water Heater - Tankless, On-Demand >=.94	20	26	250		-		19	19	19	100%	100%	-	-	-	9.90	9.90	9.90	100%	100%	3,762	4,891	47,025
Boiler Reset Controls	25		9				15		15	100%	100%	-	-	-	4.50		5.10	100%	100%	1,688	-	689
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	13	7	15		-		18	18	18	100%	100%	-	-	-	11.40	11.00	12.10	100%	100%	2,668	1,386	3,267
Condensing Boiler >= 95% AFUE (Up to 300 MBH)	59	71	43		-		19	19	19	100%	100%	-	-	-	14.10	13.70	14.80	100%	100%	15,806	18,481	12,092
Furnace 95+ AFUE (<150) w/ECM Motor	20	26	5	168	168	168	17	17	17	100%	100%	57,120	74,256	14,280	8.10	8.10	9.80	100%	100%	2,754	3,580	833
Furnace 97+ AFUE (<150) w/ECM Motor	25	22	35	168	168	168	17	17	17	100%	100%	71,400	62,832	99,960	9.20	9.18	10.30	100%	100%	3,910	3,434	6,129
Heat Recovery Ventilator (-133 kWh penalty)	8	1	5	(133)	-	(133)	20	20	20	100%	100%	(21,280)	-	(13,300)	7.70	7.70	7.70	100%	100%	1,232	154	770
Thermostat - Standard, 7-Day Programmable	25	29	50		-		15	15	15	100%	100%	-	-	-	3.20	3.20	3.50	100%	100%	1,200	1,392	2,625
Thermostat - WiFI (Cooling & Heating)	101	53	100	104	104	64	15	15	15	100%	100%	157,560	82,680	96,000	6.60	6.60	3.50	100%	100%	9,999	5,247	5,250
Thermostat - WiFi (Heating Only)	150	214	250		-		15	15	15	100%	100%	-	-	-	6.60	6.60	3.50	100%	100%	14,850	21,186	13,125
Program Summary*												**264,800**	**219,768**	**196,940**						**60,692**	**76,100**	**103,964**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

This model is considered proprietary and is provided for the

Home Energy Reports Program

Measure	Quantity			Measure Life			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
Behavioral Savings	10,000	10,577	9,100	2.61	1.00	2.74	0.50	-	0.21	100%	100%	13,010	-	5,304
Behavioral Savings												-	-	-
Behavioral Savings												-	-	-
Behavioral Savings												-	-	-
Program Summary*												**13,010**	**0**	**5,304**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

This model is considered proprietary and is provided for

Large Business Energy Solutions Programs

Measure	Quantity			Measure Life			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual and 2020 Plan	2018 Plan	2018 Actual	2020 Plan
New Equipment & Construction Track														
Large Business Custom	6		20	14		14	2,065.00		900.44	91%	91%	158,542	-	230,440
Upstream Convection Oven			1			12			35.70		91%	-	-	392
Upstream Fryer			3			12			78.30		91%	-	-	2,576
Upstream Pre-Rinse Spray Valve			2			12			11.40		91%	-	-	250
ALL														
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	1		3	25		25	94.50		94.50	102%	91%	2,412	-	6,478
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	2	3	4	25	25	25	165.30	165.33	165.30	102%	91%	8,439	11,334	15,108
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	2		4	25		25	28.00		28.00	102%	91%	1,429	-	2,559
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	2	17	4	25	25	25	51.40	51.40	51.40	102%	91%	2,624	19,966	4,698
Condensing Boiler >= 96% AFUE (Up to 300 MBH)		2			25			17.70		102%	91%	-	809	-
Infrared Heater, Low Intensity (all sizes)	6		5	17		17	12.00		12.00	102%	91%	1,250	-	932
Steam Trap	10		15	6		6	12.20		8.40	102%	91%	747	-	691
Kitchen - Convection Oven (>= 44% efficiency)	2			12			12.90			102%	91%	316	-	-
Upstream Water Heater - Condensing > 75 MBTUh (EF 0.94)	18		24	15		15	23.05		25.20	102%	91%	6,354	-	8,292
Upstream Water Heater - Indirect			1			15			19.00	102%	91%	-	-	260
Upstream Volume Water Heater >75 MBTUh 94%			2			12			258.30	102%	91%	-	-	5,666
Upstream Volume Water Heater >75 MBTUh 92%	6	5		15	15		233.68	280.11		102%	91%	21,473	19,202	-
Custom - 6 year		17			6			12.20		102%	91%	-	1,137	-
Custom - 7 year		56			7			1.68		102%	91%	-	601	-
Custom - 10 year		2			10			776.35		102%	91%	-	14,192	-
Custom - 15 year		6			15			1,275.63		102%	91%	-	104,934	-
Program Summary*												**203,587**	**172,174**	**278,343**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Small Business Energy Solutions Program

Measure	Quantity			Gross Annual Savings per Unit (kWh)			Measure Life			Installation or Electric Realization Rate		Net Total Lifetime Savings (kWh)			Gross Annual Savings Per Unit (MMBTU)			Non-Electric Realization Rate		Net Total Lifetime Savings (MMBTU)		
	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan	2018 Plan	2018 Actual	2020 Plan	2018	2020	2018 Plan	2018 Actual	2020 Plan
New Equipment & Construction Track																						
Aerator		1						15		100%	100%	-	-	-		1.70		100%	100%	-	26	-
Salon Sprayer		1						15		100%	100%	-	-	-		2.65		100%	100%	-	40	-
Boiler Reset Controls	7		5				15		15	100%	100%	-	-	-	11.40		35.50	100%	100%	1,197	-	2,663
Condensed Unit Heater >= 90% thermal efficiency (up to 300 MBH)	1		3				18		18	100%	100%	-	-	-	40.90		40.90	100%	100%	736	-	2,209
Condensing Boiler >= 90% AFUE (Up to 300 MBH)	10		12				25		25	100%	100%	-	-	-	14.70		14.70	100%	100%	3,675	-	4,410
Condensing Boiler >= 90% thermal efficiency (1000 to 1700 MBH)	1	4	2				25	25	25	100%	100%	-	-	-	94.50	94.50	94.50	100%	100%	2,363	9,450	4,725
Condensing Boiler >= 90% thermal efficiency (1701 to 2000 MBH)	1		2			12	25		25	100%	100%	-	-	580	165.30		165.30	100%	100%	4,133	-	8,265
Condensing Boiler >= 90% thermal efficiency (301 to 499 MBH)	1	9	3			12	25	25	25	100%	100%	-	-	869	28.00	28.00	28.00	100%	100%	700	6,300	2,100
Condensing Boiler >= 90% thermal efficiency (500 to 999 MBH)	12	15	7				25	25	25	100%	100%	-	-	-	51.40	51.40	51.40	100%	100%	15,420	19,275	8,995
Condensing Boiler >= 96% AFUE (Up to 300 MBH)	6	5	5				25	25	25	100%	100%	-	-	-	17.70	17.70	17.70	100%	100%	2,655	2,213	2,213
Furnace 95+ AFUE (<150) w/ECM Motor	4	1	5	168	-	168	18	18	18	100%	100%	12,096	-	15,120	5.70	5.70	5.70	100%	100%	410	103	513
Furnace 97+ AFUE (<150) w/ECM Motor	5		6	168		168	18		18	100%	100%	15,120	-	18,144	6.70		6.70	100%	100%	603	-	724
Infrared Heater, Low Intensity (all sizes)	6		6				17		17	100%	100%	-	-	-	12.00		12.00	100%	100%	1,224	-	1,224
Steam Trap	8		17				6		6	100%	100%	-	-	-	12.20		8.40	100%	100%	586	-	857
Thermostat - WiFI (Cooling & Heating)	60		25				15		15	100%	100%	-	-	-	6.60		3.50	100%	100%	5,940	-	1,313
Thermostat - WiFi (Heating Only)	25		15				15		15	100%	100%	-	-	-	6.60		3.50	100%	100%	2,475	-	788
Kitchen - Convection Oven (>= 44% efficiency)	2	6					12	12		100%	100%	-	-	-	12.90	12.90		100%	100%	310	929	-
Kitchen - Conveyor Oven (>= 44% efficiency)	6						12			100%	100%	-	-	-	88.40			100%	100%	6,365	-	-
Kitchen - Fryer	8	14					12	12		100%	100%	-	-	-	50.80	50.80		100%	100%	4,877	8,534	-
Kitchen - Griddle	3						12			100%	100%	-	-	-	13.10			100%	100%	472	-	-
Kitchen - Rack Oven (>= 50% efficiency)	3						12			100%	100%	-	-	-	211.30			100%	100%	7,607	-	-
Kitchen - Steamer (ES >= 38% efficiency)	3						12			100%	100%	-	-	-	105.40			100%	100%	3,794	-	-
Kitchen - Pre Rinse Sprayers	25		10				8		8	100%	100%	-	-	-	11.40		11.40	100%	100%	2,280	-	912
Pipe Wrap		1						15		100%	100%	-	-	-		46.00		100%	100%	-	690	-
Water Heater - Integrated w/Condensing Boiler >= 90% AFUE	1		3				20		20	100%	100%	-	-	-	24.60		24.60	100%	100%	492	-	1,476
Water Heater - Integrated w/Condensing Boiler >= 95% AFUE	2		4				20		20	100%	100%	-	-	-	30.50		30.50	100%	100%	1,220	-	2,440
Upstream Volume Water Heater >75 MBTUh 94%			2						15	100%	100%	-	-	-			258.30	100%	100%	-	-	7,749
Upstream Volume Water Heater >75 MBTUh 92%	-	4					15	15		100%	100%	-	-	-		338.75		100%	100%	-	20,325	-
Upstream Water Heater - Condensing > 75 MBTUh (EF 0.90)		19	18					15	15	100%	100%	-	-	-		23.05	31.10	100%	100%	-	6,569	8,397
Upstream Water Heater - Indirect	16	30	35				15	15	15	100%	100%	-	-	-	19.00	19.00	19.00	100%	100%	4,560	8,550	9,975
Upstream Water Heater - Tankless, On-Demand >=.94 (< 200 MBTUh .90 EF)	40		5				20		20	100%	100%	-	-	-	8.89		9.00	100%	100%	7,112	-	900
All																						
Custom - 20 year		1			4,680			20		100%	100%	-	93,600	-		162.00		100%	100%	-	3,240	-
Custom - 25 year		1			(21,248)			25		100%	100%	-	(531,200)	-		1,314.40		100%	100%	-	32,860	-
Custom - 15 year		5						15		100%	100%	-	-	-		3.20		100%	100%	-	240	-
Custom - 10 year		1						10		100%	100%	-	-	-		252.40		100%	100%	-	2,524	-
Custom - 6 year		130						6		100%	100%	-	-	-		3.97		100%	100%	-	3,098	-
Custom - Plan	6		8				20		14	100%	100%	-	-	-	222.22		343.75	100%	100%	26,667	-	38,500
Upstream Convection Oven			6						12	100%	100%	-	-	-			35.70	100%	100%	-	-	2,570
Upstream Fryer			11						12	100%	100%	-	-	-			78.30	100%	100%	-	-	10,336
Upstream Pre-Rinse Spray Valve			1						12	100%	100%	-	-	-			11.40	100%	100%	-	-	137
Upstream Rack Oven			1						12	100%	100%	-	-	-			211.30	100%	100%	-	-	2,536
Program Summary*												**27,216**	**(437,600)**	**34,713**						**107,871**	**124,965**	**126,923**

*Program Summary Total Savings Values are Net (Multiplied by the Realization Rate)

Northern Utilities, Inc. -- New Hampshire Division

EEC Budget

	Residential	Low-Income	Gen Service	Total
July-19	$109,630	$5,111	$28,988	$143,729
August-19	$21,362	$32,590	$129,644	$183,595
September-19	$23,851	$36,387	$143,702	$203,939
October-19	$26,547	$40,500	$156,904	$223,951
November-19	$29,243	$44,613	$172,839	$246,696
December-19	$31,939	$48,727	$191,508	$272,174
January-20	$11,078	$5,369	$14,893	$31,340
February-20	$22,156	$10,738	$29,787	$62,681
March-20	$32,382	$15,694	$48,176	$96,252
April-20	$43,460	$21,063	$58,428	$122,950
May-20	$54,538	$26,432	$73,321	$154,291
June-20	$65,616	$31,801	$92,856	$190,273
July-20	$76,693	$37,170	$103,108	$216,971
August-20	$87,771	$42,539	$118,001	$248,311
September-20	$97,997	$47,495	$136,390	$281,883
October-20	$109,075	$52,864	$146,642	$308,581
Total	$843,336	$499,093	$1,645,187	$2,987,616

Budget with Low-Income Costs Allocated to Residential and General Service Classes

	Residential	Low-Income	Gen Service	Total
July-19	$110,391	0	$33,338	$143,729
August-19	$25,546	0	$158,049	$183,595
September-19	$28,529	0	$175,410	$203,939
October-19	$33,379	0	$190,571	$223,951
November-19	$40,212	0	$206,483	$246,696
December-19	$46,211	0	$225,963	$272,174
January-20	$12,781	0	$18,559	$31,340
February-20	$25,603	0	$37,077	$62,681
March-20	$37,203	0	$59,049	$96,252
April-20	$49,828	0	$73,123	$122,950
May-20	$60,893	0	$93,398	$154,291
June-20	$72,346	0	$117,926	$190,273
July-20	$82,454	0	$134,517	$216,971
August-20	$93,193	0	$155,118	$248,311
September-20	$104,591	0	$177,292	$281,883
October-20	$117,885	0	$190,696	$308,581
Total	$941,046	$0	$2,046,570	$2,987,616

EEC Charge Factor Calculation

EEC Charge Factors for Residential Customers

EEC Reconciliation Adjustment	$141,763	Attachment J3 Page 3 Nov '18 - Oct '19 Totals- Nov. 2019 Beginning Balance before Adjustment
Funds Shift to On Bill Financing Mechanism - Residential	$75,000	Adjustment
Revised EEC Reconciliation Adjustment	$216,763	
EEC Costs	$661,947	Attachment J3 Page 3 Nov '19 - Oct '20 Totals- Column 2
EEC Performance Incentive	$46,323	Attachment J3 Page 3 Nov '19 - Oct '20 Totals- Column 3
EEC Low-Income Costs	$81,253	Attachment J3 Nov '19 - Oct '20 Totals- Column 4
EEC Allocated Low-Income Performance Incentive	$5,254	Attachment J3 Page 3 Nov '19 - Oct '20 Totals- Column 5
Total	$1,011,540	
Forecasted Annual Throughput Volumes for Residential Customers	20,251,274	Attachment J3 Page 3 Nov '19 - Oct '20 Totals- Column 6
Energy Efficiency Charge Factor for Residential Customers	**$0.0499**	

EEC Charge Factors for Commercial and Industrial Customers (C&I)

EEC Reconciliation Adjustment	($374,633)	Attachment J3 Page 4 Nov '18 - Oct '19 Totals- Nov 2019 Beginning Balance Before Adjustment
Funds Shift to On Bill Financing Mechanism - C&I	$150,000	Adjustment
Revised EEC Reconciliation Adjustment	($224,633)	
EEC Costs	$1,185,950	Attachment J3 Page 4 Nov '19 - Oct '20 Totals- Column 2
EEC Performance Incentive	$62,727	Attachment J3 Page 4 Nov '19 - Oct '20 Totals- Column 3
EEC Low-Income Costs	$303,252	Attachment J3 Page 4 Nov '19 - Oct '20 Totals- Column 4
EEC Allocated Low-Income Performance Incentive	$17,104	Attachment J3 Page 4 Nov '19 - Oct '20 Totals- Column 5
Total	$1,344,400	
Forecasted Annual Throughput Volumes for C&I Customers	54,499,939	Attachment J3 Page 4 Nov '19 - Oct '20 Totals- Column 6
Energy Efficiency Charge Factor for C&I Customers	**$0.0247**	

Northern Utilities, Inc.

New Hampshire Division

Calculation of the EEC Charge, a Component of the Local Distribution Adjustment Charge

To Be Effective November 1, 2019 through October 31, 2020

Residential Customers

		Beginning Balance (Over)/Under		EEC Rate per Therm	EEC Collections	EEC Costs	DSM PI	Allocated Low Income Costs	Allocated Low Income PI	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Prime Rate	Interest @ Prime Rate	Ending Balance plus Interest (Over)/Under	Therm Sales	# of Days
August-18	Actual	$69,787		$0.0433	$13,671	$59,424	$3,647	$655.04	$38	$119,880	$94,834	4.75%	$377	$120,258	173,410	31
September-18	Actual	$120,258		$0.0433	$14,124	$75,713	$3,647	$13,660.74	$795	$199,949	$160,103	4.75%	$625	$200,574	326,341	30
October-18	Actual	$200,574		$0.0433	$25,381	$68,653	$3,647	$4,030.76	$235	$251,758	$226,166	5.00%	$960	$252,719	586,358	31
November-18	Actual	$252,719		$0.0501	$76,050	$28,089	$3,647	$10,337.03	$602	$219,344	$236,031	5.00%	$970	$220,314	1,636,547	30
December-18	Actual	$220,314		$0.0501	$149,370	$9,125	$3,647	$20,375.61	$1,186	$105,277	$162,795	5.00%	$691	$105,968	2,981,495	31
January-19	Actual	$75,968		$0.0501	$163,191	$60,476	$3,633	$1,369.97	$80	($21,664)	$27,152	5.25%	$121	($21,543)	3,258,067	31
February-19	Actual	($21,543)		$0.0501	$177,904	$163,887	$3,633	$15,885.23	$925	($15,117)	($18,330)	5.25%	($74)	($15,191)	3,551,021	28
March-19	Actual	($15,191)		$0.0501	$155,401	$45,245	$3,633	$9,608.81	$559	($111,546)	($63,368)	5.25%	($283)	($111,828)	3,101,793	31
April-19	Actual	($111,828)		$0.0501	$102,686	$97,972	$3,633	$1,740.13	$101	($111,068)	($111,448)	5.50%	($504)	($111,571)	2,049,591	30
May-19	Actual	($111,571)		$0.0501	$59,962	$32,932	$15,465	($1,326.82)	($77)	($124,541)	($118,056)	5.50%	$301	($124,240)	1,196,802	31
June-19	Actual	($124,240)		$0.0501	$28,905	$149,545	$3,633	$11,965.68	$696	$12,696	($55,772)	5.50%	($252)	$12,443	576,966	30
July-19	Actual	$12,443		$0.0501	$19,621	$109,630	$3,633	$761.19	$44	$106,891	$59,667	5.50%	$207	$107,098	391,722	31
August-19	Forecast	$107,098		$0.0501	$17,366	$21,362	$3,633	$4,185	$220	$119,131	$113,115	5.50%	$528	$119,660	346,627	31
September-19	Forecast	$119,660		$0.0501	$16,992	$23,851	$3,633	$4,679	$220	$135,050	$127,355	5.50%	$576	$135,626	339,165	30
October-19	Forecast	$135,626		$0.0501	$31,781	$26,547	$3,633	$6,833	$289	$141,146	$138,386	5.25%	$617	$141,763	634,345	31
November-19	Forecast	$216,763	1	$0.0499	$75,777	$29,243	$3,633	$10,970	$422	$185,253	$201,008	5.25%	$867	$186,120	1,518,579	30
December-19	Forecast	$186,120		$0.0499	$122,539	$31,939	$3,633	$14,272	$502	$113,927	$150,024	5.25%	$669	$114,596	2,455,688	31
January-20	Forecast	$114,596		$0.0499	$191,456	$11,078	$3,906	$1,703	$600	($59,572)	$27,512	5.25%	$122	($59,450)	3,836,788	31
February-20	Forecast	($59,450)		$0.0499	$180,992	$22,156	$3,906	$3,447	$608	($210,325)	($134,888)	5.25%	($561)	($210,887)	3,627,098	29
March-20	Forecast	($210,887)		$0.0499	$152,514	$32,382	$3,906	$4,821	$581	($321,711)	($266,299)	5.25%	($1,184)	($322,895)	3,056,387	31
April-20	Forecast	($322,895)		$0.0499	$113,924	$43,460	$3,906	$6,368	$572	($382,514)	($352,704)	5.25%	($1,518)	($384,031)	2,283,056	30
May-20	Forecast	($384,031)		$0.0499	$53,591	$54,538	$3,906	$6,355	$455	($372,368)	($378,200)	5.25%	($1,682)	($374,050)	1,073,960	31
June-20	Forecast	($374,050)		$0.0499	$32,869	$65,616	$3,906	$6,731	$401	($330,266)	($352,158)	5.25%	($1,515)	($331,782)	658,694	30
July-20	Forecast	($331,782)		$0.0499	$21,060	$76,693	$3,906	$5,761	$293	($266,189)	($298,986)	5.25%	($1,330)	($267,519)	422,051	31
August-20	Forecast	($267,519)		$0.0499	$16,856	$87,771	$3,906	$5,422	$241	($187,034)	($227,276)	5.25%	($1,011)	($188,045)	337,788	31
September-20	Forecast	($188,045)		$0.0499	$18,982	$97,997	$3,906	$6,594	$263	($98,267)	($143,156)	5.25%	($616)	($98,883)	380,406	30
October-20	Forecast	($98,883)		$0.0499	$29,979	$109,075	$3,906	$8,810	$315	($6,756)	($52,820)	5.25%	($235)	($6,991)	600,779	31
Nov 19 thru Oct 20 Totals					$1,010,539	$661,947	$46,323	$81,253	$5,254						20,251,274	

Forecast therm Sales from Company Forecast as seen in Attachment 2 to Schedule 10 B, Page 2 of 3, filed on September 17, 2019 in the Cost of Gas Docket.
Actual Performance Incentives includes reconciliations from prior year(s).
(1) Includes $75,000 adjustment for Funds Shift for On Bill Financing Mechanism

Northern Utilities, Inc.

New Hampshire Division

Calculation of the EEC Charge, a Component of the Local Distribution Adjustment Charge

To Be Effective November 1, 2019 through October 31, 2020

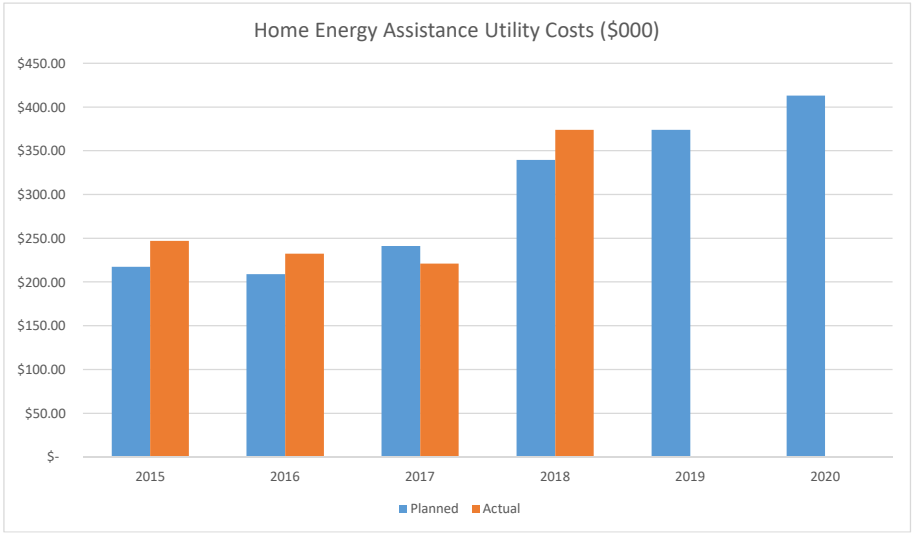
General Service Customers

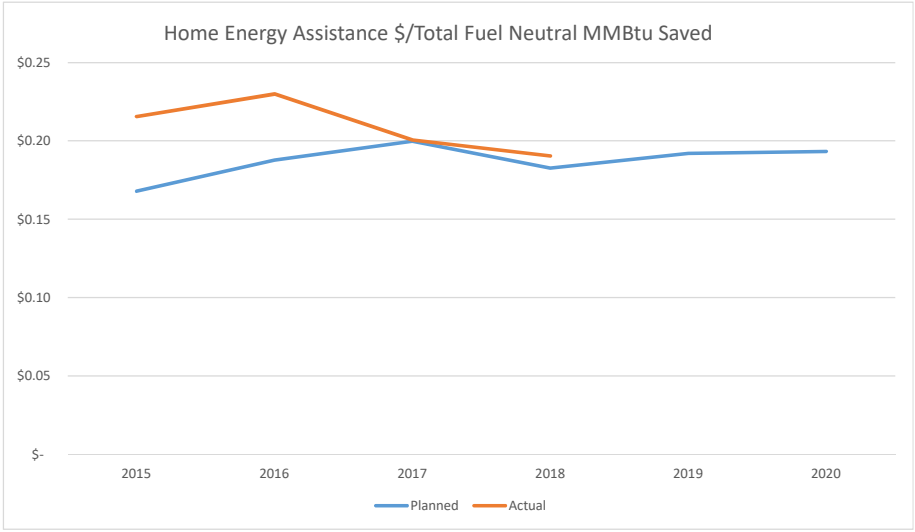
		Beginning Balance (Over)/Under		EEC Rate per Therm	EEC Collections	EEC Costs	DSM PI	Allocated Low Income Costs	Allocated Low Income PI	Ending Balance (Over)/Under	Average Balance (Over)/Under	Interest Prime Rate	Interest @ Prime Rate	Ending Balance plus Interest (Over)/Under	Therm Sales	# of Days
August-18	Actual	($306,653)		$0.0184	$43,338	$49,028	$3,951	$10,221	$595	($286,197)	($296,425)	4.75%	($1,191)	($287,387)	2,488,952	31
September-18	Actual	($287,387)		$0.0184	$43,546	$21,512	$3,951	$99,067	$5,766	($200,638)	($244,012)	4.75%	($953)	($201,590)	2,366,613	30
October-18	Actual	($201,590)		$0.0184	$59,046	$60,302	$3,951	$21,897	$1,274	($173,212)	($187,401)	5.00%	($796)	($174,008)	3,185,345	31
November-18	Actual	($174,008)		$0.0264	$120,926	$65,466	$3,951	$31,578	$1,838	($192,101)	($183,055)	5.00%	($752)	($192,854)	4,999,360	30
December-18	Actual	($192,854)		$0.0264	$177,526	$279,400	$3,951	$45,962	$2,675	($38,393)	($115,623)	5.00%	($491)	($38,884)	6,725,407	31
January-19	Actual	($91,884)		$0.0264	$202,743	$14,990	$4,684	$3,229	$188	($271,536)	($181,710)	5.25%	($810)	($272,346)	7,679,625	31
February-19	Actual	($272,346)		$0.0264	$204,351	$24,628	$4,684	$34,628	$2,015	($410,742)	($341,544)	5.25%	($1,376)	($412,118)	7,740,715	28
March-19	Actual	($412,118)		$0.0264	$190,686	$52,217	$4,684	$22,375	$1,302	($522,225)	($467,171)	5.25%	($2,083)	($524,308)	7,222,952	31
April-19	Actual	($524,308)		$0.0264	$139,172	$52,133	$4,684	$4,476	$260	($601,927)	($563,117)	5.50%	($2,546)	($604,472)	5,271,578	30
May-19	Actual	($604,472)		$0.0264	$106,110	$28,838	$3,793	($4,456)	($259)	($682,666)	($643,569)	5.50%	($3,919)	($686,585)	4,019,262	31
June-19	Actual	($686,585)		$0.0264	$71,282	$23,478	$4,684	$55,997	$3,259	($670,449)	($678,517)	5.50%	($3,067)	($673,516)	2,700,062	30
July-19	Actual	($673,516)		$0.0264	$65,835	$28,988	$4,684	$4,350	$253	($701,076)	($687,296)	5.50%	($3,298)	($704,375)	2,493,737	31
August-19	Forecast	($704,375)		$0.0264	$62,119	$129,644	$4,684	$28,405	$1,494	($602,266)	($653,320)	5.50%	($3,052)	($605,318)	2,352,981	31
September-19	Forecast	($605,318)		$0.0264	$60,684	$143,702	$4,684	$31,708	$1,494	($484,415)	($544,867)	5.50%	($2,463)	($486,878)	2,298,638	30
October-19	Forecast	($486,878)		$0.0264	$82,519	$156,904	$4,684	$33,667	$1,425	($372,717)	($429,797)	5.25%	($1,916)	($374,633)	3,125,708	31
November-19	Forecast	($224,633)	1	$0.0247	$115,039	$172,839	$4,684	$33,644	$1,293	($127,212)	($175,923)	5.25%	($759)	($127,971)	4,657,464	30
December-19	Forecast	($127,971)		$0.0247	$146,435	$191,508	$4,684	$34,455	$1,212	($42,547)	($85,259)	5.25%	($380)	($42,927)	5,928,546	31
January-20	Forecast	($42,927)		$0.0247	$203,971	$14,893	$5,336	$3,666	$1,292	($221,710)	($132,319)	5.25%	($588)	($222,299)	8,257,918	31
February-20	Forecast	($222,299)		$0.0247	$189,461	$29,787	$5,336	$7,291	$1,285	($368,061)	($295,180)	5.25%	($1,228)	($369,289)	7,670,505	29
March-20	Forecast	($369,289)		$0.0247	$170,267	$48,176	$5,336	$10,873	$1,311	($473,860)	($421,574)	5.25%	($1,875)	($475,734)	6,893,412	31
April-20	Forecast	($475,734)		$0.0247	$130,132	$58,428	$5,336	$14,695	$1,321	($526,087)	($500,911)	5.25%	($2,156)	($528,243)	5,268,511	30
May-20	Forecast	($528,243)		$0.0247	$83,798	$73,321	$5,336	$20,077	$1,438	($511,869)	($520,056)	5.25%	($2,313)	($514,182)	3,392,622	31
June-20	Forecast	($514,182)		$0.0247	$60,599	$92,856	$5,336	$25,070	$1,492	($450,026)	($482,104)	5.25%	($2,075)	($452,101)	2,453,418	30
July-20	Forecast	($452,101)		$0.0247	$56,839	$103,108	$5,336	$31,409	$1,600	($367,487)	($409,794)	5.25%	($1,822)	($369,309)	2,301,159	31
August-20	Forecast	($369,309)		$0.0247	$57,117	$118,001	$5,336	$37,117	$1,652	($264,321)	($316,815)	5.25%	($1,409)	($265,729)	2,312,418	31
September-20	Forecast	($265,729)		$0.0247	$58,284	$136,390	$5,336	$40,901	$1,630	($139,756)	($202,743)	5.25%	($872)	($140,628)	2,359,690	30
October-20	Forecast	($140,628)		$0.0247	$74,206	$146,642	$5,336	$44,054	$1,577	($17,224)	($78,926)	5.25%	($351)	($17,575)	3,004,273	31
Nov 19 thru Oct 20 Totals					$1,346,148	$1,185,950	$62,727	$303,252	$17,104						54,499,938	

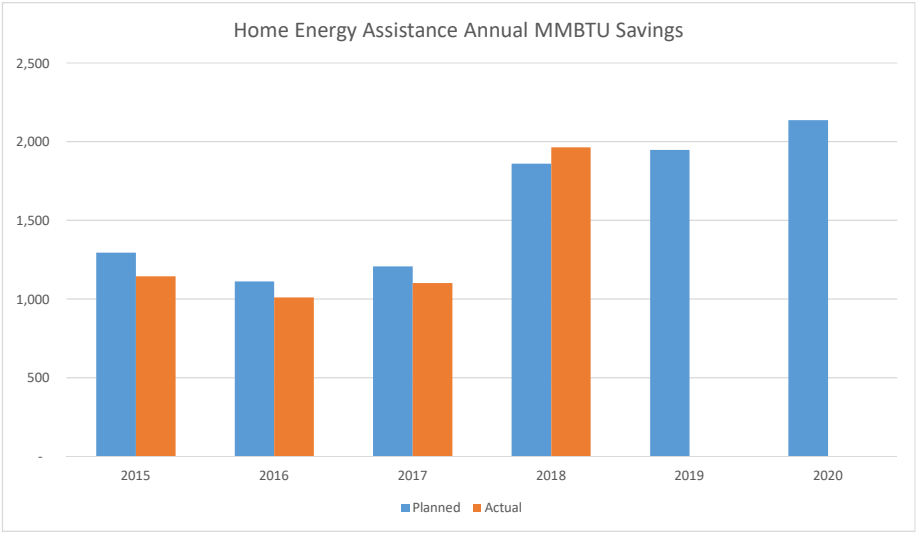
Forecast therm Sales from Company Forecast as seen in Attachment 2 to Schedule 10 B, Page 2 of 3, filed on September 17, 2019 in the Cost of Gas Docket. Does not include Special Contracts.
Actual Performance Incentives includes reconciliations from prior year(s).
(1) Includes $150,000 adjustment for Funds Shift for On Bill Financing Mechanism

Home Energy Assistance

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 217.30	$ 208.88	$ 241.10	$ 339.50	$ 374.03	$ 413.00
Annual MMBTU Savings	1,294	1,112	1,207	1,859	1,947	2,137
$/Total Fuel Neutral MMBtu Saved	$ 0.17	$ 0.19	$ 0.20	$ 0.18	$ 0.19	$ 0.19
Actual						
Utility Costs ($000)	$ 246.88	$ 232.46	$ 221.12	$ 374.00		
Annual MMBTU Savings	1,145	1,011	1,102	1,965		
$/Total Fuel Neutral MMBtu Saved	$ 0.22	$ 0.23	$ 0.20	$ 0.19		

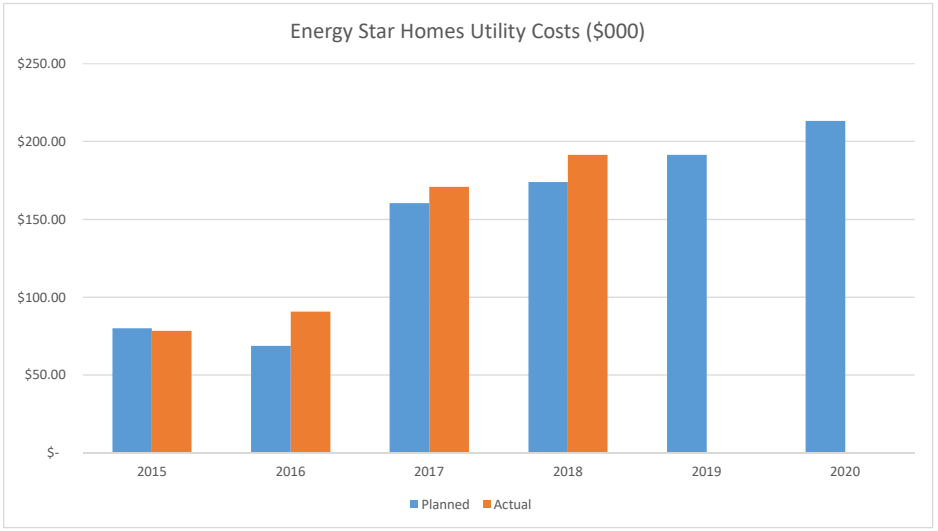


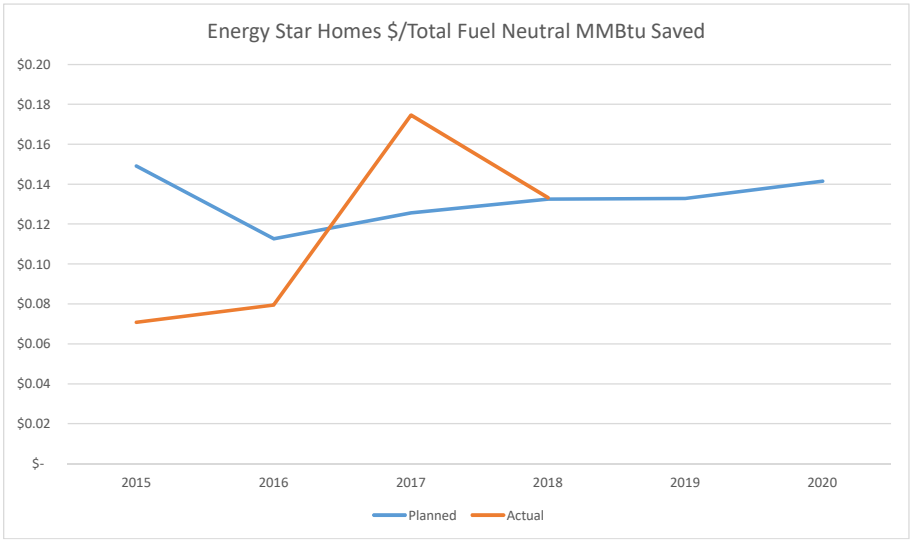


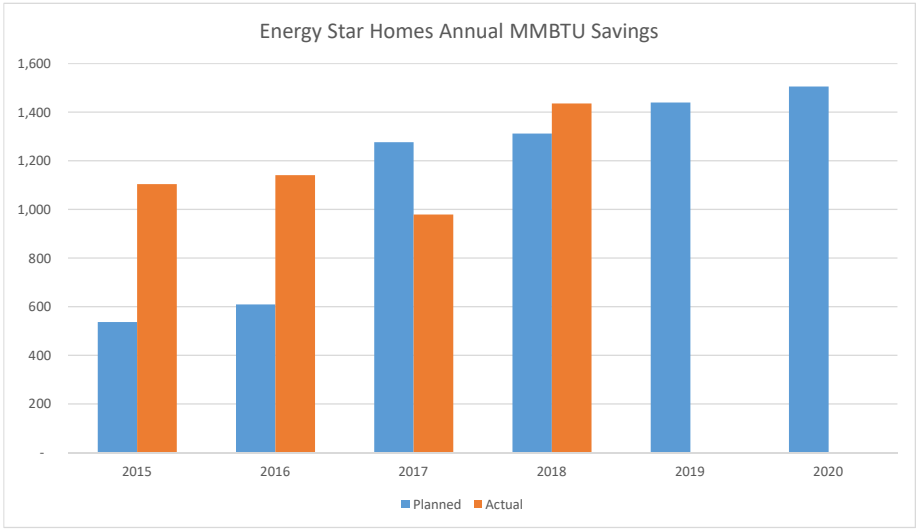


Energy Star Homes

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 80.00	$ 68.75	$ 160.50	$ 174.00	$ 191.40	$ 213.19
Annual MMBTU Savings	536	610	1,277	1,313	1,441	1,507
$/Total Fuel Neutral MMBtu Saved	$ 0.15	$ 0.11	$ 0.13	$ 0.13	$ 0.13	$ 0.14
Actual						
Utility Costs ($000)	$ 78.32	$ 90.66	$ 170.91	$ 191.40		
Annual MMBTU Savings	1,105	1,141	979	1,436		
$/Total Fuel Neutral MMBtu Saved	$ 0.07	$ 0.08	$ 0.17	$ 0.13		

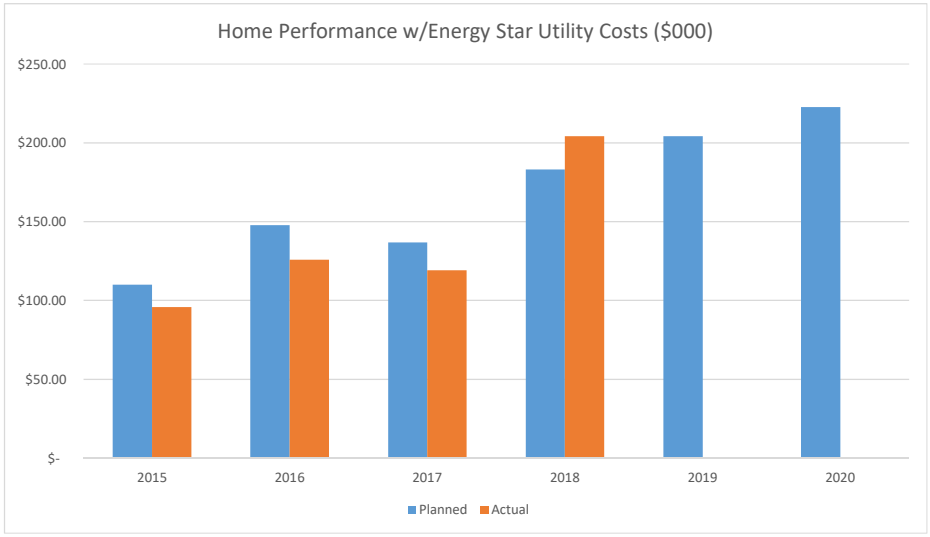


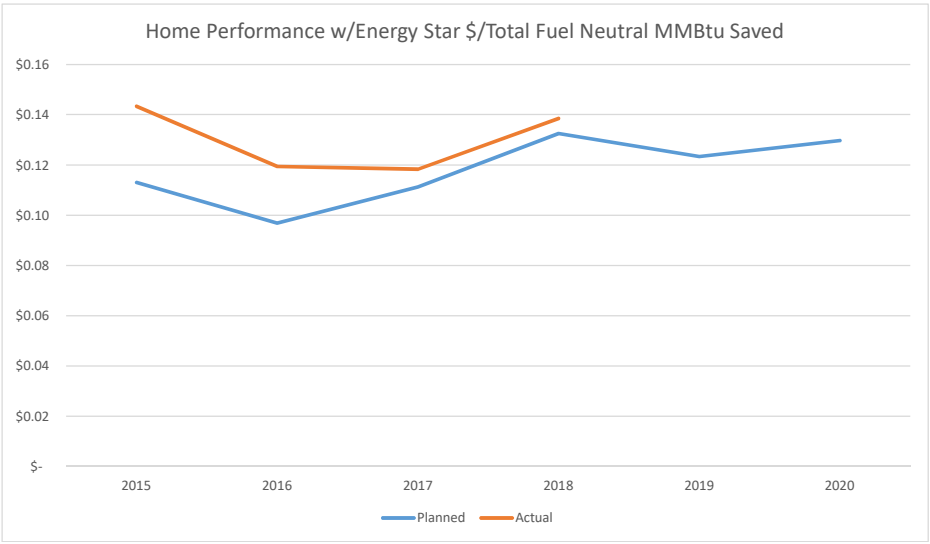


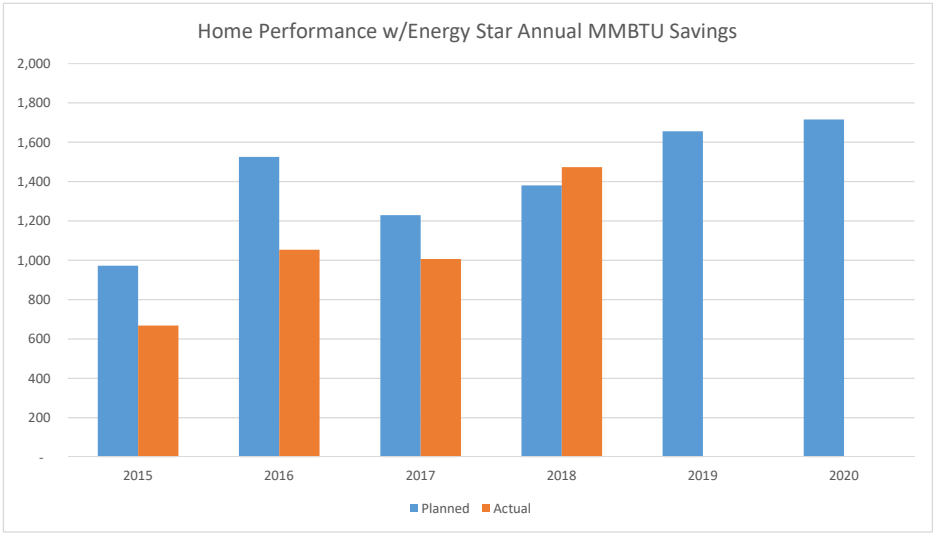


Home Performance w/Energy Star

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 110.00	$ 147.74	$ 136.80	$ 183.00	$ 204.24	$ 222.64
Annual MMBTU Savings	973	1,525	1,229	1,381	1,655	1,716
$/Total Fuel Neutral MMBtu Saved	$ 0.11	$ 0.10	$ 0.11	$ 0.13	$ 0.12	$ 0.13
Actual						
Utility Costs ($000)	$ 95.89	$ 125.90	$ 119.17	$ 204.20		
Annual MMBTU Savings	669	1,054	1,007	1,474		
$/Total Fuel Neutral MMBtu Saved	$ 0.14	$ 0.12	$ 0.12	$ 0.14		

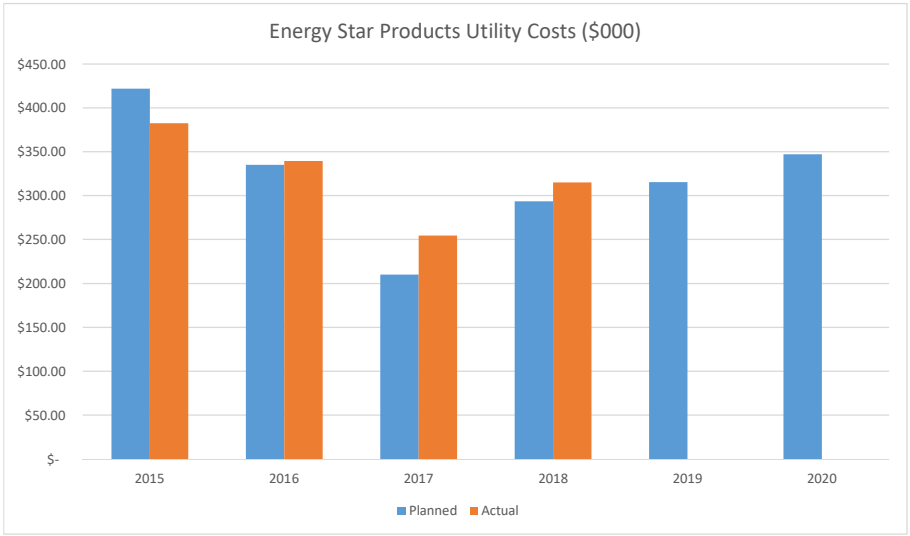


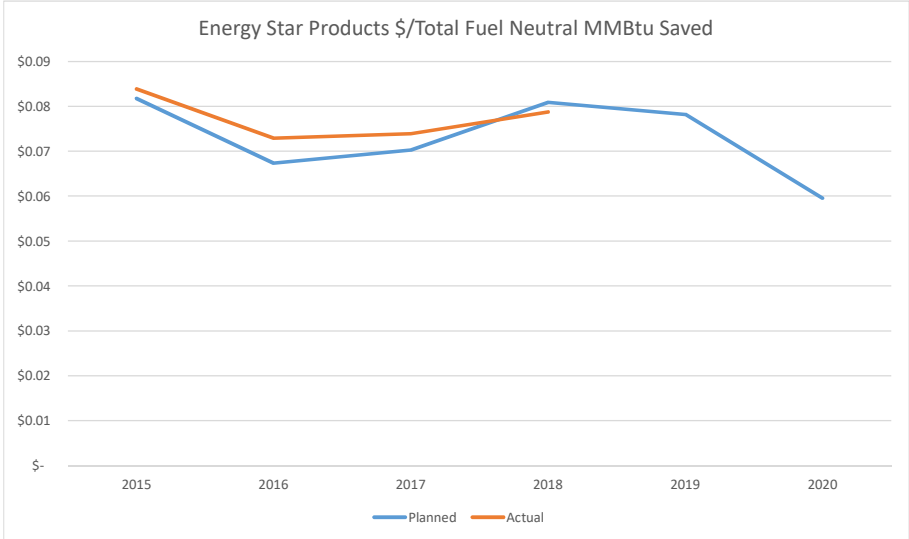


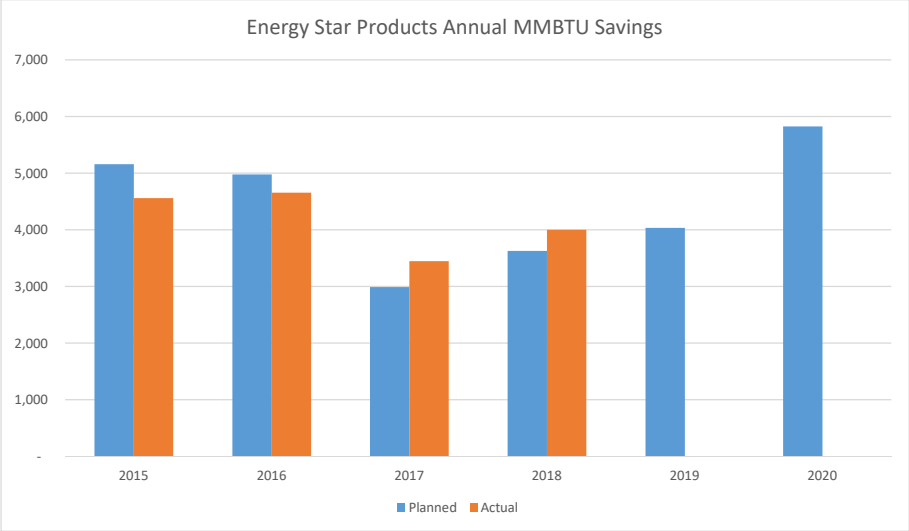


Energy Star Products

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 421.69	$ 335.24	$ 210.00	$ 293.60	$ 315.24	$ 347.11
Annual MMBTU Savings	5,158	4,977	2,988	3,629	4,032	5,827
$/Total Fuel Neutral MMBtu Saved	$ 0.08	$ 0.07	$ 0.07	$ 0.08	$ 0.08	$ 0.06
Actual						
Utility Costs ($000)	$ 382.51	$ 339.47	$ 254.64	$ 315.20		
Annual MMBTU Savings	4,560	4,656	3,444	4,001		
$/Total Fuel Neutral MMBtu Saved	$ 0.08	$ 0.07	$ 0.07	$ 0.08		

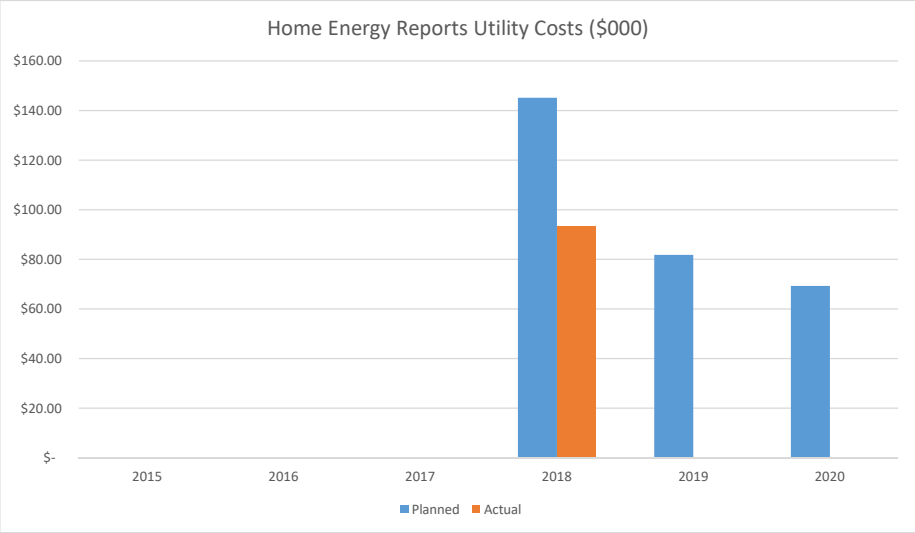


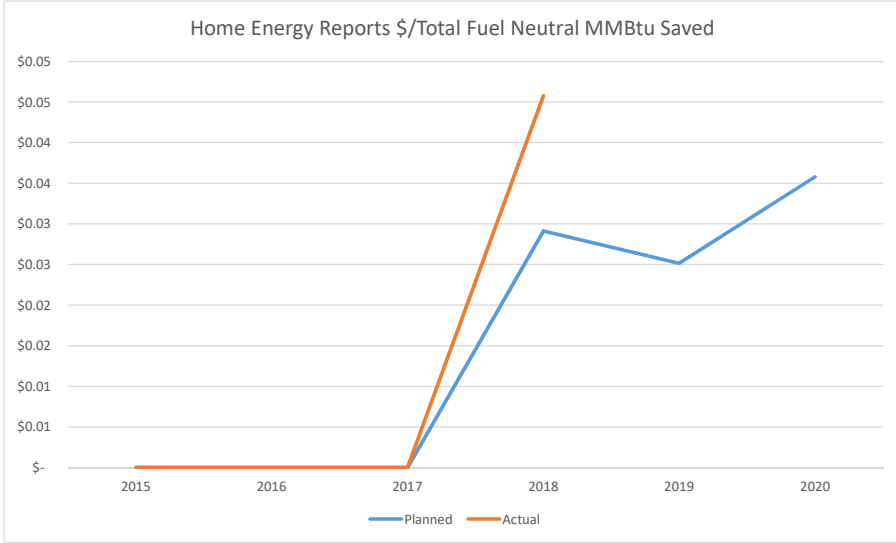


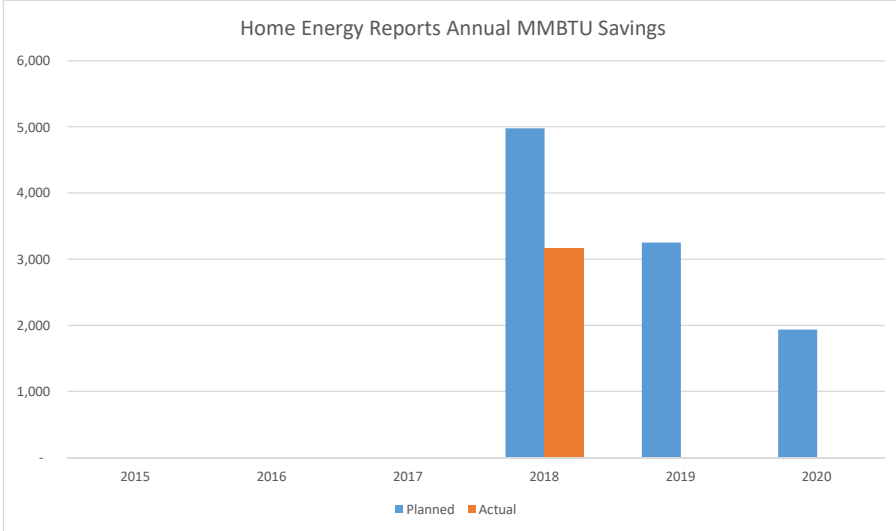


Home Energy Reports

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ -	$ -	$ -	$ 145.10	$ 81.76	$ 69.21
Annual MMBTU Savings	-	-	-	4,980	3,252	1,934
$/Total Fuel Neutral MMBtu Saved				$ 0.03	$ 0.03	$ 0.04
Actual						
Utility Costs ($000)	$ -	$ -	$ -	$ 93.30		
Annual MMBTU Savings	-	-	-	3,170		
$/Total Fuel Neutral MMBtu Saved				$ 0.05		

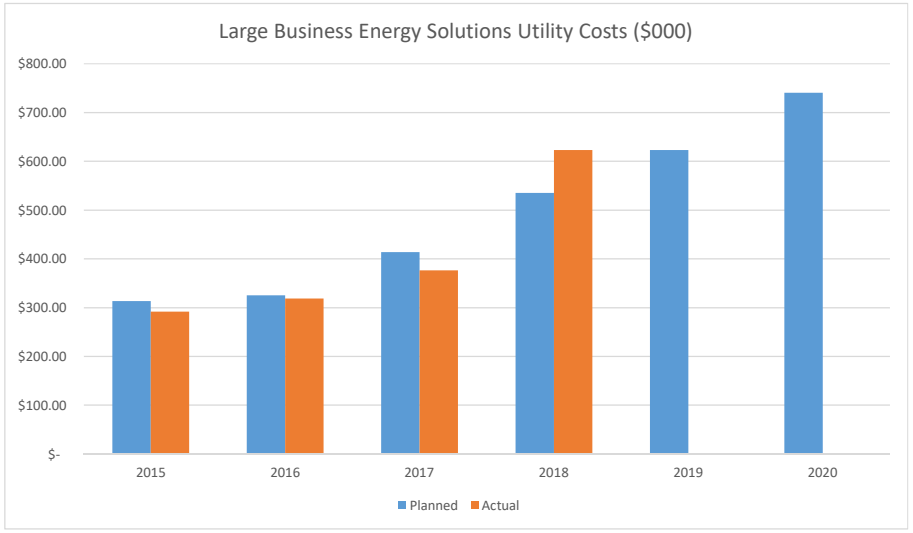


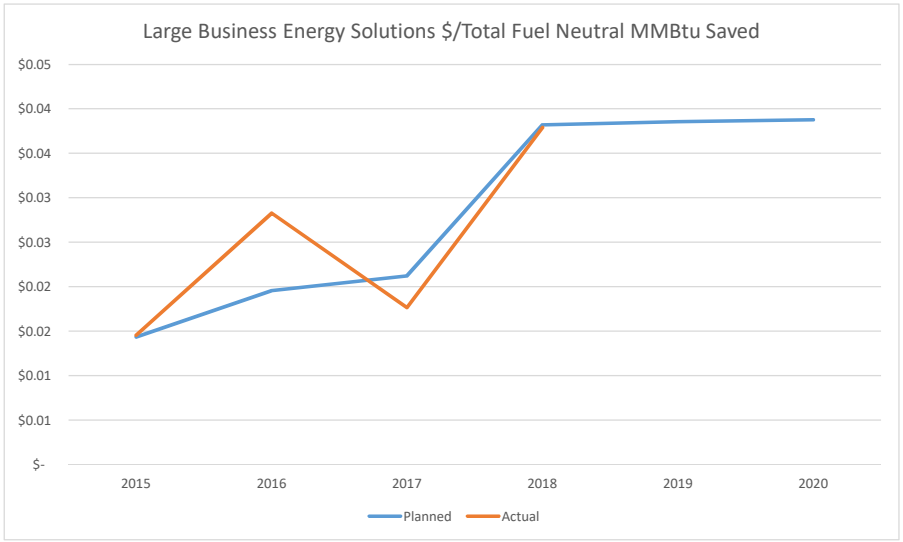


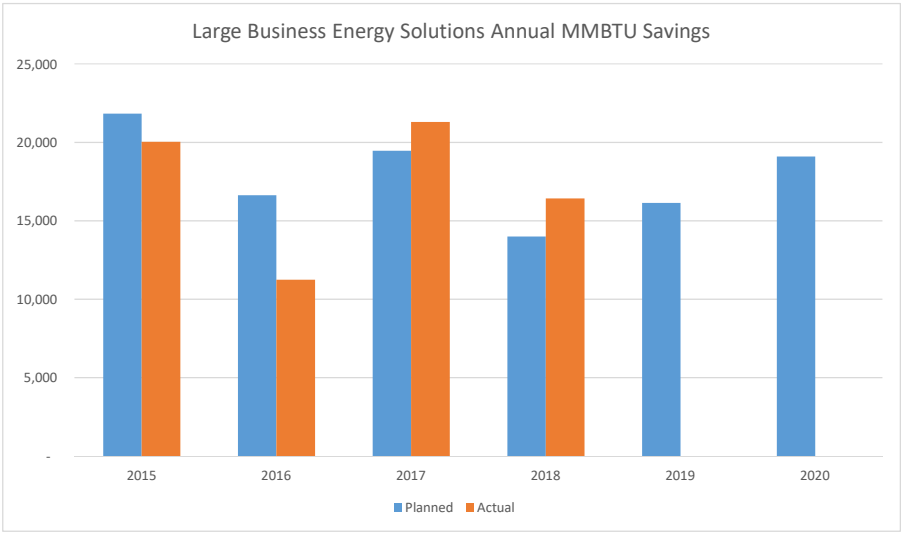


Large Business Energy Solutions

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 313.21	$ 325.31	$ 413.80	$ 535.00	$ 623.03	$ 740.39
Annual MMBTU Savings	21,825	16,626	19,472	14,000	16,150	19,094
$/Total Fuel Neutral MMBtu Saved	$ 0.01	$ 0.02	$ 0.02	$ 0.04	$ 0.04	$ 0.04
Actual						
Utility Costs ($000)	$ 291.70	$ 318.46	$ 376.63	$ 623.00		
Annual MMBTU Savings	20,038	11,252	21,305	16,433		
$/Total Fuel Neutral MMBtu Saved	$ 0.01	$ 0.03	$ 0.02	$ 0.04		

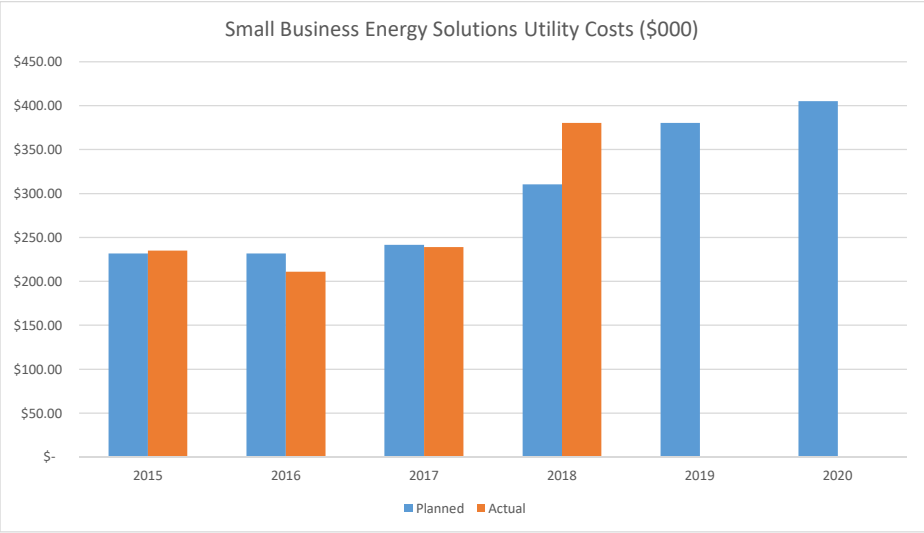


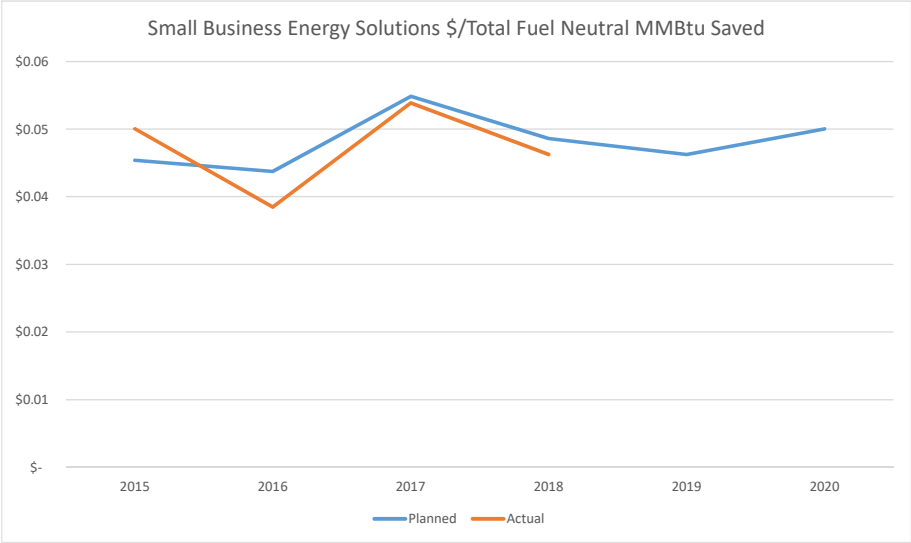


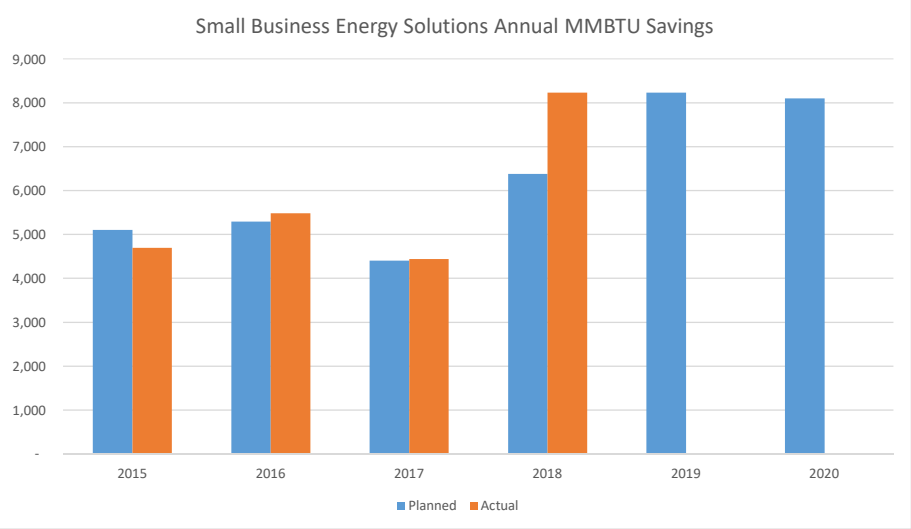


Small Business Energy Solutions

	2015	2016	2017	2018	2019	2020
Planned						
Utility Costs ($000)	$ 231.72	$ 231.72	$ 241.50	$ 310.30	$ 380.55	$ 405.25
Annual MMBTU Savings	5,103	5,297	4,404	6,381	8,229	8,096
$/Total Fuel Neutral MMBtu Saved	$ 0.05	$ 0.04	$ 0.05	$ 0.05	$ 0.05	$ 0.05
Actual						
Utility Costs ($000)	$ 234.95	$ 210.95	$ 239.19	$ 380.50		
Annual MMBTU Savings	4,695	5,483	4,440	8,229		
$/Total Fuel Neutral MMBtu Saved	$ 0.05	$ 0.04	$ 0.05	$ 0.05		







Northern Utilities, Inc.
Calculation of Lost Revenue Rate (LRR)
Effective November 1, 2019

Line	Sector			Reference
	Residential Classes- R5, R6, R10, R11			
1	Sector Ending Balance-October 31, 2019	$	13,709	Page 2, Ln 2, Nov-2019
2	Lost Distribution Revenue-November 2019 through October 2020	$	219,706	Page 2, Ln 12, Total
3	Interest- November 2019 through October 2020	$	(1,699)	Page 2, Ln 25, Total
4	**Total to be recovered**	**$**	**231,716**	Line 1+ Line 2+Line 3
5	Sector Sales - Therms- November 2019 through October 2020		20,251,274	Page 2, Line 15
6	**Lost Revenue Rate ($ per therm)**		**$0.0114**	Line 4 / Line 5
	Commercial & Industrial Classes-G40/T40, G50/T50, G41/T41, G51/T51, G42/T42, G-52/T52			
7	Sector Ending Balance-October 31, 2019		(11,550)	Page 2, Ln 29, Nov-2019
8	Lost Distribution Revenue-November 2019 through October 2020	$	118,441	Page 2, Ln 40, Total
9	Interest- November 2019 through October 2020	$	(526)	Page 2, Ln 53, Total
10	**Total to be recovered**	**$**	**106,365**	Line 7+Line 8+Line 9
11	Sector Sales - Therms- November 2019 through October 2020		54,499,938	Page 2, Line 43
12	**Lost Revenue Rate ($ per therm)**		**$0.0019**	Line 10 / Line 11

Northern Utilities, Inc.
Lost Revenue Reconciliation
2020

Line	Sector / Description	Unit	Estimate Nov-19	Estimate Dec-19	Estimate Jan-20	Estimate Feb-20	Estimate Mar-20	Estimate Apr-20	Estimate May-20	Estimate Jun-20	Estimate Jul-20	Estimate Aug-20	Estimate Sep-20	Estimate Oct-20	Total
1	**RESIDENTIAL**														
2	**Beginning Balance - (Over)/Under**	$'s	$ 13,709	$ 13,212	$ 3,084	$ (22,806)	$ (46,199)	$ (62,885)	$ (70,393)	$ (65,876)	$ (56,059)	$ (42,894)	$ (28,013)	$ (12,782)	
3	**COSTS**														
4	Incremental Annualized Savings	Therms	17,381	18,984	1,706	3,411	4,986	6,691	8,397	10,103	11,809	13,514	15,089	16,794	128,865
5	Incremental Monthly Savings	Therms	1,448	1,582	142	284	415	558	700	842	984	1,126	1,257	1,400	10,739
6															-
7	Cumulative Savings - Current	Therms	1,448	3,030	3,173	3,457	3,872	4,430	5,130	5,972	6,956	8,082	9,339	10,739	65,627
8	Cumulative Savings - Prior	Therms	22,786	22,786	22,786	22,786	22,786	22,786	22,786	22,786	22,786	22,786	22,786	22,786	273,433
9	Cumulative LBR Savings	Therms	24,235	25,817	25,959	26,243	26,658	27,216	27,916	28,758	29,742	30,868	32,125	33,525	339,060
10															
11	Average Distribution Rate	$/Therm	$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6108	$ 0.6108	$ 0.6108	$ 0.6108	$ 0.6108	$ 0.6108	
12	Lost Distribution Revenue	**$'s**	$ 16,759	$ 17,853	$ 17,951	$ 18,147	$ 18,435	$ 18,820	$ 17,052	$ 17,566	$ 18,167	$ 18,855	$ 19,623	$ 20,478	**$ 219,706**
13															
14	**REVENUE**														
15	Sector Sales	Therms	1,518,579	2,455,688	3,836,788	3,627,098	3,056,387	2,283,056	1,073,960	658,694	422,051	337,788	380,406	600,779	20,251,274
16	Lost Revenue Rate	$/Therm	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	$0.0114	
17	Revenue	**$'s**	$ 17,312	$ 27,995	$ 43,739	$ 41,349	$ 34,843	$ 26,027	$ 12,243	$ 7,509	$ 4,811	$ 3,851	$ 4,337	$ 6,849	**$ 230,865**
18															
19	(Over)/Under-Recovery (Exc interest)		$ 13,155	$ 3,070	$ (22,705)	$ (46,007)	$ (62,607)	$ (70,092)	$ (65,585)	$ (55,819)	$ (42,704)	$ (27,889)	$ (12,727)	$ 847	
20															
21	**INTEREST**														
22	Average Monthly Balance		$ 13,432	$ 8,141	$ (9,811)	$ (34,407)	$ (54,403)	$ (66,488)	$ (67,989)	$ (60,848)	$ (49,382)	$ (35,391)	$ (20,370)	$ (5,967)	
23	Interest Rate-WSJ Prime Rate	Annual %	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	Total
24	Days per Month		30	31	31	29	31	30	31	30	31	31	30	31	366
25	Computed Interest	$'s	$ 57	$ 14	$ (101)	$ (191)	$ (278)	$ (302)	$ (292)	$ (240)	$ (190)	$ (124)	$ (55)	$ 4	$ (1,699)
26															
27	**Ending Balance**	**$'s**	$ 13,212	$ 3,084	$ (22,806)	$ (46,199)	$ (62,885)	$ (70,393)	$ (65,876)	$ (56,059)	$ (42,894)	$ (28,013)	$ (12,782)	$ 851	
28	**COMMERCIAL & INDUSTRIAL**														
29	**Beginning Balance - (Over)/Under**	**$'s**	$ (11,550)	$ (9,600)	$ (9,443)	$ (13,673)	$ (16,677)	$ (18,045)	$ (16,085)	$ (15,058)	$ (12,019)	$ (8,428)	$ (4,558)	$ (443)	
30															
31	**COSTS**														
32	Incremental Annualized Savings	Therms	34,374	37,544	3,535	7,070	10,332	13,867	17,402	20,937	24,472	28,006	31,269	34,804	263,612
33	Incremental Monthly Savings	Therms	2,865	3,129	295	589	861	1,156	1,450	1,745	2,039	2,334	2,606	2,900	21,968
34															-
35	Cumulative Savings - Current	Therms	2,865	5,993	6,288	6,877	7,738	8,894	10,344	12,088	14,128	16,462	19,067	21,968	132,710
36	Cumulative Savings - Prior	Therms	51,631	51,631	51,631	51,631	51,631	51,631	51,631	51,631	51,631	51,631	51,631	51,631	619,568
37	Cumulative LBR Savings	Therms	54,495	57,624	57,918	58,508	59,369	60,524	61,974	63,719	65,758	68,092	70,698	73,598	**752,278**
38															
39	Average Distribution Rate	$/Therm	$ 0.1989	$ 0.1989	$ 0.1989	$ 0.1989	$ 0.1989	$ 0.1989	$ 0.1217	$ 0.1217	$ 0.1217	$ 0.1217	$ 0.1217	$ 0.1217	
40	Lost Distribution Revenue	**$'s**	$ 10,840	$ 11,463	$ 11,521	$ 11,638	$ 11,810	$ 12,040	$ 7,540	$ 7,752	$ 8,000	$ 8,284	$ 8,601	$ 8,954	**$ 118,441**
41															
42	**REVENUE**														
43	Sector Sales	Therms	4,657,464	5,928,546	8,257,918	7,670,505	6,893,412	5,268,511	3,392,622	2,453,418	2,301,159	2,312,418	2,359,690	3,004,273	54,499,938
44	Lost Revenue Rate	$/Therm	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	$0.0019	
45	Revenue	**$'s**	$ 8,849	$ 11,264	$ 15,690	$ 14,574	$ 13,097	$ 10,010	$ 6,446	$ 4,661	$ 4,372	$ 4,394	$ 4,483	$ 5,708	**$ 103,550**
46															
47	(Over)/Under-Recovery (Exc interest)	$'s	$ (9,559)	$ (9,401)	$ (13,612)	$ (16,608)	$ (17,965)	$ (16,016)	$ (14,991)	$ (11,967)	$ (8,391)	$ (4,538)	$ (441)	$ 2,803	
48															
49	**INTEREST**														
50	Average Monthly Balance		$ (10,554)	$ (9,501)	$ (11,528)	$ (15,140)	$ (17,321)	$ (17,030)	$ (15,538)	$ (13,512)	$ (10,205)	$ (6,483)	$ (2,500)	$ 1,180	
51	Interest Rate-WSJ Prime Rate	Annual %	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	5.25%	Total
52	Days per Month		30	31	31	29	31	30	31	30	31	31	30	31	366
53	Computed Interest	$'s	$ (41)	$ (42)	$ (61)	$ (69)	$ (80)	$ (69)	$ (67)	$ (51)	$ (37)	$ (20)	$ (2)	$ 12	$ (526)
54															
55	**Ending Balance**	**$'s**	$ (9,600)	$ (9,443)	$ (13,673)	$ (16,677)	$ (18,045)	$ (16,085)	$ (15,058)	$ (12,019)	$ (8,428)	$ (4,558)	$ (443)	$ 2,815	

NOTES:

Line 11 and Line 39, see page 3.
Line 4 and Line 32, see Page 4.

Northern Utilities, Inc.

Summary of Average Distribution Rate for Lost Revenue

Calculation of Average Distribution Rate for Lost Revenue (Detail)

	(1) Number of Customers	(2) Customer Charge	(3)=(1)X(2) Calculated Customer	(4) Billing Determinants - Winter First Therms	(4) Billing Determinants - Winter Excess Therms	(5) Winter Distribution Rates First Therms $/thm	(5) Winter Distribution Rates Excess Therms $/thm	(6) = (4) X (5) Winter Distribution Revenue	(7) Billing Determinants - Summer First Therms	(7) Billing Determinants - Summer Excess Therms	(8) Summer Distribution Rates First Therms $/thm	(8) Summer Distribution Rates Excess Therms $/thm	(9) = (7) X (8) Summer Distribution Revenue
R-5 Residential, Heating	287,086	$22.20	$6,373,309	5,341,166	6,827,281	$ 0.6920	$ 0.6920	$8,420,566	2,678,186	386,967	$ 0.6099	$ 0.6099	$1,869,437
R-10 Residential Heating, Low Income	8,564	$8.88	$76,048	173,482	168,962	$ 0.6920	$ 0.6920	$236,971	78,682	17,691	$ 0.6099	$ 0.6099	$58,778
R-6 Residential, Non-Heating	15,843	$22.20	$351,715	46,057	89,086	$ 0.6470	$ 0.6470	$87,438	51,595	29,715	$ 0.6470	$ 0.6470	$52,607
Total Residential Service	311,493		$6,801,072	5,560,705	7,085,329			$8,744,974	2,808,463	434,373			$1,980,822
G-40 Low Annual, High Winter Use	60,370	$75.09	$4,533,183	1,668,106	5,900,405	$ 0.1865	$ 0.1865	$1,411,527	730,588	797,131	$ 0.1865	$ 0.1865	$284,920
G-50 Low Annual, Low Winter Use	9,691	$75.09	$727,697	185,040	735,257	$ 0.1865	$ 0.1865	$171,635	215,754	593,809	$ 0.1865	$ 0.1865	$150,983
G-41 Medium Annual, High Winter Use	7,812	$222.64	$1,739,264	8,977,469	646	$ 0.2425		$2,177,036	2,538,020		$ 0.1895		$480,955
G-51 Medium Annual, Low Winter Use	3,157	$222.64	$702,874	1,438,249	933,449	$ 0.1712	$ 0.1399	$376,818	1,234,311	636,883	$ 0.1337	$ 0.1087	$234,257
G-42 High Annual, High Winter Use	387	$1,335.81	$516,958	3,841,929		$ 0.1984		$762,239	1,673,749		$ 0.1206		$201,854
G-52 High Annual, Low Winter Use	402	$1,335.81	$536,996	7,009,575		$ 0.1720		$1,205,647	7,739,445		$ 0.0792		$612,964
Total General Service	81,819		$8,756,973	23,120,368	7,569,757			$6,104,902	14,131,866	2,027,823			$1,965,933
Total Company	393,312		$15,558,045	28,681,073	14,655,086			$14,849,877	16,940,329	2,462,196			$3,946,755

Notes:
Column (1),Column (4) and Column (7): 2018 actual billing determinants.
Column (2), Column (5) and Column (8): Winter and Summer distribution rates effective May 1, 2019.

R-11 Rate Class is closed May 1, 2017. R-11 Rate Class Customers migrated to R-6 Rate Class.

Calculation of Average Distribution Rate for Lost Revenue Winter and Summer (Summary)

	(10)=(3) Total Calculated Customer Revenue	(11) = (6) + (9) Total Volumetric Revenue	12=(10+(11) Total Distribution Revenue	(13)=(4)+(7) Total Annual Therms
R-5	$6,373,309	$10,290,003	$16,663,312	15,233,601
R-10	$76,048	$295,749	$371,797	438,817
R-6	$351,715	$140,045	$491,759	216,453
Total Residential Service	$6,801,072	$10,725,796	$17,526,869	15,888,870
G-40	$4,533,183	$1,696,447	$6,229,630	9,096,229
G-50	$727,697	$322,619	$1,050,316	1,729,859
G-41	$1,739,264	$2,657,991	$4,397,255	11,516,135
G-51	$702,874	$611,074	$1,313,949	4,242,893
G-42	$516,958	$964,093	$1,481,051	5,515,678
G-52	$536,996	$1,818,611	$2,355,607	14,749,020
Total General Service	$8,756,973	$8,070,835	$16,827,807	46,849,814
Total Company	$15,558,045	**$18,796,631**	$34,354,676	**62,738,684**

Based on Actual Billing Determinants for 2018 at Current Distribution Rates- Winter

	(1) Total Volumetric Revenue	(2) Total Winter therms	(3)=(1)X(2) Average Distribution Rate $/therm
R-5	$8,420,566	12,168,447	$0.6920
R-10	$236,971	342,444	$0.6920
R-6	$87,438	135,143	$0.6470
Total Residential Service	$8,744,974	12,646,035	**$0.6915**
G-40	$1,411,527	7,568,510	$0.1865
G-50	$171,635	920,297	$0.1865
G-41	$2,177,036	8,978,115	$0.2425
G-51	$376,818	2,371,698	$0.1589
G-42	$762,239	3,841,929	$0.1984
G-52	$1,205,647	7,009,575	$0.1720
Total General Service	$6,104,902	30,690,124	**$0.1989**

Based on Actual Billing Determinants for 2018 at Current Distribution Rates- Summer

	(1) Total Volumetric Revenue	(2) Total Summer therms	(3)=(1)X(2) Average Distribution Rate $/therm
R-5	$1,869,437	3,065,153	$0.6099
R-10	$58,778	96,373	$0.6099
R-6	$52,607	81,309	$0.6470
Total Residential Service	$1,980,822	3,242,836	**$0.6108**
G-40	$284,920	1,527,719	$0.1865
G-50	$150,983	809,562	$0.1865
G-41	$480,955	2,538,020	$0.1895
G-51	$234,257	1,871,194	$0.1252
G-42	$201,854	1,673,749	$0.1206
G-52	$612,964	7,739,445	$0.0792
Total General Service	$1,965,933	16,159,690	**$0.1217**
Total	**$ 18,796,631**	**62,738,684**	

Northern Utilities, Inc.
Gas Savings for LRR Calculation

Planned Gas Savings - 2020	Annual Therms
1. Residential Programs	
2. Home Energy Assistance	21,368
3. EnergyStar® Homes	15,065
4. Home Perf w/ EnergyStar®	17,165
5. EnergyStar® Appliances	58,268
6. Home Energy Reports	19,340
7. Residential	131,206
8.	
9. Commercial & Industrial Programs	
10. Large Business Energy Solutions	190,942
11. Small Business Energy Solutions	80,964
12. Education (Gas)	-
13. Commercial & Industrial	271,906

LBR Savings Allocation	Unit	Estimate Nov-19	Estimate Dec-19	Estimate Jan-20	Estimate Feb-20	Estimate Mar-20	Estimate Apr-20	Estimate May-20	Estimate Jun-20	Estimate Jul-20	Estimate Aug-20	Estimate Sep-20	Estimate Oct-20	Estimate Nov-20	Estimate Dec-20	Nov-19 to Oct-20 Total	Jan-20 to Dec-20 Total
14. Residential Programs		14.1%	15.4%	1.3%	2.6%	3.8%	5.1%	6.4%	7.7%	9.0%	10.3%	11.5%	12.8%	14.1%	15.4%	100.0%	100.0%
15. Annualized Therms	Therms	17,381	18,984	1,706	3,411	4,986	6,691	8,397	10,103	11,809	13,514	15,089	16,794	18,500	20,206	128,865	131,206
16.																	
17. Monthly Incremental	Therms	1,448	1,582	142	284	415	558	700	842	984	1,126	1,257	1,400	1,542	1,684	10,739	10,934
18. Monthly Cumulative	Therms	24,235	25,817	25,959	26,243	26,658	27,216	27,916	28,758	29,742	30,868	32,125	33,525	35,067	36,750	339,060	360,826
19.																	
20. Commercial & Industrial Programs		14%	15%	1.3%	2.6%	3.8%	5.1%	6.4%	7.7%	9.0%	10.3%	11.5%	12.8%	14.1%	15.4%		
21. Annualized Therms	Therms	34,374	37,544	3,535	7,070	10,332	13,867	17,402	20,937	24,472	28,006	31,269	34,804	38,339	41,874	263,612	271,906
22.																	
23. Monthly Incremental	Therms	2,865	3,129	295	589	861	1,156	1,450	1,745	2,039	2,334	2,606	2,900	3,195	3,489	21,968	22,659
24. Monthly Cumulative	Therms	54,495	57,624	57,918	58,508	59,369	60,524	61,974	63,719	65,758	68,092	70,698	73,598	76,793	80,283	752,278	797,234

Northern Utilities, Inc.
Lost Revenue Reconciliation
2019

Line	Sector / Description	Unit	Recast Jan-19	Recast Feb-19	Recast Mar-19	Recast Apr-19	Recast May-19	Recast Jun-19	Recast Jul-19	Estimate Aug-19	Estimate Sep-19	Estimate Oct-19	Total
1	**RESIDENTIAL**												
2	**Beginning Balance - (Over)/Under**	$'s	$ 10,135	$ (2,638)	$ (17,406)	$ (28,736)	$ (32,158)	$ (30,388)	$ (23,653)	$ (15,253)	$ (6,079)	$ 3,892	
3	**COSTS**												
4	Incremental Annualized Savings	Therms	1,603	3,205	4,684	6,287	7,889	9,492	11,094	12,697	14,176	15,779	86,905
5	Incremental Monthly Savings	Therms	134	267	390	524	657	791	925	1,058	1,181	1,315	7,242
6													
7	Cumulative Savings - Current	Therms	134	401	791	1,315	1,972	2,763	3,688	4,746	5,927	7,242	28,979
8	Cumulative Savings - Prior	Therms	15,544	15,544	15,544	15,544	15,544	15,544	15,544	15,544	15,544	15,538	155,434
9	Cumulative LBR Savings	Therms	15,678	15,945	16,335	16,859	17,516	18,307	19,232	20,290	21,471	22,786	184,419
10													
11	Average Distribution Rate	$/Therm	$ 0.6655	$ 0.6655	$ 0.6655	$ 0.6655	$ 0.5879	$ 0.5879	$ 0.5879	$ 0.5879	$ 0.5879	$ 0.5879	
12	Lost Distribution Revenue (Actual thru July)	**$'s**	$ 10,693	$ 10,871	$ 11,131	$ 11,479	$ 10,529	$ 10,994	$ 11,538	$ 11,928	$ 12,623	$ 13,396	**$ 115,181**
13													
14	**REVENUE**												
15	Sector Sales	Therms	3,258,067	3,551,022	3,101,792	2,049,591	1,196,803	576,966	425,956	378,689	370,740	505,546	15,415,172
16	Lost Revenue Rate	$/Therm	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	$0.0072	
17	Revenue	**$'s**	$ 23,454	$ 25,569	$ 22,332	$ 14,756	$ 8,618	$ 4,153	$ 3,067	$ 2,727	$ 2,669	$ 3,640	**$ 110,985**
18													
19	(Over)/Under-Recovery (Exc interest)		$ (2,626)	$ (17,336)	$ (28,608)	$ (32,013)	$ (30,246)	$ (23,546)	$ (15,182)	$ (6,051)	$ 3,874	$ 13,648	
20													
21	**INTEREST**												
22	Average Monthly Balance		$ 3,754	$ (9,987)	$ (23,007)	$ (30,374)	$ (31,202)	$ (26,967)	$ (19,417)	$ (10,652)	$ (1,103)	$ 8,770	
23	Interest Rate-WSJ Prime Rate	Annual %	5.25%	5.25%	5.25%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.25%	Total
24	Days per Month		31	28	31	30	31	30	31	31	30	31	365
25	Computed Interest	$'s	$ (12)	$ (70)	$ (128)	$ (145)	$ (141)	$ (106)	$ (71)	$ (28)	$ 18	$ 61	$ (622)
26													
27	**Ending Balance**	**$'s**	$ (2,638)	$ (17,406)	$ (28,736)	$ (32,158)	$ (30,388)	$ (23,653)	$ (15,253)	$ (6,079)	$ 3,892	$ 13,709	
28	**COMMERCIAL & INDUSTRIAL**												
29	**Beginning Balance - (Over)/Under**	**$'s**	$ (21,857)	$ (24,502)	$ (27,131)	$ (28,907)	$ (27,749)	$ (28,000)	$ (26,206)	$ (22,778)	$ (19,133)	$ (15,173)	
30													
31	**COSTS**												
32	Incremental Annualized Savings	Therms	3,169	6,339	9,264	12,433	15,603	18,772	21,941	25,110	28,036	31,205	171,872
33	Incremental Monthly Savings	Therms	264	528	772	1,036	1,300	1,564	1,828	2,093	2,336	2,600	14,323
34													
35	Cumulative Savings - Current	Therms	264	792	1,564	2,600	3,901	5,465	7,293	9,386	11,722	14,323	57,311
36	Cumulative Savings - Prior	Therms	37,308	37,308	37,308	37,308	37,308	37,308	37,308	37,308	37,308	37,308	373,080
37	Cumulative LBR Savings	Therms	37,572	38,100	38,872	39,908	41,209	42,773	44,601	46,694	49,030	51,631	430,391
38													
39	Average Distribution Rate	$/Therm	$ 0.1913	$ 0.1913	$ 0.1913	$ 0.1913	$ 0.1165	$ 0.1165	$ 0.1165	$ 0.1165	$ 0.1165	$ 0.1165	
40	Lost Distribution Revenue	**$'s**	$ 8,216	$ 8,317	$ 8,465	$ 8,663	$ 5,506	$ 5,691	$ 5,907	$ 6,155	$ 6,431	$ 6,738	**$ 70,088**
41													
42	**REVENUE**												
43	Sector Sales	Therms	7,679,623	7,740,712	7,222,952	5,271,578	4,019,264	2,700,062	1,695,103	1,729,228	1,715,826	2,188,463	41,962,812
44	Lost Revenue Rate	$/Therm	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	$0.0014	
45	Lost Distribution Revenue (Actual thru July)	**$'s**	$ 10,752	$ 10,837	$ 10,112	$ 7,381	$ 5,627	$ 3,779	$ 2,373	$ 2,421	$ 2,402	$ 3,064	**$ 58,747**
46													
47	(Over)/Under-Recovery (Exc interest)	$'s	$ (24,393)	$ (27,022)	$ (28,778)	$ (27,625)	$ (27,870)	$ (26,088)	$ (22,672)	$ (19,044)	$ (15,104)	$ (11,498)	
48													
49	**INTEREST**												
50	Average Monthly Balance		$ (23,125)	$ (25,762)	$ (27,955)	$ (28,266)	$ (27,810)	$ (27,044)	$ (24,439)	$ (20,911)	$ (17,119)	$ (13,335)	
51	Interest Rate-WSJ Prime Rate	Annual %	5.25%	5.25%	5.25%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.25%	Total
52	Days per Month		31	28	31	30	31	30	31	31	30	31	365
53	Computed Interest	$'s	$ (109)	$ (109)	$ (128)	$ (125)	$ (130)	$ (118)	$ (106)	$ (89)	$ (68)	$ (51)	$ (1,033)
54													
55	**Ending Balance**	**$'s**	$ (24,502)	$ (27,131)	$ (28,907)	$ (27,749)	$ (28,000)	$ (26,206)	$ (22,778)	$ (19,133)	$ (15,173)	$ (11,550)	

Note: Recast denotes change from accounting records. Savings recast to match original budget. Lost revenue is calculated based on original estimated savings. The final reconciliation using actual savings will be provided in the June 2020 filing. The Average Distribution rate for Residential and C&I Classes for the months of January through April 2019 are from the 2019 Plan Compliance Filing (LRR Page 4 of 22) in Docket No. DE 17-136 on June 1, 2019.

Calculation of Lost Revenues - Northern Utilities, Inc.
Year 2020
Savings and lost revenues are estimated based on a calendar year. Does not include prior cumulative savings.

	Annualized	"Installed" Savings												
	Therm Savings	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential														
Jan	1,706	142	142	142	142	142	142	142	142	142	142	142	142	1,706
Feb	3,411		284	284	284	284	284	284	284	284	284	284	284	3,127
Mar	4,986			415	415	415	415	415	415	415	415	415	415	4,155
Apr	6,691				558	558	558	558	558	558	558	558	558	5,019
May	8,397					700	700	700	700	700	700	700	700	5,598
Jun	10,103						842	842	842	842	842	842	842	5,893
Jul	11,809							984	984	984	984	984	984	5,904
Aug	13,514								1,126	1,126	1,126	1,126	1,126	5,631
Sep	15,089									1,257	1,257	1,257	1,257	5,030
Oct	16,794										1,400	1,400	1,400	4,199
Nov	18,500											1,542	1,542	3,083
Dec	20,206												1,684	1,684
Total	131,206	142	426	842	1,400	2,099	2,941	3,925	5,051	6,309	7,708	9,250	10,934	51,028
		142	569	1,410	2,810	4,909	7,850	11,776	16,827	23,136	30,844	40,094	51,028	
Proposed Distribution Rate		$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6915	$ 0.6108	$ 0.6108	$ 0.6108	$ 0.6108	0.6108	$ 0.6108	$ 0.6915	$ 0.6915	
Lost Revenue		$ 98	$ 393	$ 975	$ 1,943	$ 2,999	$ 4,795	$ 7,193	$ 10,279	$ 14,132	$ 18,841	$ 27,726	$ 35,287	**$ 124,661**
C&I														
Jan	3,535	295	295	295	295	295	295	295	295	295	295	295	295	3,535
Feb	7,070		589	589	589	589	589	589	589	589	589	589	589	6,480
Mar	10,332			861	861	861	861	861	861	861	861	861	861	8,610
Apr	13,867				1,156	1,156	1,156	1,156	1,156	1,156	1,156	1,156	1,156	10,400
May	17,402					1,450	1,450	1,450	1,450	1,450	1,450	1,450	1,450	11,601
Jun	20,937						1,745	1,745	1,745	1,745	1,745	1,745	1,745	12,213
Jul	24,472							2,039	2,039	2,039	2,039	2,039	2,039	12,236
Aug	28,006								2,334	2,334	2,334	2,334	2,334	11,669
Sep	31,269									2,606	2,606	2,606	2,606	10,423
Oct	34,804										2,900	2,900	2,900	8,701
Nov	38,339											3,195	3,195	6,390
Dec	41,874												3,489	3,489
Total	271,906	295	884	1,745	2,900	4,351	6,095	8,135	10,468	13,074	15,975	19,169	22,659	105,749
		295	1,178	2,923	5,823	10,174	16,269	24,404	34,872	47,946	63,921	83,090	105,749	
Proposed Distribution Rate		$ 0.1963	$ 0.1963	$ 0.1963	$ 0.1963	$ 0.1216	$ 0.1216	$ 0.1216	$ 0.1216	$ 0.1216	$ 0.1216	$ 0.1963	$ 0.1963	
Lost Revenue		$ 58	$ 231	$ 574	$ 1,143	$ 1,238	$ 1,979	$ 2,968	$ 4,242	$ 5,832	$ 7,775	$ 16,307	$ 20,754	**$ 63,101**
Total Lost Revenue														**$ 187,762**

THE STATE OF NEW HAMPSHIRE

BEFORE THE PUBLIC UTILITIES COMMISSION

JOINT PREPARED TESTIMONY OF

CHRISTOPHER GOULDING, MARC E. LEMÉNAGER,

HEATHER M. TEBBETTS, AND CAROL M. WOODS

PROPOSED 2020 SYSTEM BENEFITS CHARGE RATE CHANGE
AND
GAS INFORMATIONAL ENERGY EFFICIENCY CHARGE AND LOST REVENUE RATE

Docket No. DE 17-136

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, by whom you are employed and in what capacity.

A. Christopher Goulding: I am the Director of Rates and Revenue Requirements for Unitil Service Corp., an affiliate of Northern Utilities, Inc. ("Northern") and Unitil Energy Systems, Inc. (Unitil), which are all subsidiaries of Unitil Corporation. My responsibilities include all rate and regulatory filings related to the financial requirements of Northern and Unitil's other subsidiaries.

Marc E. Leménager: I am an Analyst for New Hampshire Revenue Requirements for Eversource Energy Service Company. My primary responsibilities are supporting the coordination and implementation of revenue requirements calculations for Eversource in New Hampshire.

Heather M. Tebbetts: I am the Manager of Rates and Regulatory Affairs for Liberty Utilities Service Corp. and in this capacity, am responsible for providing regulatory services for the Liberty Utilities operating companies.

Carol M. Woods: I am an Energy Solutions Executive for New Hampshire Electric Cooperative. My responsibilities include management of planning and regulatory support for the company's energy efficiency programs.

Q. Have you previously testified before the Commission?

A. Yes, we have.

Q. What is the purpose of your testimony?

A. The purpose of our testimony is: (1) to present and support the calculation of the Energy Efficiency ("EE") component of the System Benefits Charge ("SBC") proposed for effect January 1, 2020; and (2) to present and support the calculation of the lost base revenue ("LBR") component of the SBC proposed for effect January 1, 2020. Our testimony explains what is contained in Attachments E3, F3, G3, and H3, which provide the calculations of the EE and LBR rate components for each electric distribution utility. The testimony provides a detailed explanation of the changes made to the LBR rate component starting on January 1, 2020 in order to address the Settlement approved by the Commission in Order No. 26,095 in Docket DE 17-136. In addition, the testimony will also present the Energy Efficiency Charge ("EEC") and Lost Revenue Rate ("LRR") for Northern. These rate calculations are presented in Attachments J3 (EEC) and J5 (LRR) and are being provided for informational purposes. The proposed EEC and LRR will be

filed in Northern's upcoming annual Cost of Gas filing that will be submitted to the Commission on or before September 17, 2019.

EnergyNorth is providing a reconciliation of lost revenues in Attachment I4 as the Company's decoupling mechanism approved in Order No. 26,122 in Docket No. DG 17-048, thus the lost revenue mechanism is no longer effective outside of the reconciliation of previous periods.

II. EE COMPONENT OF THE SBC

Q. What is the proposed EE Component of the SBC?

A. The proposed statewide EE rate for effect January 1, 2020 is $0.00528 per kWh. This is an increase of $0.00155 per kWh from the current statewide EE rate of $0.00373 per kWh.

Q. How was the EE rate calculated?

A. With a statewide savings target of 1.30% in 2020, the Utilities are planning for 140,180 MWh in expected savings, and an overall average cost to achieve the kWh savings of $0.49, the total required funding is $69.303 million. Of this amount, an estimated $12.999 million will be funded through proceeds from the Forward Capacity Market, RGGI, and unspent funds from previous program years. The remaining balance of $56.303 million divided by the forecasted delivery sales of 10,663,607MWh results in a statewide EE rate of $0.00528 per kWh. These calculations are further broken down by each utility on page 1 of Attachments E3 (Eversource), F3 (Liberty), G3 (NHEC), and H3

(Unitil). Page 2 provides actual and forecasted monthly revenues and expenses for the 2019 program year while Page 3 provide the forecasted monthly revenue and expenses for the 2020 program year.

III. LBR COMPONENT OF THE SBC

Q. What is the proposed LBR Component of the SBC?

A. The proposed LBR rates differ by utility. Eversource's proposed LBR rate is $0.00075 per kWh, which is an increase from the current rate of $0.00063 per kWh. Liberty's proposed LBR rate is $0.00034 per kWh, which is an increase from the current rate of $0.00012 per kWh. Unitil's proposed LBR rate is $0.00074 per kWh, which is an increase from the current rate of $0.00053 per kWh. Lost revenues do not apply to NHEC; therefore, an LBR rate is not utilized by NHEC.

Q. How was the LBR rate calculated?

A. As shown on Page 4 of Attachments E3 (Eversource), G3 (Liberty), and H3 (Unitil), the sum of the forecast lost base revenue, plus the prior year balance, plus current year interest, is divided by the forecast deliveries to arrive at the proposed rate. Page 5 provides the supporting savings calculations for the 2020 lost revenues. Page 6 provides a reconciliation of the actual and forecasted monthly revenues collected from the LBR rate during 2019. Page 7 provides a reconciliation of monthly revenues collected from the LBR rate and estimated lost revenue for 2020. Page 8 provides a computation of the average sector distribution rates for use in the lost revenue calculation. Additional details supporting the average rate calculation starts on Page 10.

Q. Are there changes in the way that lost base revenue is calculated in 2020?

A. No. 2020 LBR is calculated consistent with the way 2019 LBR was calculated. As demonstrated on Page 5 of Attachments E3 (Eversource), G3 (Liberty), and H3 (Unitil), measures installed after 2018 have their lost base revenue calculated by adding two "separate" calculations; the kWh savings are multiplied by the sector's kWh LBR Average Distribution Rate, then the kW savings are multiplied by the sector's kW LBR Average Distribution Rate. The addition of these two calculations results in the total lost base revenue for measures installed. For all measures installed on or after January 1, 2019, this method is used to calculate lost base revenue for the life of the measure.

IV. TOTAL SBC AND BILL IMPACTS

Q. What is the total proposed SBC?

A. As shown on Attachments E3 (Eversource), F3 (Liberty), G3 (NHEC), and H3 (Unitil). the total proposed SBC is $0.00753 per kWh for Eversource, $0.00712 per kWh for Liberty, $0.00678 per kWh for NHEC, and $0.00752 per kWh for Unitil. The SBC consists of the EE and LBR rate components discussed above and the Electric Assistance rate component of $0.00150.

Q. Have you provided bill impacts associated with the proposed SBC?

A. Yes. The bill impact for a typical residential and C&I customer is provided on Page 9 of Attachments E3 (Eversource), F3 (Liberty), G3 (NHEC), and H3 (Unitil).

Q. Do the utilities require Commission approval of the SBC billed to customers by a specific date?

A. Yes, the utilities request approval of the SBC by December 21, 2019, in order to implement the new rate for service rendered on and after January 1, 2020.

V. NORTHERN'S EEC AND LRR

Q. Turning to gas, what is Northern presenting for the EEC and LRR?

A. Northern is presenting the EEC and LRR in Attachments J3 (EEC) and J5 (LRR). These attachments are being provided for informational purposes only at this time. The final proposed rates will be filed in Northern's upcoming Annual Cost of Gas filing due on or before September 17, 2019.

Q. **What is the purpose of the EEC?**

A. The purpose of the EEC is to recover from firm ratepayers Energy Efficiency program costs and performance incentives.

Q. **What are the changes to the EEC?**

A. The EEC for the residential classes is projected to decrease from $0.0501 per therm to $0.0499 per therm, and the EEC is projected to decrease from $0.0264 per therm to $0.0247 per therm for the commercial and industrial customer classes effective November 1, 2019. The rate calculation is provided on Attachment J3, Page 2 of 4.

Q. **What is the purpose of the "Funds Shift to On Bill Financing Mechanism" line items for Residential and C&I Customers as shown in the rate calculation on Attachment J3, Page 2 of 4?**

A. These funds, $75,000 for Residential Customers and $150,000 for C&I Customers, are to seed the on-bill financing effort to cover customers' share of Energy Efficiency costs.

Q. **Please describe the reason for these changes to and describe the derivation of the EEC.**

A. The changes to the EEC are necessitated by the implementation of Northern's calendar year 2020 energy efficiency program budget. That budget is provided in Attachment J3, Page 1 of 4. The EEC is provided on Page 2 of 4. As shown, the rate is derived by customer class and includes an annual reconciliation of the program costs and performance incentives with an adjustment for the low-income discount costs. The projected reconciliation of costs and revenues is provided on Pages 3 and 4 for the residential classes and commercial and industrial classes, respectively.

Q. **What is the LRR calculated for effect November 1, 2019?**

A. The calculated LRR for the residential classes is $0.0114 per therm and the LRR for the Commercial classes is $0.0019 per therm. This is an increase of $0.0042 from the currently
effective rate of $0.0072 for Residential Customers and an increase of $0.0005 from the currently effective rate of $0.0014 for C&I Customers.

Q. **Please explain the calculation of the proposed LRR?**

A. The calculation of the LRR is provided on Attachment J5. As shown on Page 1 of 6, the LRR for each sector (residential and commercial/industrial) is derived by dividing the projected annual lost revenue, plus the reconciliation balance, plus projected interest, by forecast firm annual throughput. Page 2 of 6 provides the projected reconciliation of costs and revenue for the period November 2019 through October 2020. This page also provides the calculation of estimated lost distribution revenue based on estimated savings. Page 3 of 6 provides the calculation of the Company's average distribution rates by sector that is used in the calculation of estimated lost revenue beginning May 1, 2019. Page 4 of 6 provides further detail for the estimated savings that are used in the calculation of lost revenue on Page 2 of 6. Page 5 of 6 reconciles lost revenue for the term January 2019 through June 2019 and provides estimates for the term August 2019 through October 2020. [1] Page 6 of 6 is the calculation of lost revenues for calendar year 2020. This does not include prior cumulative savings.

Q. **Will Northern be updating the EEC and LRR?**

A. Yes. As previously indicated, Northern is providing the EEC and LRR schedules for informational purposes only and is not seeking approval the EEC and LLR through this docket. The EEC and LRR will be filed in the upcoming Annual 2019 Cost of Gas Filing that will be submitted to the Commission on, or before, September 17, 2019.

[1] Northern is booking lost revenue based on original estimated savings. The final reconciliation of lost revenue using actual savings will be provided in the June 2020 filing.

VI. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.

3. Summary of Utility Spreadsheets from Discovery Incorporating all Known Corrections for Settlement Purposese

Line No.	Description	Eversource	Liberty	Unitil	Total
1	Gross Annualized kWh Savings	106,615,917	7,486,363	10,947,865	125,050,145
2	Maximum Demand Factor (MDF)	Varies based on measure mix	Varies based on measure mix	Varies based on measure mix	
3	Extended Max. Load Reduction kW	18,933	1,444	2,053	22,430
4	% kW Demand Reduction at Customer Peak	Varies based on measure mix	Varies based on measure mix	Varies based on measure mix	
5	Sub-Total Customer Peak kW Reduction	12,618	1,153	1,101	14,872
6	% Net to Gross	100.00%	100.00%	100.00%	
7	Sub-Total Customer Peak kW Reduction	12,618	1,153	1,101	14,872
8	% In-Service Rate	100.00%	100.00%	100.00%	
9	Sub-Total Customer Peak kW Reduction	12,618	1,153	1,101	14,872
10	% kW Realization Rate	Varies based on measure mix	Varies based on measure mix	Varies based on measure mix	
11	Sub-Total Customer Peak kW Reduction	12,195	1,144	1,101	14,441
12	% Billing Adjustment to Reflect Ratchets (1)	100.00%	100.00%	100.00%	
13	Sub-Total Customer Peak kW Reduction	12,195	1,144	1,101	14,441
14	% Retirement Adjustment	100.00%	100.00%	100.00%	
15	Total Customer Peak kW Reduction, Full Year	12,195	1,144	1,101	14,441
16	% Annual Savings Achieved in First Year	50.00%	50.00%	50.00%	
17	Total Customer Peak Red. in First Year	6,098	572	551	7,221
18	Annualized (x12)	73,173	6,866	6,608	86,647
19	Average Distribution Rate (ADR)	$ 6.44	$ 7.65	$ 9.14	
20	Total C&I kW LBR	$ 471,548	$ 52,527	$ 60,397	$ 584,472

Comments:
Above schedule mirrors the Template recommended by the LBRWG Report (p.6)
Line 17 for Liberty only includes kW savings associated with its G-1 customer class.

DE 17-136
Illustrative Calculation of LBR for Year 2020 (cumulative 2017-2020)
Summary Based on Eversource

Eversource Energy
NHPUC Docket No. DE 17-136
2020 Update
Attachment L2
Page 1 of 1

	Description	Residential kWh	Commercial kWh	C&I kW	Total	Ref.
	Legacy (Measures Installed in 2017 and 2018): (1)					
1	Program Year 2017 Actual LBR Savings (2)	12,914,336	41,328,682	-	54,243,018	DE 17-136, May 31, 2019 filing P.11 of 16, Less Retirements
2	2019 Average Distribution Rate (ADR)	$ 0.04037	$ 0.02609	$ -		Attachment E3 P.5
3	Sub-Total LBR	$ 521,346	$ 1,078,349	$ -	$ 1,599,695	Line 1 * Line 2
4	Program Year 2018 Actual LBR Savings	15,799,555	57,048,205	-	72,847,760	DE 17-136, May 31, 2019 filing P.11 of 16
5	2019 Average Distribution Rate (ADR)	$ 0.04037	$ 0.02609	$ -		Attachment E3 P.5
6	Sub-Total LBR	$ 637,821	$ 1,488,503	$ -	$ 2,126,325	Line 4 * Line 5
7	Sub-Total Legacy (Measures Installed in 2017 and 2018)*	28,713,891	94,971,106	-	127,090,778	Line 1 + Line 4, adjusted for 110% LBR cap
8	Sub-Total Legacy LBR**	$ 676,181	$ 1,445,494	$ -	$ 2,121,675	Line 3 + Line 6, adjusted for DE 19-057 LBR reset
	New Methodology (Measures Installed in 2019 and forward): (3)					
9	Program Year 2019 Estimated LBR Savings	16,534,174	68,612,477	104,434	85,251,085	Attachment E3 P.5
10	Program Year 2020 Estimated LBR Savings to be achieved (annualized)	17,239,200	89,376,700	146,340	106,762,240	Attachment E3 P.5
11	Program Year 2020 Estimated LBR Savings to be achieved in 2020	8,619,600	44,688,350	73,170	53,381,120	Line 10 * 50%
12	2019 Average Distribution Rate (ADR)	$ 0.04037	$ 0.01028	$ 6.44		Attachment E3 P.5
13	Sub-Total LBR	$ 1,015,447	$ 1,164,716	$ 1,144,535	$ 3,324,699	Line 11 * Line 12 + Line 9 * Line 12
14	**Total Forecasted LBR - Year 2020**	$ 1,691,628	$ 2,610,210	$ 1,144,535	$ 5,446,374	Line 9 + Line 12

*Numbers may not add due to rounding. 2017 and 2018 Actual LBR savings were capped at 110%, consistent with the Settlement Agreement in DE 15-137
**LBR in 2020 for measures installed through 12/31/18 will cease on 8/1/2020 as part of DE 19-057
Comments

1 Legacy portion utilizes old methodology for calculating LBR - i.e. it utilizes a combined ADR for measures installed in 2017 and 2018.
2 Actual LBR Savings differ from program savings as the 110% LBR cap was reached
3 New metholody disaggregates kWh and kW components as specified in the Settlement Agreement in DE 17-136 (Order No. 26,095).

DE 17-136
Illustrative Calculation of LBR for Year 2020 (cumularive 2017-2020)
Summary Based on Liberty Utilities

1.	Proposal, Bates 116	N/A
2.	10-17-2017 Upd Proposal, DR 2-28, p. 5 of 12	N/A
3.	Summary of Utility Spreadsheets Incorporating all Known Corrections for Settlement Purposes	see below

	Description	Residential kWh	Commercial kWh	C&I kW	Total	Ref.
	Legacy (Measures Installed in 2017 and 2018): (1)					
1	Program Year 2017 Actual LBR Savings (2)	N/A	N/A	-	N/A	
2	2019 Average Distribution Rate (ADR)	N/A	N/A	$ -		
3	Sub-Total LBR	N/A	N/A	$ -	N/A	
4	Program Year 2019 Estimated LBR Savings	2,246,436	6,977,916	901		
5	2020 Average Distribution Rate (ADR)	$ 0.04694	$ 0.00873	$ 7.65		
6	Sub-Total LBR	105,448	60,917	$ 6,893	173,258	
7	Sub-Total Legacy (Measures Installed in 2018 and 2019)	2,246,436	6,977,916	901		
8	Sub-Total Legacy LBR	105,448	60,917	$ 6,893	173,258	
	New Methodology (Measures Installed in 2020 and forward): (3)					
9	Program Year 2020 Estimated LBR Savings to be achieved (annualized)	1,762,578	10,836,436	17,328	12,616,342	Updated per Settlement Agreement
10	Program Year 2020 Estimated LBR Savings to be achieved in 2019	881,289	5,418,218	8,664	6,308,171	Line 9* 50%
11	2020 Average Distribution Rate (ADR)	$ 0.04694	$ 0.00873	$ 7.65		
12	Sub-Total LBR	$ 41,368	$ 47,301	$ 66,280	$ 154,948	Line 10 * Line 11
13	**Total Forecasted LBR - Year 2020 For Settlement Purposes**	$ 146,815	$ 108,218	$ 73,172	$ 328,206	Line 9 + Line 12

*Numbers may not add due to rounding.

Comments

1 Legacy portion for Granite State Electric is zero due to the fact that 2018 is a test year and savings and sales are set back to zero.
2 N/A
3 New methodology disaggregates kWh and kW components as specified in the Settlement Agreement in DE 17-136 (Order No. 26,095). Liberty is only including savings associated with its G-1 customers based on the fact that the G-2 customer class ratchets were not analyzed during the working group process and Liberty agreed to remove LBR for rate G-2 from the LBR calculation.

	Description		Residential kWh	Commercial kWh	C&I kW	Total	Ref.
	Legacy (Measures Installed in 2017 and 2018):	(Note 1)					
1.	Program Year 2017 Actual LBR Savings		1,344,216	6,004,884	-	7,349,100	DE 14-216, 2017 Annual Report, P. 3 of 14
2.	2020 Average Distribution Rate (ADR)		$0.03558	$0.03152	-		DE 17-136, 2020 Update, Att. H3, P. 5 of 11
3.	Sub-Total LBR		$ 47,827	$ 189,274	$ -	$ 237,101	Line 1 * Line 2
4.	Program Year 2018 Actual LBR Savings	(Note 2)	2,868,216	6,708,144	-	9,576,360	DE 17-136, 2018 Annual Report, P. 3 of 14
5.	2020 Average Distribution Rate (ADR)		$0.03558	$0.03152	-		DE 17-136, 2020 Update, Att. H3, P. 5 of 11
6.	Sub-Total LBR		$ 102,051	$ 211,441	$ -	$ 313,492	Line 4 * Line 5
7.	Sub-Total Legacy Savings (Measures Installed in 2017 and 2018)		4,212,432	12,713,028	-	16,925,460	Line 1 + Line 4
8.	Sub-Total Legacy LBR		$ 149,878	$ 400,715	$ -	$ 550,593	Line 3 + Line 6
	New Methodology (Measures Installed in 2019 and forward):	(Note 3)					
9.	Program Year 2019 Estimated LBR Savings to be achieved		2,997,636	7,095,280	9,073	10,101,990	DE 17-136, 2020 Update, Att. H3, P. 5 of 11
10.	2020 Average Distribution Rate (ADR)		$0.03558	$0.00026	$9.14		DE 17-136, 2020 Update, Att. H3, P. 5 of 11
11.	Sub-Total LBR		$ 106,656	$ 1,845	$ 82,927	$ 191,428	Line 9 * Line 10
12.	Program Year 2020 Estimated LBR Savings - Annualized		3,214,309	10,734,644	13,216	13,962,169	DE 17-136, 2020 Update, Att. H3, P. 5 & 5a of 11
13.	Program Year 2020 Estimated LBR Savings to be achieved		1,628,315	5,437,992	6,608	7,072,915	DE 17-136, 2020 Update, Att. H3, P. 5a of 11
14.	2020 Average Distribution Rate (ADR)		$0.03558	$0.00026	$9.14		DE 17-136, 2020 Update, Att. H3, P. 5 of 11
15.	Sub-Total LBR		$ 57,935	$ 1,414	$ 60,397	$ 119,747	Line 13 * Line 14
16.	Sub-Total "New Method" Savings - 2019 Forward		4,625,952	12,533,272	15,681	7,072,915	Line 9 + Line 13
17.	Sub-Total "New Method" LBR - 2019 Forward		$ 164,591	$ 3,259	$ 143,325	$ 311,175	Line 11 + Line 15
18.	**Total Forecasted LBR - Current Year**		$ 314,470	$ 403,973	$ 143,325	$ 861,768	Line 8 + Line 17

* Numbers may not add due to rounding.

Comments

1. Legacy portion utilizes old methodology for calculating LBR - i.e. it utilizes a combined ADR for measures installed in 2017 and 2018.
2. Actual LBR Savings differ from program savings as the 110% LBR cap was reached
3. New methodody disaggregates kWh and kW components as specified in the Settlement Agreement in DE 17-136 (Order No. 26,095).

	Description	Therm Savings Residential	C&I	Total	Ref.
	~~**Measures Installed in 2017:**~~				
1.	Program Year 2017 Actual Therm Savings (Nov - Apr)	35,378	132,787	168,165	2017 Annual Report, P2, Annualized Savings/12*6
2.	2020 Average Distribution Rates (ADR) (Nov - Apr)	$0.6915	$0.1989		2020 Plan Update, Att. J5, P2
3.	Sub-Total LBR	$ 24,465	$ 26,414	$ 50,879	Ln 1 * Ln 2
4.	Program Year 2017 Actual Therm Savings (May - Oct)	35,378	132,787	168,165	2017 Annual Report, P2, Annualized Savings/12*6
5.	2020 Average Distribution Rates (ADR) (May - Oct)	$0.6108	$0.1217		2020 Plan Update, Att. J5, P2
6.	Sub-Total LBR	$ 21,610	$ 16,154	$ 37,764	Ln 4 * Ln 5
7.	**Total LBR (Measures Installed in 2017)**	$ 46,075	$ 42,569	$ 88,643	Ln 3 + Ln 6
	Measures Installed in 2018:				
8.	Program Year 2018 Actual Therm Savings (Nov - Apr)	57,884	91,060	148,944	2018 Annual Reports, P2, Annualized Savings/12*6
9.	2020 Average Distribution Rates (ADR) (Nov - Apr)	$0.6915	$0.1989		2020 Plan Update, Att. J5, P2
10.	Sub-Total LBR	$ 40,028	$ 18,114	$ 58,142	Ln 8 * Ln 9
11.	Program Year 2018 Actual Therm Savings (May - Oct)	57,884	91,060	148,944	2018 Annual Reports, P2, Annualized Savings/12*6
12.	2020 Average Distribution Rates (ADR) (May - Oct)	$0.6108	$0.1217		2020 Plan Update, Att. J5, P2
13.	Sub-Total LBR	$ 35,357	$ 11,078	$ 46,435	Ln 11 * Ln 12
14.	**Total LBR (Measures Installed in 2018)**	$ 75,385	$ 29,192	$ 104,577	Ln 10 + Ln 13
	Measures Installed in 2019				
15.	Program Year 2019 Estimated Therm Savings (Nov - Apr)	60,055	118,766	178,821	2019 Update, Att J5, P4 & P5, Annualized Therms
16.	2020 Average Distribution Rates (ADR) (Nov - Apr)	$0.6915	$0.1989		2020 Plan Update, Att. J5, P2
17.	Sub-Total LBR	$ 41,529	$ 23,625	$ 65,154	Ln 15 * Ln 16
18.	Program Year 2019 Estimated Therm Savings (May - Oct)	61,637	121,895	183,532	2019 Update, Att J5, P4 & P5, Annualized Therms
19.	2020 Average Distribution Rates (ADR) (May - Oct)	$0.6108	$0.1217		2020 Plan Update, Att. J5, P2
20.	Sub-Total LBR	$ 37,650	$ 14,829	$ 52,479	Ln 18 * Ln 19
21.	**Total LBR (Measures Installed in 2019)**	$ 79,179	$ 38,454	$ 117,633	Ln 17 + Ln 20
	Measures Installed in 2020				
22.	Program Year 2020 Estimated Therm Savings (Nov - Apr)	2,810	5,823	8,633	2020 Plan Update, Att J5, P2 Ln 35.
23.	2020 Average Distribution Rates (ADR) (Nov - Apr)	$0.6915	$0.1989		2020 Plan Update, Att. J5, P2
24.	Sub-Total LBR	$ 1,943	$ 1,158	$ 3,102	Ln 22 * Ln 23
25.	Program Year 2020 Estimated Therm Savings (May - Oct)	28,034	58,097	86,132	2020 Plan Update, Att J5, P2 Ln 35.
26.	2020 Average Distribution Rates (ADR) (May - Oct)	$0.6108	$0.1217		2020 Plan Update, Att. J5, P2
27.	Sub-Total LBR	$ 17,124	$ 7,068	$ 24,192	Ln 25 * Ln 26
28.	**Total LBR (Measures Installed in 2020)**	$ 19,067	$ 8,226	$ 27,294	Ln 24 + Ln 27
29.	**Grand Total Forecasted LBR**	$ 219,706	$ 118,441	$ 338,147	Ln 7 + Ln 14 + Ln 21 + Ln 28

*November 2018 through October 2019

NEW HAMPSHIRE ENERGY EFFICIENCY CALCULATION OF PERFORMANCE INCENTIVE BEGINNING IN 2020

Report Issued by the NH Performance Incentive Working Group

Docket No. DE 17-136
July 31, 2019

Table of Contents

I. Introduction

A. Scope and Members of the PI Working Group

The scope of the Performance Incentive Working Group's ("PI Working Group" or "Working Group") activities is defined by New Hampshire Public Utilities Commission ("Commission" or "PUC") Order Nos. 26,095 and 26,207 in Docket DE 17-136, which approved the Settlement Agreements filed on December 8, 2017 and December 13, 2018, respectively. The Settlement Agreements direct the PI Working Group to undertake a review of potential PI methodologies that could further promote the achievement of New Hampshire's EERS goals, with the objective of implementing any changes to the performance incentive calculation beginning in the 2020 program year. The PI Working Group was tasked with considering metrics designed to encourage income eligible participation in energy efficiency programs and to encourage peak load reductions. Per the Settlement Agreement, the intent of the PI Working Group is to make its recommendations in time to incorporate proposed methodologies into the 2020 New Hampshire Statewide Energy Efficiency Plan Update. This Report represents the PI Working Group's fulfilment of that assignment.

During its extensive 16-month review of the issues surrounding the current, and alternative, PI methodologies, the Working Group reviewed and produced many documents, some of which are posted to a page on the Commission website http://www.puc.state.nh.us/EESE%20Board/EERS WorkingGroups.html. These documents are posted for informational purposes only and the PI Working Group members do not necessarily adopt or endorse the information and findings contained in these documents.

This Report is largely a consensus document produced by the Working Group members. However, while this Report was guided by and results from the Settlement Agreements filed December 8, 2017 and December 13, 2018, it is not intended as, and should not be construed as a Settlement Agreement. As such, Working Group members reserve the opportunity to take consistent or contrary positions when PI is at issue in future proceedings before the Commission. The Report is a public document and may be used in future Commission proceedings. The Working Group meetings and related discussions that lead to the Report were not conducted as privileged or confidential sessions.

This Working Group Report, along with any member/stakeholder comments, has been posted to the Commission website under the PI Working Group section.

The members of the PI Working Group devoted many hours to meetings, research, information responses and preparation of slide presentations and this Report is the product of a collaborative effort enriched by the creative ideas each member brought to the table. A full list of members is included in Appendix B.

B. Executive Summary

The PI Working Group met in order to review the current, and alternative, PI calculation methodologies and to recommend an appropriate PI framework to be implemented for the 2020 period. The Working Group considered including potential metrics to encourage electric system peak load reductions and to

increase participation by low income groups and households in energy efficiency programs. The discussions of the PI Working Group occurred over a sixteen-month period between January 2018 and July 2019, and the salient documents from these discussions are posted to the Commission website.

A significant portion of the Working Group's time was spent studying and revising minimum PI thresholds, calculation methodologies, and developing a more comprehensive and transparent framework for calculating PI that constitutes a good replacement for the existing methodology. The new proposed framework is based on the following:

- Categorizing and weighting five separate performance indicators (components), at the portfolio level, each involving minimum savings thresholds (as well as other minimum thresholds summarized below) that must be met in order for any PI to be earned for that component.

Performance Incentive Components (Electric)

PI #	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime kWh Savings	Actual/Planned Lifetime kWh Savings	35%	75%	125%	Annual PI Filing w/PUC
2	Annual kWh Savings	Actual/Planned Annual kWh Savings	10%	75%	125%	Annual PI Filing w/PUC
3	Summer Peak Demand Savings	Actual/Planned ISO-NE System-wide Summer Peak Passive kW Savings	12%	65%	125%	Annual PI Filing w/PUC
4	Winter Peak Demand Savings	Actual/Planned ISO-NE System-wide Winter Peak Passive kW Savings	8%	65%	125%	Annual PI Filing w/PUC
5	Value	Actual/Planned Net Benefits[1]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

[1] Total resource benefits (See Appendix D) less utility costs (not including PI).

Performance Incentive Components (Gas)

PI #	Component Title	Description	Incentive Weight	Minimum Threshold	Maximum PI Level	Verification
1	Lifetime MMBtu Savings	Actual/Planned Lifetime MMBtu Savings	45%	75%	125%	Annual PI Filing w/PUC
2	Annual MMBtu Savings	Actual/Planned Annual MMBtu Savings	20%	75%	125%	Annual PI Filing w/PUC
3	Value	Actual/Planned Net Benefits[2]	35%	75%	125%	Annual PI Filing w/PUC
Total			100%			

- The source data for the PI value of each performance indicator is taken from the Benefit-Cost model spreadsheets utilized by the utilities in the preparation of their annual PI filings showing calculations of program cost effectiveness and present value of benefits. Note: The reporting requirement and the compilation of this data on an annual basis will not change – only the calculation of PI has changed.

C. Minimum Thresholds and Requirements

- Most of the existing minimum PI requirements/parameters remain unchanged as follows:
  - ✓ Maintain existing target PI equal to 5.5 percent of each company's program spending with a maximum PI equal to 6.875 percent of actual spending.
  - ✓ Maintain actual spending as the basis of the calculation of PI, rather than the budget.
  - ✓ Maintain a minimum portfolio-wide threshold benefit-cost ratio ("BCR") of 1.0 before PI can be earned, but – remove the BCR from calculation of PI.[3]
  - ✓ Maintain the cap on incentives that can be earned equal to 125 percent of design PI, equivalent to 6.875 percent of actual spending.
  - ✓ Maintain existing use of "adjusted gross savings" for annual and lifetime savings calculations, exclusive of market effects (free ridership and spillover) and inclusive of applicable realization rates achieved by the programs as indicated by third party evaluations and adopted by the Evaluation Measurement and Verification ("EM&V") Working Group.
  - ✓ Maintain the minimum portfolio-wide threshold of 55% of lifetime energy savings from electric measures in the electric programs. As is the case currently, if this threshold is not

[2] Id.

[3] The minimum threshold for cost-effectiveness in this PI framework will be based on the current Total Resource Cost test. The Benefit-Cost and EM&V Working Group are currently evaluating the B/C test used by the New Hampshire energy efficiency programs. A final report is expected to be completed by September of 2019. The PI Working Group members did not address in depth as to whether future PI calculations will reflect any changes to the B/C screening test from that review.

met, then a lower coefficient (4.4 percent rather than 5.5 percent) is to be used in the calculation of PI, along with a corresponding cap of 5.5 percent.

- The following PI requirements/parameters were revised or discontinued:
  - ✓ The existing practice of calculating PI based on achievements at the sector level (i.e. Residential/Income Eligible and Commercial/Industrial sectors) will be replaced by a calculation based on achievement at the portfolio level as a whole (i.e. combination of both sectors) .
  - ✓ The existing minimum threshold of 65 percent of planned lifetime savings, which must be met before any PI is earned for that component, will be increased to 75 percent for each of the lifetime and annual savings components as well as the net benefits component. For the new PI components associated with passive electric summer and winter peak demand, the minimum threshold will be 65 percent (see table above).

The Working Group supports the revised PI framework for the following reasons:

- It uses metrics that are transparent – e.g., performance is incentivized within separate key metric areas that are clear and well-defined, and aligned with EERS goals.
- It is administratively expedient – e.g., provides an easy to use one-page template based on the existing data compilation methods used by the utilities.
- It increases focus on targets and promotes various policy objectives by applying incentives to each performance component separately - e.g., peak demand.
- It establishes minimum thresholds for each performance indicator to encourage performance on each of the targets.
- It preserves effective elements of the existing minimum PI requirements as outlined above - e.g., baseline target and cap, BCR, actual savings, etc.
- It uses a portfolio approach, which provides the utilities with greater flexibility in terms of program implementation and innovation, and increasing low income participation through fuel-neutral measures.

II. Review of Existing Performance Incentive Framework

The current energy efficiency program administration performance incentive framework was initially proposed by the Energy Efficiency Working Group in its final report to the Commission on July 6, 1999,[4] and approved by the Commission in November 2000.[5] Aside from Commission modifications to the framework in September 2013,[6] and again when it approved the Energy Efficiency Resource Standard in 2016,[7] the framework developed nearly two decades ago remains the foundation of New Hampshire's energy efficiency program administration performance incentive framework today.

[4] Docket No. DE 96-150. Energy Efficiency Working Group Final Report. (July 1999) Page 21. Available at: https://www.puc.nh.gov/Electric/96-150%20%20NH%20Energy%20Efficiency%20Working%20Group%20Final%20Report%20(1999).pdf

[5] Order No. 23,574 at 19. See also, Order No. 23,982 at 13.

[6] Order No. 25,569 at 7. The Commission added the tiered incentive described *infra* at note 7 as a means of balancing the Commission's recently approved fuel neutral programs.

[7] Order No. 25,932 at 60. The modification was to the size the of the performance incentive

A. Current Threshold Requirements

To be eligible for a performance incentive for a specific sector (Residential/income-eligible programs, and Commercial/Industrial, inclusive of the Municipal program for electric programs), the gas or electric utility currently must achieve the following:

1. A BCR of greater than 1.0 in that sector for the electric utilities and gas utilities or not receive PI for the BCR portion.
2. Actual lifetime kWh savings at or above 65 percent of the planned savings in that sector for the electric utilities or no PI is earned for the kWh savings portion.
3. Actual lifetime MMBtu savings at or above 65 percent of the planned savings in that sector for the gas utilities or no PI is earned for the MMBtu savings portion.

B. Electric Programs

Once the above-mentioned threshold requirements have been satisfied, the current performance incentive for the electric energy efficiency programs is calculated on a sector specific basis, and based on the following factors:

1. If actual electric lifetime savings (for both electric and non-electric measures) are greater than or equal to 55 percent of total lifetime energy savings, the multiplier for the savings component is 2.75 percent of sector spending; if it is less than 55 percent then the multiplier is 2.2 percent of sector spending[8]
2. The actual dollars spent (by the utility and by customers) to carry out programs;
3. The actual BCR compared to the planned BCR;
4. The actual lifetime electric energy (kWh) savings compared to the planned lifetime electric energy (kWh) savings;
5. The BCR component and the kWh savings ratio component are each capped at 3.4375 percent for each sector and each sector PI is capped at 6.875 percent; and
6. Actual spending amounts for the PI calculation may exceed the total budget by up to 5 percent.

The current performance incentive formula ties these factors together is as follows for each sector:

(1) (2) (3) (4)

PI= [(2.75% or 2.2%) x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime kWh Actual/lifetime kWh Planned)]

C. Natural Gas Programs

The performance incentive framework for the natural gas programs is similar to the electric programs, except that it uses MMBtu savings from natural gas instead of lifetime kWh and the incentive percentage and total PI cap is not dependent on achieving a minimum portion of total energy savings from gas measures.

[8] If at least 55 percent of the overall energy savings are in the form of electric energy, then the utility earns PI using the higher 5.5 percent (i.e. 2.75 percent for the savings component and 2.75 percent for the benefit-cost component). If less than 55percent of the overall savings are from electric energy, then the utility earns PI using the lower 4.4 percent multiplier (i.e. 2.2 percent for the savings component and 2.2 percent for the benefit-cost component). The 55% electric savings threshold also determines the overall performance incentive cap; if the 55% threshold is reached, the maximum PI is 6.875% of actual expenditures, otherwise it is 5.5% of actual expenditures. This is meant to focus the majority of the SBC-funded budget towards electric savings rather than gas and other fossil fuel savings. .

The current performance incentive formula for the natural gas programs is as follows for each sector:

(1) (2) (3)
PI= [2.75% x Actual Spend] x [(BCR Actual/BCR Planned) + (lifetime MMBtu Actual / lifetime MMBtu Planned)]

III. Opportunities for Improving the Performance Incentive Model

The PI Working Group stakeholders identified several aspects of the current model which could be improved to reflect the State of New Hampshire's priorities, and account for changes that have taken place in our energy systems in the two decades since the framework was originally adopted.

The opportunities for improvement were focused on the following aspects of the existing framework: (1) a narrow focus on lifetime savings and BCR; (2) a limited emphasis on the value of electric peak demand reduction; (3) a threshold for incentive eligibility that begins at 65 percent of lifetime savings goals; (4) a threshold for incentive eligibility at the sector level rather than portfolio level; and (5) a focus on the ratio of benefits to costs rather than on net benefits.

A. Narrow Focus on Lifetime Savings and BCR

The existing performance incentive framework's narrow focus on BCR and lifetime kWh savings excludes other performance metrics or outcomes stakeholders believe the utilities should target based on the policies of the State of New Hampshire and priorities of the Commission. The American Council for an Energy Efficient Economy (ACEEE) suggests, "Multifactor performance incentives that incorporate multiple metrics can also work to meet other policy objectives… like reducing peak demand (and system costs), creating savings for low-income customers, and others."[9] Several jurisdictions, such as Vermont, utilize a framework based on several quantifiable performance indicators (QPIs).

While the working group acknowledged the importance of utility performance as it relates to lifetime energy savings, as well as maximizing the overall benefits and minimizing the overall costs of the programs, it also reached consensus that other performance indicators merited attention in the framework.[10]

[9] American Council for an Energy Efficient Economy (ACEEE). Topic Brief: Snapshot of Energy Efficiency Performance Incentives for Electric Utilities. (December 2018) Page 3. Available at: https://aceee.org/sites/default/files/pims-121118.pdf

[10] In addition to reviewing the Vermont QPI framework, the Working Group also reviewed Massachusetts' PI framework, which focuses on the gross and net dollar benefits delivered by energy efficiency programs. After including seven program metrics in its PI formula for several years, the Massachusetts Department of Public Utilities subsequently excluded these metrics stating "performance metrics should induce Program Administrators to undertake activities they would not otherwise undertake" Massachusetts DPU Order 13-67 (December 11, 2014), page 10. Available at https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/9230369

B. Limited Emphasis on Peak Demand Reduction

The existing performance incentive framework accounts for the benefits associated with electric peak demand reduction indirectly within that framework's benefit cost component. This contrasts with several states in the region that have recently placed a greater emphasis on the value of demand reduction by including a specific incentive associated with the achievement of planned demand reduction goals.[11] The group also notes that the New Hampshire PUC asked the utilities to explore and pursue peak reduction in several recent dockets as a means to control increasing transmission costs.[12]

While the Working Group members acknowledge that the value of summer peak demand reduction is already indirectly accounted for in the current performance incentive framework's BCR component, the group reached consensus on including components for both a passive summer and passive winter peak demand reductions in the electric programs' PI framework. The group also reached consensus that future opportunities for adoption of a demand reduction metric for natural gas programs should be explored as part of the 2021 -2023 planning process.

C. Incentive Eligibility Threshold

Under the existing performance incentive framework, a utility begins earning an incentive on the savings component upon achieving 65 percent of its targeted lifetime savings goal. However, in several other New England states, including Massachusetts,[13] Connecticut,[14] and Rhode Island,[15] the threshold for earning an incentive is 75 percent of the program targets. As a result, consensus emerged among the working group members that New Hampshire should raise its incentive eligibility thresholds to align better with neighboring jurisdictions. However, the Working Group members also agreed that given the uncertainty surrounding passive summer and winter peak demand reductions and their dependence upon the programs' measure mix, a 65 percent minimum threshold would be applied to those new demand-related components.

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[11] National Grid. 2018-20 Energy Efficiency and System Reliability Procurement Plan. (August 2017). Page 63-65. Available at: http://rieermc.wpengine.com/wp-content/uploads/2017/08/2018-2020-3-year-plan-puc-8-30-17.pdf; Order Re: Compensation Set-Aside and Performance Targets for Efficiency Vermont. (November 2017) Page A-1. Available at: https://drive.google.com/file/d/1oFLJ3yOdHyCv-3UmXQsXpf1MBUnTWS9m/view?usp=sharing; Memorandum dated October 19, 2018, Program Administrator Guide to Updates to the September 14, 2019- 2021 Draft Plan. Page 7. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Memo-from-PAs-to-EEAC-10-22-18.pdf

[12] . See, e.g., Order No. 26,042 at 5 (July 24, 2017) (stating that transmission costs are tied to peak loads and requiring Unitil to consider what measures could be taken to mitigate increases in transmission costs); DE 18-089, Eversource Energy, 2018 Transmission Cost Adjustment Mechanism, Hearing Transcript of July 12, 2018, at 19-20; DE 18-051, Liberty Utilities (Granite State Electric) Corp., Annual Retail Rate Filing, Hearing Transcript of May 9, 2018, at 46-52.

[13] Massachusetts 2019-21 Energy Efficiency Plan. (October 2018) Page 160. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/Exh.-1-Final-Plan-10-31-18-With-Appendices-no-bulk.pdf

[14] Connecticut 2019-21 Conservation and Load Management Plan Update. (March 2019) Page 368. Available at: https://www.energizect.com/sites/default/files/FINAL%202019%202021%20Plan%20%283-1-19%29.pdf

[15] Rhode Island 2019 Energy Efficiency Program Plan. (October 2018) Page 42. Available at: http://www.ripuc.org/eventsactions/docket/4888-NGrid-EEPP2019(10-15-18).pdf

D. Sector Level Incentive Eligibility

Under the existing performance incentive framework, each utility's targets and related performance incentives are calculated on a sector-specific basis. As a result, if a utility under-performs in one sector, it cannot make up for that underperformance by over-performing in the other sector. This sends a signal that is inconsistent with the EERS: rather than pursue a statewide efficiency target as the EERS mandates, the existing framework suggests that there are two targets, one for each sector, thus encouraging the utilities to pursue them independently.

According to the National Efficiency Screening Project's Database of State Efficiency Screening Practices, many states, including Arizona, California, District of Columbia, Illinois, Michigan, New Mexico, New York, Oklahoma, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin, assess the cost-effectiveness of their programs at the portfolio level.[16]

While there is some inherent logic to incenting performance on a sector specific basis, Working Group members agreed that doing so limits flexibility to implement new programs and might unnecessarily limit the savings or cost-effectiveness pursued in a sector. In such a case, the utility would be reluctant to pursue all-cost effective programs, especially those with a lower BCR, if the utility is unable to offset the savings uncertainty associated with new programs in one sector by investment in highly cost-effective programs in the other sector.

Rewarding a utility's performance at the sector level also has implications for how income eligible programs are delivered. The Commission has the authority to approve income-eligible programs such as Home Energy Assistance (HEA) program where the BCR is less than 1.0.[17] However, for the purposes of the performance incentive eligibility, HEA falls within the residential sector and represents a significant portion of the sector's overall budget goals. This limits the utility's ability to utilize the flexibility provided by the Commission regarding HEA program cost-effectiveness because the PI earned will potentially be less if the sector level BCR is less. By moving the calculation of incentives to the portfolio level, this flexibility is maintained because more programs can be used to offset a lower BCR from the HEA programs.

E. Benefit Cost Ratio Component

The existing performance incentive framework focuses half of the incentive on actual versus planned BCR. This is a primary component of the current framework. In most jurisdictions however, the BCR is treated as a threshold that must be met at either the measure, program or portfolio level before implementation of that measure, program, or portfolio is approved by a Commission, rather than a metric against which a program administrator is rewarded. While there is some inherent logic in encouraging the utilities to maximize the cost effectiveness of the programs, there was consensus among Working Group members that the energy efficiency portfolio should be focused on other metrics so that the BCR should set a floor for portfolio performance at 1.0. Stated another way, using a minimum B/C threshold of 1.0 before PI can be earned ensures that the benefits exceed the costs.

[16] National Efficiency Screening Project. Database of State Efficiency Screening Practices. Accessed June 21, 2019. Available at: https://nationalefficiencyscreening.org/state-database-dsesp/
[17] *See* Docket No. 96-150, Order No. 23,574 dated 11/01/2000 at 4.

Neighboring jurisdictions, including Massachusetts and Vermont, have embraced this approach to set the BCR as a threshold requirement and focus on other metrics for the PI components.

IV. Revised Framework

A. Current Framework Formula

Assuming a utility meets the minimum threshold of 55 percent of electric program total energy savings (electricity, natural gas, oil, propane, kerosene and wood) coming from electricity, the performance incentive earned by each electric utility under the current framework is as follows:

$$PI = [2.75\% \times ACTUAL] \times [(BCR_{ACT} / BCR_{PLN}) + (kWh_{ACT} / kWh_{PLN})]$$

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent less the performance incentive
BCR_{ACT} = Actual Benefit-to-Cost ratio achieved
BCR_{PLN} = Planned Benefit-to-Cost ratio
kWh_{ACT} = Actual Lifetime Kilowatt-hour savings achieved
kWh_{PLN}= Planned Lifetime Kilowatt-hour savings

If the minimum threshold of 55 percent of electric program energy savings from electricity is not achieved, then the PI formula is modified so that the 2.75 percent multiplier is replaced by a 2.2 percent multiplier. Otherwise it remains the same. For each sector, the BCR must be 1.0 or greater or no incentive is earned for the cost-effectiveness performance component for that sector. Actual lifetime savings must be at least 65 percent of the planned lifetime savings or no incentive is earned for the savings performance metric for that sector. Performance incentive is calculated separately for the two sectors Residential/Income Eligible and Commercial/Industrial. Total PI is the sum of the two.

The natural gas programs have no equivalent minimum kWh to total energy threshold requirement. Otherwise the calculation is identical except that the unit used for lifetime savings is MMBtu rather than kWh.

PI is currently capped at the component level for each of the following:

- Residential sector BCR
- Residential sector lifetime savings
- C&I sector BCR
- C&I sector lifetime savings

Taken together, the maximum performance incentive a utility can earn is the sum of 6.875 percent of the spending in each sector, with each sector calculated separately.

B. Revised Framework Formula

Under the revised framework, several additional components have been added, including two components related to summer and winter peak electric system passive demand[18] and an annual savings component and a net benefits component.

PI =
[(1.925% x ACTUAL) x ($kWh_{L\text{-}ACT}/kWh_{L\text{-}PLN}$)] +
[(0.55% x ACTUAL) x ($kWh_{A\text{-}ACT}/kWh_{A\text{-}PLN}$)] +
[(0.66% x ACTUAL) x ($kW_{SUM\text{-}ACT}/kW_{SUM\text{-}PLN}$)] +
[(0.44% x ACTUAL) x ($kW_{WIN\text{-}ACT}/kW_{WIN\text{-}PLN}$)] +
[(1.925% x ACTUAL) x ($NET\text{-}BEN_{ACT}/NET\text{-}BEN_{PLN}$)]

Where:

PI = Performance Incentive in dollars
ACTUAL = Total dollars spent (less PI)
$kWh_{L\text{-}ACT}$ = Actual Lifetime kWh
$kWh_{L\text{-}PLN}$ = Planned Lifetime kWh
$kWh_{A\text{-}ACT}$ = Actual Annual kWh
$kWh_{A\text{-}PLN}$ = Planned Annual kWh
$kW_{SUM\text{-}ACT}$ = Actual passive summer peak kW
$kW_{SUM\text{-}PLN}$= Planned passive summer peak kW
$kW_{WIN\text{-}ACT}$ = Actual passive winter peak kW
$kW_{WIN\text{-}PLN}$= Planned passive winter peak kW
$NET\text{-}BEN_{ACT}$= Actual net benefits (in NPV dollars) (i.e. total benefits less utility costs and NEI's)[19]
$NET\text{-}BEN_{PLN}$= Planned net benefits (in NPV dollars)

Additional requirements are as follows:

- The utility's portfolio of programs must be cost-effective before any PI can be earned, meaning the BCR must be at least 1.0 ;
- If electric program portfolio does not meet a minimum threshold of 55 percent of total energy savings from electricity, the coefficient will be reduced to 80 percent of the design value, that is, the total incentive level decreases to a maximum of 4.4 percent (e.g., for lifetime electric savings the PI would change from a target of 1.925 percent to a maximum of 1.54 percent, etc.);
- Lifetime savings must be at least 75 percent of planned lifetime saving in order for any PI to be earned on the lifetime savings component;
- Annual savings must be at least 75 percent of planned annual saving in order for any PI to be earned on the annual savings component;
- Passive summer peak kW savings must be at least 65 percent of planned passive summer peak kW in order for any PI to be earned on the summer demand component;

[18] These demand components are excluded from the calculation of performance incentive for the natural gas programs. See Section C. under "Issues for Future Consideration" below.
[19] See Appendix D.

- Passive winter peak kW savings must be at least 65 percent of planned passive winter peak kW in order for any PI to be earned on the winter demand component;
- The portfolio Net Benefits must be at least 75 percent of the planned Net Benefits in order for any PI to be earned on the Net Benefits component ;
- Earned PI on each component is capped at 125 percent of that component's coefficient, that is, the maximum total PI is 6.875 percent;
- PI will be calculated on actual portfolio spending up to 105 percent of approved portfolio budget, excluding performance incentive, without prior Commission authorization. That is, the actual spending may exceed the planned budgets, including all sources of funding and excluding the performance incentive, by up to 5 percent. A utility may request approval from the Commission to spend in excess of 105 percent of proposed budget in a given year if it can demonstrate good reasons why the cap should be exceeded. PI is then calculated against actual program spending at the portfolio level, up to 105 percent of the revised, Commission-approved budget, or as otherwise ordered.[20]

V. Income Eligible Customers

A. Review by the Working Group

The Commission specifically tasked the Working Group with investigating the participation of income eligible customers in energy efficiency programs. Throughout its discussions, the Working Group weighed whether proposed changes would result in any unintended consequences related to design or implementation of the Home Energy Assistance program (HEA), or negatively impact the interests of income eligible customers. The group carefully considered including a specific metric related to achievement of goals in those programs, including establishing minimum spending or participation requirements. Input and feedback from The Way Home, which represents the interests of low income customers, as well as by the Office of Consumer Advocate, which represents residential customers, was sought throughout the process.[21]

[20] This represents a departure from the methodology set out in Order No. 25,189, Docket No. DE 10-188 at 9, whereby the performance incentive will be calculated using actual expenditures 'up to a maximum of 5% of the total approved by the Commission for each utility's residential and C&I sectors, including performance incentive…'[emphasis added]. Upon review, it was the conclusion of the Working Group that continuing with including the performance incentive as an expense in calculating the cap under the new proposed framework (now based on the portfolio approach) would introduce a circular component into the calculation that would allow the utilities to earn a performance incentive on the performance incentive. Accordingly, in keeping with the Working Group's assignment to review and propose new and alternative methodologies, it was the consensus of the group to modify the calculation by removing the cost of the performance incentive in setting the 105 percent cap.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

[21] On July 24, 2018, the PI Working Group and the B/C Working Group convened a special meeting to review current low-income programs (primarily HEA) and obtain feedback from Community Action Agencies, the utilities, project managers, and low-income advocates on program effectiveness and potential improvements.

B. Funding

Ultimately, the group reached consensus that the current 17 percent budget earmark for spending on low-income energy efficiency programs was sufficient and should be maintained. The Working Group also agreed that the recently instituted mandate to carry over any budgeted but unspent funds from HEA programs would ensure that sufficient funds were dedicated to these programs. Similarly, concerns that cost-effectiveness requirements (involving a BCR of 1.0 or greater) might limit participation of income eligible homes, have been addressed by a move from a sector level approach to a portfolio level approach. By moving to a portfolio level framework, in contrast to the sector level framework with its budgetary requirements, the Working Group was comfortable that the income eligible programs would be served adequately without adding a specific PI metric or component. In addition, the Working Group concluded that the net benefit component would help incent fossil fuel savings, which make up the primary benefit of weatherization activities in the income eligible programs. As a result, the Working Group members agreed that the income eligible programs would receive adequate investment and prioritization without the inclusion of a specific PI metric related to that customer segment in program year 2020. Should the PI framework be adjusted during the planning process for the next three-year plan, the topic of a specific income eligible metric may be revisited.

VI. Issues for Future Consideration

Over the course of the Working Group meetings, members reviewed many presentations from external experts as well as from the utilities and the OCA, and engaged in thoughtful discussion covering various aspects of performance incentive design. As these discussions progressed, several emerging developments in the energy efficiency field were considered but set aside due to the need for additional study and in the interest of reaching group consensus for the 2020 Program Year. This does not preclude future adjustment to the PI Framework to accommodate the evolution of program design, the adoption of new cost-effectiveness testing, the incorporation of a gas demand component, or other methods of calculating savings. Some of the ideas that may merit future investigation are discussed below.

A. Energy Optimization/Electrification

Energy Optimization (EO) is a concept that is known by different names in different jurisdictions. EO is a strategy undertaken by the utilities to provide customers with fuel-neutral education and encourage them to minimize energy usage through various energy efficiency measures. In practice, this has typically (but not exclusively) meant fuel switching from less efficient to more efficient, cleaner sources of energy. Heat pump technology and combined heat and power (CHP) are examples of common technologies considered under energy optimization. EO is also referred to in some circles as strategic electrification.

Both the existing PI Framework and the revised PI Framework focus on electricity savings (for electric programs) and natural gas savings (for natural gas programs), with some consideration given to other fuels saved. The current and revised PI frameworks do not consider overall energy savings, when switching from one fuel to another. Throughout the region, interest and investment in more holistic approaches to energy efficiency is increasingly involving technologies and appliances that shift energy use from dirtier fossil fuels to cleaner and more efficient natural gas and electric power. Massachusetts,

Vermont, Connecticut, Maine, and Rhode Island have begun placing a greater emphasis on *energy* savings as opposed to strictly *electric* savings among energy efficiency program planners and implementers.

One of the stumbling blocks encountered by the Working Group in judging the merits of creating a viable PI metric in this area is that EO is an emergent concept in New Hampshire in terms of policy, program design, implementation, and evaluation. An additional impediment was the availability of state-specific data involving deployment and utilization of optimization technologies. Currently, the EM&V Working Group and the B/C Working Group are working with Navigant, a third party evaluation firm, to investigate how other jurisdictions are handling EO in their energy efficiency planning, cost-effectiveness testing, and reporting, and the policies that support implementation. [22]

Depending on the outcome of the Navigant-led study, and the EERS priorities for the 2021-2023 term, the utilities and the stakeholders may want to adjust the PI framework in the future to incent overall energy reductions, rather than just those energy reductions that result from a decrease in the use of electricity or natural gas alone. If that is the case, there will need to be further discussion about how to convert energy savings resulting from the efficiency programs to a common unit of energy, and whether to do so at the customer site or the generating source. A study to investigate these issues is currently being scoped in Massachusetts, the results of which may help to inform future New Hampshire energy efficiency program design.

B. Revised Cost Effectiveness Tests

The EM&V Working Group and the B/C Working Group are working with Synapse, a third-party firm, to review policies related to New Hampshire's cost-effectiveness test for energy efficiency programs, in accordance with the framework established in the National Standard Practice Manual ("NSPM"). Synapse will prepare a report that summarizes the key elements of the NSPM and how the B/C Working Group can apply those elements to the energy efficiency cost-effectiveness analyses in New Hampshire. Any resulting recommendations for the New Hampshire cost-effectiveness test are expected to be implemented beginning in 2021.

As described above, Total Resource Cost test is the current benefit/cost test for program screening and is expected to be the, the basis for the PI for 2020. If the screening cost-effectiveness test changes with a start date of program year 2021, then the PI framework, including the components and requirements, will need to be revisited since the benefit/cost test and the PI calculation overlap.

C. Gas Demand

As coal, oil and nuclear decline as fuels for the generation of electricity in the northeast, natural gas, along with renewables and energy efficiency, have filled in the gap. This additional demand for natural gas to meet the demand for electricity generation has strained already congested gas pipeline capacity in our region. This strain has been particularly acute during the winter months when demand for natural gas for heating homes and businesses reaches a peak. Short-term natural gas supply shortfalls have led

[22] The Commission is currently investigating grid modernization, including strategic electrification, in Docket IR 15-296.

to wholesale price instability that regional energy planners, the Independent System Operator of New England ("ISO-NE"), regulators and the natural gas distribution companies throughout the region are attempting to address. Similarly, at the distribution level, natural gas utilities (including in New Hampshire) are experiencing peak day demand growth that threatens to exceed the level of firm supply that can be accessed without major new infrastructure investments. Reducing end users' natural gas demand will free up more pipeline capacity.

Unlike electricity measures and end uses, for which hourly load-shapes have been developed by energy efficiency evaluators as well as ISO-NE, the Working Group was not aware of readily available studies or related data sources for peak gas demand. Nor did the group find evaluation studies that show the peak gas demand reduction related to specific energy efficiency measures. There is currently no mechanism to put a dollar value on the demand reduction value of natural gas conserving activities during peak periods. This relationship is further complicated by the way in which natural gas is procured for the purpose of generating electricity (short term, spot market) versus the way it is procured by end-using customers who purchase from a natural gas local distribution company to heat their homes and businesses (long-term contracts, regulated rates).

While the Working Group members were in broad agreement that natural gas efficiency programs help ameliorate the winter gas supply issues, the gas utilities said that they do not track peak demand savings in New Hampshire. Without such information, the Working Group could not establish a meaningful goal or determine whether or not the natural gas programs have achieved it. Consequently, the Working Group agreed that the natural gas utilities would stay abreast of various studies in the region that are investigating the issue of natural gas peak demand in order to consider development and inclusion of a peak demand reduction metric for the next three-year plan period.[23]

D. Income Eligible Participation

As noted above, the Working Group examined the feasibility of additional PI metrics to incentivize increased participation by low-income households in energy efficiency programs, including adoption of specific participation and savings targets. After considerable discussion and review, including outreach to other stakeholders outside the working group process, consensus was reached that maintaining adequate levels of investment and funding continues to be the most effective means of serving this community, at least through 2020. However, this is an evolving issue in many other jurisdictions, and

[23] One potential example of a peak day proxy strategy was recently identified by gas program administrators in Connecticut. As a condition of approval of the Connecticut 2019-2021 Statewide Energy Efficiency Plan, the Connecticut Department of Energy and Environmental Protection required the Connecticut Program administrators to "provide a quantification and discussion of the effects of conservation, load management, and energy efficiency investments, both electric and gas, on winter peak demand and as applicable, winter fuel reliability." In response to this condition, the program administrators provided a compliance filing describing the gas peak day savings by end use and measure-type groupings. *See* Connecticut Department of Energy and Environmental Protection. Attachment A: Schedule of Compliance Conditions of Approval. (December 2018) Available at: https://app.box.com/s/zv7bcoe283tjvppnt853ojmwfa89zahg/file/392424970636. *Also see* Connecticut Energy Efficiency Program Administrators. 2019-2021 Plan Compliance Item #7 – July 1 filing. Available at: https://app.box.com/s/u0kn24qi4f7baxypfionf5oeiam8lq2i/file/488657645351

the development and adoption of potential income eligible metrics merits further study and should be a consideration during the planning process for the next three-year plan.

Appendix

Appendix A: 2020 PI calculation templates

Proposed PI Calculation for Electric Utilities

	Portfolio Planned Versus Actual Performance - 2020										
	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime kWh Savings	169,249,199	*126,936,899*			1.925%		$ 1,204,667	$ 1,505,834		Planned and Actual from Cost Eff Tab
2	Annual kWh Savings	140,178,883	*105,134,162*			0.550%		$ 344,191	$ 430,238		Planned and Actual from Cost Eff Tab
3	Summer Peak Demand kW	16,769	*10,900*			0.660%		$ 413,029	$ 516,286		Planned and Actual from Cost Eff Tab
4	Winter Peak Demand kW	19,383	*12,599*			0.440%		$ 275,352	$ 344,191		Planned and Actual from Cost Eff Tab
5	Total Resource Benefits	$ 206,636,229									Planned and Actual from Benefits Tab
6	Total Utility Costs[1]	$ 62,580,111									Planned and Actual from Cost Eff Tab
7	Net Benefits	$ 144,056,118	##########			1.925%		$ 1,204,667	$ 1,505,834		Line 5 minus line 6
8	Total					5.500%		$ 3,441,906	$ 4,302,383		

		Total Resource Cost Test		
		Planned	Actual	Source
9	Total Benefits (incl. NEIs)	$ 227,299,852		Planned and Actual from Cost Eff Tab
10	Performance Incentive	$ 3,441,906		from row 6 above
11	Participant Costs	$ 52,022,201		Planned and Actual from Cost Eff Tab
12	Total Utility Costs	$ 62,580,111		from row 4 above
13	**Portfolio TRC BCR**	**1.93**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan.
Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Proposed PI Calculation for Gas Utilities

	Portfolio Planned Versus Actual Performance - 2020										
	Portfolio	Planned	Threshold	Actual	% of Plan	Design Coefficient	Actual Coefficient	Planned PI	125% of Planned PI	Actual PI	Source
1	Lifetime MMBtu Savings	2,306,693	*1,730,020*			2.475%		$ 226,656	$ 283,320		Planned and Actual from Cost Eff Tab
2	Annual MMBtu Savings	163,616	*122,712*			1.100%		$ 100,736	$ 125,920		Planned and Actual from Cost Eff Tab
3	Total Resource Benefits	$ 21,622,091									Planned and Actual from Benefits Tab
4	Total Utility Costs	$ 9,157,813									Planned and Actual from Cost Eff Tab
5	Net Benefits	$ 12,464,278	*$ 9,348,208*			1.925%		$ 176,288	$ 220,360		Line 5 minus line 6
6	**Total**					**5.500%**		**$ 503,680**	**$ 629,600**		

		Total Resource Cost Test		
		Planned	Actual	Source
7	Total Benefits (incl. NEIs	$23,784,300		Planned and Actual from Cost Eff Tab
8	Performance Incentive	$ 503,680		from row 8 above
9	Participant Costs	$ 5,999,410		Planned and Actual from Cost Eff Tab
10	Total Utility Costs	$ 9,157,813		from row 6 above
11	**Portfolio TRC BCR**	**1.52**		row 9 divided by rows 10+11+12

For illustrative purposes only. All dollar values are expressed in 2020 dollars. The numbers reflect the cumulative budget, savings, benefits, and costs of all the utilities combined based on the original 2020 Plan.
Each utlity will file its own utility-specific version of the table as part of the 2020 Plan Update.

[1] Note that in order to avoid a circular reference in the calculation of performance incentive, "Total Utility Costs" does not include the value of PI.

Appendix B: The members/participants of the PI Working Group:

- Jay Dudley, PUC
- Jim Cunningham, PUC
- Paul Dexter, PUC
- Elizabeth Nixon, PUC
- Leszek Stachow, PUC
- Brian Buckley, Office of Consumer Advocate
- Donald Kreis, Office of Consumer Advocate
- Rebecca Ohler, New Hampshire Department of Environmental Services (NH DES)
- Joe Fontaine, NH DES
- Christopher Skoglund, NH DES
- Kate Peters, Eversource
- Miles Ingram, Eversource
- Marc Lemenager, Eversource
- Christopher Plecs, Eversource
- Erica Menard, Eversource
- Tom Fuller, Eversource
- Christopher Goulding, Eversource[24]
- Matthew Fossum, Eversource
- Cindy Carroll, Unitil
- Mary Downes, Unitil
- Eric Stanley, Liberty
- Heather Tebbetts, Liberty
- Trish Walker, Liberty
- Mike Sheehan, Liberty
- Carol Woods, NH Electric Coop
- Melissa Birchard, Conservation Law Foundation
- Raymond Burke, NH Legal Assistance/The Way Home
- Ellen Hawes, Acadia Center
- Amy Boyd, Acadia Center
- Scott Albert, GDS Associates
- Madeleine Mineau, Clean Energy NH
- Brianna Brand, Clean Energy NH

[24] Christopher Goulding is now employed by Unitil.

Appendix C: Consultants who assisted and contributed to the work of the PI Working Group:

- Denise Rouleau, Northeast Energy Efficiency Partnerships (NEEP)
- Emily Levin, Vermont Energy Investment Corporation (VEIC)
- David Farnsworth and Jessica Shipley, Regulatory Assistance Project (RAP)
- Philip Mosenthal, Optimal Energy
- Martin Kushler, American Council for an Energy Efficient Economy (ACEEE)
- Lisa Skumatz, Skumatz Economic Research Associates (SERA)
- Ralph Prahl, SERA
- Robert Wirtshafter, SERA

Appendix D: Glossary of Terms

Actual: The amount of savings, spending, net benefits or BCR the programs achieved, as reported in each utility's annual report and associated Benefit Cost models.

Adjusted gross savings: The amount of savings resulting from energy efficiency measures, adjusted to reflect realization rates and other impact factors quantified in third party evaluations, exclusive of free-ridership and spillover.

Annual savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over a one-year period resulting from energy efficiency programs.

Benefit-Cost Ratio ("BCR"): As calculated by the NH Utilities' Benefit/Cost test, currently the Total Resource Cost ("TRC") test, the BCR is the ratio of total benefits and total costs. Total benefits are the net present value of avoided energy and non-energy impacts resulting from program measures. Total costs are the net present value of utility costs, including performance incentive, plus out-of-pocket incremental costs that customers pay for energy efficiency measures, relative to a standard efficiency measure.

Demand savings: Demand savings is the reduction in electricity demand (kW) . Demand savings can result from active resources, which are activated when dispatched (i.e., demand response), or passive resources (e.g., installation of more efficient equipment) and not in response to a dispatch instruction. For purposes of the PI calculation, the peak demand savings are coincident with ISO-NE system peak demand periods.

Independent System Operator of New England ("ISO-NE") peak demand savings: The savings resulting from passive peak demand reduction occurring during the "on-peak" hours defined by ISO-NE. Specifically, summer peak demand reductions are the average reduction in demand during summer peak hours (non-holiday weekdays, 1:00 p.m. to 5:00 p.m., during June, July, and August) and winter peak demand reductions are the average reductions in demand during winter peak hours (non-holiday weekdays, 5:00 p.m. to 7:00 p.m., during December and January).

Lifetime savings: The reduction in electricity use (kWh) or fossil fuel use (therms or MMBtus) over the lifetime of installed energy efficiency measures, based on the life of a measure as determined through evaluation.

Net Benefits: Net Benefits are the Net Present Value of Total Resource Benefits less Total Utility Costs (not including Performance Incentive). Neither the value of customer costs nor non-energy impacts is considered in determining Net Benefits for purposes of calculating the performance incentive.

Planned: The amount of savings, spending, net benefits or BCR the programs are expected to achieve, based on the utilities' Three-Year Plan and typically updated each year in Annual Update filings and associated Benefit Cost models.

Portfolio: The total set of energy efficiency programs offered by a utility, including those activities that do not directly save energy (e.g., education, EM&V, marketing, lending programs, etc.) across all sectors.

Sector: A group of customers with similar characteristics, usage patterns and billing rates. Residential, and Commercial and Industrial (C&I) are the two primary sectors in the NH Saves programs.

Total Resource Benefits: Avoided costs due to program impacts on electric capacity, electric energy, Demand Reduction Induced Price Effects (DRIPE), gas benefits, other fuels, and water resources.

Utility costs: All expenditures by the program administrator to design, plan, administer, deliver, monitor, and evaluate efficiency programs, including performance incentive.