# 2019-2021 Plan Conservation & Load Management Plan Update

*Connecticut's Energy Efficiency & Demand Management Plan*

Connecticut General Statutes—16-245m(d)

Submitted by: Eversource Energy, United Illuminating, Connecticut Natural Gas Corporation, and Southern Connecticut Gas

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# CHAPTER ONE: EXECUTIVE SUMMARY & OVERVIEW

## 1.1 EXECUTIVE SUMMARY

For over 20 years, Connecticut's electric and natural gas utilities have delivered nationally-recognized and award-winning energy efficiency programs. This comprehensive, multi-year energy efficiency and demand management plan update ("2019-2021 Plan") builds upon the utilities' expertise and prior success in delivering cost-effective, electric and natural gas energy-saving programs. The 2019-2021 Plan was created pursuant to Connecticut General Statutes § 16-245(m) and § 16-32(f) by The Connecticut Light and Power Company doing business as Eversource Energy ("Eversource") and The United Illuminating Company ("United Illuminating") (collectively, the "Electric Companies"), and the Connecticut Natural Gas Corporation ("CNG"), Southern Connecticut Gas ("SCG"), and Yankee Gas Services Company doing business as Eversource Energy (collectively known as the "Natural Gas Companies")(collectively "the Companies").

The 2019-2021 Plan is a $714 million investment in making Connecticut more energy efficient. This investment results in significant energy and cost savings for customers, the development of a highly-skilled green workforce in the state, improved productivity in business operations, a healthier indoor environment for Connecticut's residents and businesses, and reduced air pollution emissions (e.g., nitrous and sulfur oxides, and carbon dioxide).

Over the next three years, the Companies' energy efficiency and demand management initiatives will:

(1) Generate $3.60 into the state's economy for every $1 dollar invested in energy efficiency.

(2) Protect public health and the environment through significant reductions in carbon dioxide ("$CO_2$") emissions (7,886,243 tons over lifetime) and other air pollutants.

(3) Provide an economic lifetime benefit of $2.6 billion dollars.

(4) Result in electric lifetime savings of 9.15 billion kilowatt-hours ("kWh"), natural gas lifetime savings of 29 billion cubic feet of natural gas ("Bcf"), oil lifetime savings of 81.8 million gallons, propane lifetime savings of 17.6 million gallons of propane, and 124,000 kW of peak demand reduction.

(5) Reinvest energy efficiency funds into the state's economy and workforce through training initiatives, professional development, and direct services.

(6) Create and support 34,000 jobs[1] in the state (annually).

(7) Offer innovative financing solutions that leverage private capital to optimize energy efficiency funds.

(8) Improve the efficiency of business operations and provide customized sustainable solutions to Connecticut's businesses, municipalities, state government, industries, and manufacturers.

The Companies worked extensively and collaboratively with Connecticut's Energy Efficiency Board and its consultants to develop an energy efficiency and demand management plan that is consistent with the board's priorities, addresses the needs of electric, natural gas, oil, and propane customers, and builds upon the momentum of Connecticut's energy efficiency efforts over the past quarter of a century. The 2019-2021 Plan is designed as a flexible structure of energy efficiency initiatives and programs that the Companies can modify swiftly in response to new building codes, customers' demands, evaluations, federal regulations, and market trends that may occur during the 2019-2021 Plan's three-year period. In Table 1-1 below, the Companies detail the annual operating budgets and energy savings forecasted for the 2019-2021 Plan.

Table 1-1: 2019-2021 Plan Savings & Benefits*

| | Budgets ($000) | | | Annual Savings | | | | | | Lifetime Savings |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Electric | Natural Gas | Total | Electric (GWh) | Peak (MW)** | Natural Gas (MMcf) | Oil (gallons) | Propane (gallons) | $CO_2$ Emissions (tons) | Lifetime Benefit ($000) |
| 2019 | $185,395 | $52,903 | $238,298 | 305 | 44 | 718 | 982,912 | 232,819 | 208,702 | $924,563 |
| 2020 | $184,894 | $53,886 | $238,781 | 296 | 42 | 720 | 1,188,439 | 262,007 | 222,504 | $770,286 |
| 2021 | $182,629 | $54,558 | $237,187 | 261 | 38 | 665 | 1,407,852 | 295,518 | 191,785 | $877,172 |
| TOTAL | **$552,918** | **$161,348** | **$714,266** | **862** | **124** | **2,103** | **3,579,203** | **790,344** | **622,991** | **$2,572,022** |

* Savings does not include Demand Response (Utility and/or ISO-NE).

[1] US Department of Energy. U.S. Energy Employment Report, 2017.

## 1.2 OVERVIEW

### LEGISLATIVE HISTORY

Public Act 98-28—*An Act Concerning Electric Restructuring* was passed by the Connecticut General Assembly in 1998 and established the Conservation & Load Management Fund (known today as the "Connecticut Energy Efficiency Fund" or "Energy Efficiency Fund"). Initially, Connecticut's energy efficiency programs were funded solely by electric commercial, industrial, and residential customers across the state. Public Act 98-28 established the Connecticut Energy Efficiency Fund's primary objectives: (1) to advance energy efficiency, (2) to mitigate the negative environmental impacts of energy generation, and (3) to promote economic development through lower energy bills, enhanced energy security, and increased energy reliability. Additionally, Public Act 98-28 established the Energy Conservation Management Board (known today as the "Energy Efficiency Board") to advise Connecticut's Electric Companies in developing their annual energy efficiency and load management plans.

In 2005, Public Act 05-01—*An Act Concerning Electricity and Energy Efficiency* was passed by the Connecticut General Assembly. This legislation created a funding mechanism for the Natural Gas Companies to develop and implement cost-effective energy efficiency programs that reduce natural gas consumption for residential and commercial/industrial customers. The Act also created energy efficiency programs and a funding mechanism for the Connecticut Municipal Electrical Energy Cooperative ("CMEEC"). Additionally, under Public Act 05-01, the Energy Efficiency Board saw its role expanded to providing guidance to both the Electric and Natural Gas Companies in their development of comprehensive energy-saving programs for electric and natural gas customers.

Public Act 05-01[2] codified the establishment of a joint financing committee between the Energy Efficiency Board and the Renewable Energy Investment Fund (known today as the "Connecticut Green Bank"). Pursuant to Public Act 05-01[3], this Joint Working Committee must coordinate the initiatives and programs overseen by both the Energy Efficiency Board and the Connecticut Green Bank to reduce the long-term costs, negative environmental impacts, and security risks associated with energy consumption across the state. The efforts of the Joint Working Committee are further detailed in Appendix C: Financing. In 2007, new legislation called for the Companies to pursue "all cost-effective energy efficiency" with the passage of Public Act 07-242—*An Act Concerning Electricity and Energy Efficiency*. This legislation envisioned energy efficiency as the focal point for statewide energy policy.

[2] Public Act 05-01, Section 5(d)(2).
[3] Public Act 05-01, Section 16-245.

The Connecticut General Assembly passed landmark legislation in 2011, Public Act 11-80—*An Act Concerning the Establishment of the Department of Energy Environmental Protection and Planning for Connecticut's Energy Future*. Public Act 11-80 created the Department of Energy & Environmental Protection ("DEEP"), laid the groundwork for pursuing all cost-effective energy efficiency, and requires DEEP[4] to prepare a Comprehensive Energy Strategy for Connecticut every three years. The first Comprehensive Energy Strategy was issued in 2012. Additionally, Public Act 11-80 established ambitious energy-saving targets for the state, including weatherizing 80 percent of Connecticut's residential homes by 2030 and reducing state buildings' energy consumption by 10 percent by 2013. The 2018 Comprehensive Energy Strategy and its goals are further discussed in Section 1.3.

In 2013, the Connecticut General Assembly passed Public Act 13-228—*An Act Concerning Implementation of Connecticut's Comprehensive Strategy and Various Revisions to the Energy Statutes*. Public Act 13-228 modified how the Electric and Natural Gas Companies developed their energy efficiency plans with a requirement for them to develop a three-year combined plan, beginning on November 1, 2015. The 2019-2021 Plan is the second three-year plan developed after the passage of Public Act 13-228. This legislation provided the framework for increased energy efficiency spending in Connecticut and made organizational changes to the Energy Efficiency Board. Public Act 13-228 also requires the Energy Efficiency Board and the Connecticut Green Bank to finance residential energy efficiency and renewable energy measures utilizing private capital with on-bill loan payments via electric and natural gas utility bills.

During the 2016-2018 Plan, the Companies saw significant funding for energy efficiency programs diverted to the state's General Fund through the Connecticut General Assembly's passage of June Special Session Public Act 17-2, *An Act Concerning the State Budget for the Biennium Ending June 30, 2019, Making Appropriations Therefor, Authorizing and Adjusting Bonds of the State and Implementing Provisions of the Budget* ("SS Public Act 17-2") on October 31, 2017. June SS Public Act 17-2 diverted $63.5 million per year for Fiscal Year 2018 and 2019 from the Energy Efficiency Fund and diverted an additional $10 million per year in proceeds from the Regional Greenhouse Gas Initiative's carbon trade auctions. These diversions negatively impacted the Companies' Energy Efficiency Portfolios for 2017, 2018, and 2019.

For the 2019-2021 Plan, the Companies will see partial restoration of funds for Program Year 2019, and full funding restored for Program Years 2020 and 2021. These budget restorations are a direct result of the Connecticut General Assembly's passage of Public Act 18-50—*An Act Concerning Connecticut's*

[4] Public Act 11-80, Section 51.

*Energy Future*.[5] Public Act 18-50 also changed the structure of how energy efficiency programs are funded in the state to help deter future funding diversion efforts.

Additionally, Public Act 18-50 introduced a new policy of the state to reduce energy consumption by 1.6 million MMBtus (one million British Thermal Units), or "the equivalent megawatts of electricity,"[6] annually each year for calendar years commencing on and after January 1, 2020 through calendar year 2025.[7] Additionally, Public Act 18-50 revised the state's general statutes (specifically section 16-245) requiring the Companies to be fuel blind in their delivery of energy efficiency services[8] and also added "demand management" to the Companies' legislatively directed program mandates.[9]

Table 1-2: 2019-2021 Plan MMBtu Savings*

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| Legislative Goal [10] | 1.6 | 1.6 | 1.6 |
| Companies' Goal | 1.9 | 1.9 | 1.8 |

*In millions of MMBtu.

## AWARDS & RECOGNITION

For over a decade, the American Council for an Energy Efficient Economy ("ACEEE") has recognized Connecticut as a perennial top-ten state in its annual scorecard ranking the 50 states. Continuing its successful streak, Connecticut's energy policies and energy efficiency programs were ranked fifth in the nation by the 2018 ACEEE State Energy Efficiency Scorecard, moving up one place from its sixth place ranking in 2017. Additionally, the Companies and the Energy Efficiency Board have received notable

[5] Public Act 18-50, *An Act Concerning Connecticut's Energy Future*. Approved May 24, 2018. Also known as Senate Bill 9 ("SB 9") Available at: https://www.cga.ct.gov/2018/act/pa/pdf/2018PA-00050-R00SB-00009-PA.pdf.

[6] Public Act 18-50, § 8. "It shall be the policy of the state to reduce energy consumption by not less than 1.6 million MMBtu, or the equivalent megawatts of electricity, as defined in subdivision (4) of section 22a-197 of the general statutes, annually each year for calendar years commencing on and after January 1, 2020, up to and including calendar year 2025." While PA 18-50 refers to "megawatts," the technical conversion of MMBtus (as an energy unit) to an electric unit would be megawatt-hours. The Plan uses "megawatt-hours" throughout the remainder of the Plan when citing PA 18-50.

[7] Public Act 18-50, § 8. Note that the MMBtu savings to meet the state policy goal can come from the electric or gas programs, and therefore can include savings from electric, natural gas, fuel oil, and propane measures, similar to the multiple fuel savings reporting in the Annual Legislative Report.

[8] Public Act 18-50, § 9(d)(1). "…provided a customer of an electric distribution company may not be denied such services based on the fuel such customer uses to heat such customer's home."

[9] Public Act 18-50, § 9(d)(1). "…of implementing "cost effective energy conservation programs, *demand management* and market transformation initiatives." This directive starts in 2020.

[10] Public Act 18-50, § 8.

awards and recognition over the 2016-2018 Plan's implementation, including recognitions from the U.S. Environmental Protection Agency ("EPA"), the US Department of Energy ("DOE"), and the EPA's ENERGY STAR® program.

In 2018, the EPA recognized the Companies with the 2018 ENERGY STAR Partner of the Year Sustained Excellence Award, the highest level of achievement awarded for delivery of innovative programs and services, including: ENERGY STAR-certified lighting and appliances, Home Performance Services (Home Energy Solutions ("HES")/HES-Income Eligible), the Multifamily Initiative, New Construction, Additions & Major Renovations solution, and for promoting ENERGY STAR-certified heating, cooling, and water heating equipment.

In 2018, the Association of Energy Service Professionals ("ASEP") recognized the Companies with an Outstanding Achievement in Residential Program Design & Implementation Award for leading the way in building market recognition of the DOE Home Energy Score as a valuable home energy labeling tool. In April 2015, the Companies became the first statewide implementers for the DOE Home Energy Score in the nation. ASEP recognized the Companies' innovative approach to delivering the DOE Home Energy Score to customers, resulting in 25,000 generated scores to date, and for sharing their best practices with other DOE Home Energy Score Partners.

Additionally, Eversource and the Energy Efficiency Fund, nominated by Becton Dickinson, were awarded a 2018 Smart Energy Decisions Innovation Award in the Utility Partnership category. The award recognizes the outstanding teamwork between the entities, and the judges particularly admired the creation of a long-term partnership. Eversource has worked extensively for several years with Becton Dickinson, and the two companies recently announced a multi-year agreement that supports Strategic Energy Management Planning to maximize energy savings and helps to streamline the incentive process.

## 1.3 CONNECTICUT'S ENERGY EFFICIENCY POLICY

Energy efficiency is the most cost-effective and reliable resource for Connecticut's energy policymakers and stakeholders. The Companies have worked extensively with DEEP, the Energy Efficiency Board and its consultants to structure the 2019-2021 Plan's services, incentives, and initiatives to meet relevant statutory requirements and policy guidance. Accordingly, the 2019-2021 Plan's primary goal is to "implement cost-effective energy conservation programs, demand management and market transformation initiatives."[11] Working within this statutory scope, the Companies have also aligned the 2019-2021 Plan with the 2018 Comprehensive Energy Strategy. Implementing the 2019-2021 Plan will

[11] Public Act 18-50, § 9(d)(1). The "demand management" component of this directive starts in 2020. Existing law already requires C&LM plans "to implement cost-effective energy conservation programs and market transformation initiatives". Conn. Gen. Stat. §16-245m(d)(1). Prior C&LM plans have also included load management programs.

help Connecticut achieve the state's overall energy policy goal of cheaper, cleaner and more reliable energy.

## COMPREHENSIVE ENERGY STRATEGY

In February 2018, DEEP issued the 2018 Comprehensive Energy Strategy[12] ("2018 CES") to advance Connecticut's goal of creating a cheaper, cleaner, more reliable energy future for all the state's residents and businesses. Pursuant to Public Act 11-80, DEEP must issue a new and updated CES plan for Connecticut every three years, which considers all the energy needs of the state, including but not limited to: electricity, cooling, heating, and transportation.

The 2018 CES notes that while Connecticut has reduced greenhouse gas ("GHG") emissions four percent below 1990 levels and 14 percent below 2001 levels,[13] that greater reductions are needed for the state to meet the Global Warming Solutions Act's 2050 target goals.[14] To achieve reductions in GHG emissions, the 2018 CES details eight long-term strategies for transitioning the state to a zero-carbon economy. The first two strategies are focused on energy efficiency in buildings and the supporting industry and infrastructure developed as a result in Connecticut:

(1) Strategy 1: Ensure sustainable and equitable funding for efficiency; and

(2) Strategy 2: Advance market transformation of the energy efficiency industry.

The 2018 CES references several supporting mechanisms for implementing the two above-referenced strategies, including: (1) reducing the energy burden of income-eligible households; (2) addressing the health and safety barriers preventing homes from being weatherized; (3) catalyzing the competitiveness of Connecticut's businesses with improved productivity; (4) standardizing efficiency with the establishment of performance codes, standards, and certifications; (5) developing a sustainable workforce to meet the energy efficiency industry's demand; and (6) transitioning to cleaner thermal fuels and technologies.

The Companies are supportive of the state's efforts to achieve its GHG emission reduction goals. By focusing on maximizing energy and cost-savings for customers, the Companies' cost-effective energy efficiency services, incentives, and outreach efforts in the 2019-2021 Plan will also produce significant

[12] Department of Energy and Environmental Protection. 2018 Comprehensive Energy Strategy. Available at: http://www.ct.gov/deep/lib/deep/energy/ces/2018_comprehensive_energy_strategy.pdf.
[13] 2018 Comprehensive Energy Strategy, p. 9.
[14] In 2008, the Connecticut General Assembly passed Public Act 08-98—*An Act Concerning Global Warming Solutions* ("Global Warming Solutions Act"). The Global Warming Solutions Act requires the state to reduce greenhouse gas emissions to 10 percent below 1990 levels by January 2020 and to reduce GHG emissions to 80 percent below 2001 levels by January 2050.

public health and environmental benefits, such as reduced GHG and other pollution emissions, which will advance the state's energy policy goals.

### Integration of 2018 CES Strategies into 2019-2021 Plan

In developing the 2019-2021 Plan, the Companies have considered and integrated several of the 2018 CES strategies and supporting mechanisms while they were developing the goals and objectives of the Residential, Commercial and Industrial ("C&I"), and Workforce Development, Education & Community Outreach Energy Efficiency Portfolios. For the 2019-2021 Residential Energy Efficiency Portfolio, the Companies will continue to promote the HES and HES-Income Eligible solutions and promulgate new guidance for energy efficiency vendors who come across health and safety barriers (e.g., lead, mold, and asbestos containing material) while conducting home energy performance assessments.

Through the Companies' C&I Energy Efficiency Portfolio, business and manufacturing customers will continue to be encouraged to participate in Strategic Energy Management initiatives, including the Business and Energy Sustainability solution. The 2019-2021 Plan focuses on helping C&I customers improve productivity, integrate sustainable processes and equipment into their buildings and operations, and will continue to tailor energy efficiency strategies to key C&I market segments.

The Companies' innovative Workforce Development initiative, originally developed for the 2016-2018 Plan, employs training and professional development strategies for students at the state's technical schools and universities, as well as current employees of energy efficiency contractors, vendors, and trade allies. These successful sustainable workforce development strategies will continue and expand during the 2019-2021 Plan and are further detailed in Chapter Four: Workforce Development, Education & Community Outreach.

### Low-Carbon Heating Technologies

During 2019, the Companies plan to explore and pilot an outreach and incentive strategy to increase the adoption of cost-effective, low-carbon heating technologies in Connecticut's residential and C&I buildings to reduce GHG emissions while saving money for customers. This strategy would align the 2019-2021 Plan directly with the 2018 CES, which notes that the "decarbonization of thermal systems is necessary" for the state to progress toward meeting the Global Warming Solutions Act's goals of GHG emissions reductions and to improve air quality. In 2019, the Companies will explore cost-effective low-carbon heating technologies (e.g., water and air-source heat pumps, and heat pump water heaters) through targeted incentives, customer education, and contractor outreach and trainings. The heat pump heating pilot installations will begin in July 2019, after the legislatively-diverted funding is partially restored. Future efforts regarding low-carbon heating technologies will be considered during the 2020 and 2021 Plan Update planning processes, and any such efforts will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP. The Energy Efficiency Board plans to review and assess the 2019 pilot results in September 2019, in time for the 2020 Plan

Update, and the Energy Efficiency Board will review an independent evaluation of the results of the 2019 pilot and any 2020 efforts in the third quarter of 2020.

### Benefit-Cost Testing and the Resource Value Test

The Companies' current benefit-cost testing methodologies are not permitted by DEEP to account for some of the benefits of energy-efficient technologies, including water savings, non-embedded GHG emissions, and improved air quality. During the 2019-2021 Plan period, the Companies plan to work collaboratively with DEEP and the Energy Efficiency Board on the development of a Resource Value Test to align their benefit-cost testing with the strategies outlined in the 2018 CES. The Resource Value Test may provide alternative methodologies to screen cost-effective energy-efficient measures that offer both energy savings and have environmental attributes (i.e., reductions in GHG emissions), such as high-efficiency heat pumps. The proposed revisions to the benefit-cost test will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP. For further elaboration on the Companies' benefit-cost testing, please see Chapter Five: Benefit-Cost Screening.

## 1.4 2019-2021 PRIORITIES & PLAN HIGHLIGHTS

For the past decade, Connecticut has been consistently ranked as a top 10 state in energy efficiency policies and programs. The continuity of the state's success is directly attributable to the determined efforts of the Companies, the Energy Efficiency Board, DEEP, and a multitude of stakeholders. The 2019-2021 Plan covers years 20, 21, and 22 of electric conservation programs since the electric restructuring Public Act 98-28 was passed, and covers years 13, 14, and 15 of natural gas conservation programs since the passage of energy independence legislation Public Act 05-01.

The 2019-2021 Plan's initiatives and programs are designed to maintain Connecticut's leadership in energy efficiency and demand reduction programs and reflect market trends, new federal regulations and policies, and emerging technologies. The 2019-2021 Plan is also designed around evaluation results of its current programs which will help modify, improve, and lead the programs toward greater efficacy while driving energy savings, GHG emissions reductions, and increased economic benefits. The following 2019-2021 Plan priorities were developed in collaboration with DEEP and the Energy Efficiency Board and are detailed further in Table 1-3 on the next page.

Table 1-3: 2019-2021 Plan Priorities

| Priorities | Residential | Commercial & Industrial | Workforce Development, Education & Community Outreach |
|---|---|---|---|
| 1: Advance State Energy & Environmental Policy Goals* | • Evaluate consistency of Cost-Effectiveness Tool with National Standards Practice Manual framework*<br>• Support strategic adoption of heat pump technologies*<br>• Offer all-electric package for residential new construction market<br>• Deliver EE services to all fuels*<br>• Deliver 1.6 annual MMBtu savings, or equivalent megawatt-hours, for all fuels* combined by 2020 | • Evaluate consistency of Cost-Effectiveness Tool with National Standards Practice Manual framework*<br>• Support strategic adoption of heat pump technologies*<br>• Promote HVAC Strategy<br>• Deliver EE services to all fuels*<br>• Deliver 1.6 annual MMBtu savings, or equivalent megawatt-hours, for all fuels* combined by 2020 | • Offer EPA Portfolio Manager training |
| 2: Offer Tailored Solutions for Market Segments While Ensuring Equitable Distribution | • Connect EE to renewables in new construction market (Zero Energy Challenge, Solar PV Readiness Checklist)<br>• Research and target underserved customers and market sectors | • Identify/target market sectors<br>• Strengthen trade ally networks<br>• Implement new Business Energy Advantage solution (200-500 kW)<br>• Serve as primary informational conduit for EE, renewables, and sustainability projects<br>• Shift rebates upstream to distributors to drive EE in specific market sectors (Restaurants = comm. kitchen equipment)<br>• Research and target underserved customers and market sectors | • Offer direct trainings for businesses/municipalities (CEM, BOC and EPA PM)<br>• Conduct *eesmarts* outreach/teacher training to underserved K-12 communities |
| 3: Focus on Direct Savings to Customers | • Ensure funding directed toward core-saving solutions (Retail Products, HVAC/DHW, Home Performance Services, Behavioral-Based Strategies and New Construction, Additions & Major Renovations) | • Ensure funding directed toward core-saving solutions (Energy Conscious Blueprint, Energy Opportunities, SBEA, and Business & Energy Sustainability) | • Develop technical training courses for tech. schools and community colleges |
| 4: Develop and Maintain a Sustainable Workforce | • Provide ongoing training for Home Energy Performance vendors<br>• Coordinate training w/HVAC and DHW equipment contractors, manufacturers, and distributors<br>• Offer building code trainings | • Offer trainings to support Advanced Lighting and HVAC Strategy<br>• Offer training through Business & Energy Sustainability solution<br>• Offer building code trainings | • Develop technical training courses for tech. schools and community colleges<br>• Offer trainings for businesses/municipalities (CEM, BOC & EPA PM |
| 5: Continuous Commitment to Deliver Comprehensive Energy Efficiency Strategies | • Offer tiered incentives for multi-measure/multi-end use comprehensive projects<br>• Offer ENERGY STAR Retail Products Platform<br>• Offer early retirement incentive promotions | • Offer tiered incentives for multi-measure/multi-end use comprehensive projects<br>• Strategic Energy Management/ISO 50001 and promote a SEM cohort approach<br>• Promote Adv. Lighting Strategy<br>• Promote HVAC Strategy<br>• Explore offering 5-year loan terms to encourage comprehensiveness<br>• Strengthen trade ally networks<br>• Shift rebates upstream to distributors to drive EE in specific market sectors | • Offer direct trainings for businesses/municipalities (CEM, BOC and EPA PM)<br>• Develop technical training courses for tech. schools and community colleges |
| 6: Implement Effective Demand Reduction Strategies | • Evaluate and implement Residential Demand Reduction Strategies | • Evaluate and implement C&I Demand Reduction Strategies | |
| 7: Continue to Explore and Implement Financing Options | • Explore financing options to address health and safety barriers for Home Energy Performance solutions (HES, HES-Income Eligible and Multifamily) | • Introduce new SBEA recapitalization strategies to leverage EE funds w/private capital<br>• Offer SBEA-modeled financing for new Business Energy Advantage solution | |

*The Companies note that DEEP is currently conducting a formal review process (Fall/Winter 2018) of the benefit-cost methodologies utilized in calculating savings for Connecticut's energy efficiency programs. Key priorities may change based upon the outcomes of this review process thus affecting the Companies' Residential and C&I Energy Efficiency Portfolio's designs, savings, and programs.

## 2019-2021 PRIORITIES

- **Priority One: Advance State Energy & Environmental Policy Goals**

  The Companies are committed to fully supporting two energy efficiency strategies (see page 7) designed to help the state in its efforts to reduce GHG emissions that result from energy usage in residential and C&I buildings, deliver 1.6 annual MMBtu savings, or equivalent megawatt-hours, for all fuels combined by 2020, and to deliver cost-effective energy efficiency services to all fuels. To support these goals, the 2019-2021 Plan will explore outreach and incentives strategies designed to power energy end-use equipment with electricity to drive high efficiency and reduce the use of deliverable fuels.

  During 2019, the Companies plan to explore and pilot an incentive and outreach strategy for its Energy Efficiency Portfolios to promote low-carbon heating technologies (e.g., air-source and ground-source heat pumps). In a pilot in 2019, the Companies will promote cost-effective low-carbon heating technologies (e.g., water and air-source heat pumps, and ground-source heat pumps) through increased incentives, customer education, and contractor outreach and trainings. The pilot installations will begin in July 2019, after the legislatively-diverted funding is partially restored. Future efforts regarding low-carbon heating technologies will be considered during the 2020 and 2021 Plan Update planning processes, and any such efforts will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP.

  The Companies plan to evaluate the consistency of the current Cost-Effectiveness Tool ("CET") with the National Standards Practice Manual ("NSPM") framework during the 2019-2021 Plan period.[15] Additionally, the Companies plan to work collaboratively with DEEP and the Energy Efficiency Board to propose a Resource Value Test that screens cost-effective energy efficiency measures for both energy savings (i.e., kWh, kW, ccf, and gallons) and environmental attributes (e.g., GHG emissions). The development of this new screening methodology may allow the Companies to support additional energy efficiency measures, including air-source and ground-source heat pumps. The proposed revisions to the benefit-cost test and any new measures will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP.

[15] The Companies note that DEEP is currently conducting a formal review process (Fall/Winter 2018) of the benefit-cost methodologies utilized in calculating savings for Connecticut's energy efficiency programs. Key priorities may change based upon the outcomes of this review process affecting the Companies' Residential and C&I Energy Efficiency Portfolio's designs, savings, and programs.

- **Priority Two: Offer Tailored Solutions for Market Segments While Ensuring Equitable Distribution**

  Additionally, the Companies will continue to promote the integration of energy efficiency and renewable energy strategies, financing programs, and solutions. This integration will help the Companies meet Public Act 98-28's objective of "mitigating the negative environmental impacts of energy generation." Throughout the 2019-2021 Plan's three-year period, the Companies will collaboratively work with the Connecticut Green Bank to promote the intersectionality of renewables and energy efficiency. For the Residential Energy Efficiency Portfolio, the Companies will promote renewables and sustainability through the Zero Energy Home Retrofit pilot (through the HES solution) and the New Construction, Additions & Major Renovations solution's Solar PV Readiness Checklist and the Zero Energy Challenge.

  For the 2016-2018 Plan, the Companies' C&I Energy Efficiency Portfolio focused on reaching targeted C&I market segments (e.g., hospitals and colleges/universities). The Companies will continue this successful endeavor for the 2019-2021 Plan by packaging marketing and tailoring solutions to the needs of the individual customer or market segment. The Companies will include four additional target market segments in 2019-2021: (1) Aerospace and Defense, (2) Information, Communications, and Technology, and (3) Distribution, Fulfillment Centers & Warehousing, and (4) Utilities and Transportation. In September 2018, the Companies rolled out a marketing communications plan to Small Business Energy Advantage vendors with bundled measures and market-specific communications, including case studies, marketing materials, and program offerings.

  Throughout the 2019-2021 Plan, the Companies will reinforce their role as the primary informational conduit for C&I customers to become educated and connected to all sustainable and energy issues that adversely or positively impact a customer's industry, business needs, or market segment. Additionally, the Companies are committed to researching and targeting underserved customers and market sectors to ensure equitable distribution of energy efficiency and demand management efforts to all Connecticut customers. These efforts range from reaching more mid-sized businesses through the Business Energy Advantage solution (200 to 500 kW demand) to ensuring the Retail Products solution reaches the hard-to-reach market.

- **Priority Three: Focus on Direct Savings to Customers**

  For the 2019-2021 Plan, the Companies will ensure that energy efficiency funds are directed toward core-saving solutions for the Residential Energy Efficiency Portfolio (i.e., Consumer Products, HVAC and Domestic Hot Water Equipment, Home Performance Services, Behavioral-Based Strategies, and New Construction, Additions & Major Renovations solutions) and C&I

Energy Efficiency Portfolios (i.e., Energy Conscious Blueprint, Energy Opportunities, Small Business Energy Advantage, and Business & Energy Sustainability solutions).

- **Priority Four: Develop and Maintain a Sustainable Workforce for Connecticut**

  For the 2019-2021 Plan, the Companies will continue to implement their successful workforce development strategies for the energy efficiency industry. These strategies include supporting technical classes, trainings, and certifications for the state's technical high schools and universities. Additionally, the Companies will focus their efforts on training the state's current energy efficiency workforce regarding emerging technologies and energy-efficient design, as well as work to promote certification offerings through colleges and universities.

  To remain an energy efficiency leader, Connecticut must develop and train a highly-trained workforce regarding energy-efficient and demand management technologies, design, and strategies. Without a workforce to provide direct energy performance services or to design zero energy buildings and high-efficiency lighting designs, the Companies' successful Residential and C&I Energy Efficiency Solutions cannot be implemented.

  Additionally, the Companies recognize that a sustainable energy workforce needs to be made aware of other industry players' roles and responsibilities in implementing energy efficiency strategies. In 2019-2021, the Companies will continue to expand their trade ally networks and host networking sessions/roundtables where vendors and trade ally partners can meet and work together to develop energy-saving projects that comprehensively address all energy-efficient measures and strategies.

- **Priority Five: Continuous Commitment to Deliver Comprehensive Energy Efficiency Strategies**

  Public Act 11-80 directed the Companies to deliver "all cost-effective energy efficiency" to Connecticut's residential and C&I customers. For the 2019-2021 Plan, the Companies will continue to develop goals and targets that drive energy savings and promote comprehensiveness in energy efficiency projects. For both the Residential and C&I Energy Efficiency Portfolios, the Companies will utilize tiered incentive structures to promote multi-measure and multi-end use comprehensive projects.

  With over 20 years' experience, the Companies understand that the energy efficiency marketplace is ever changing. Technologies, initiatives, codes, and benchmarks are continuously evolving, and the Companies' Energy Efficiency Portfolios must be designed as flexible infrastructures capable of being modified quickly in response. This flexibility will allow the Companies to maintain their momentum of successfully implementing energy efficiency programs for the 2019-2021 Plan.

In the 2019-2021 Plan, the Companies will encourage energy efficiency to occur organically through market actions such as code initiatives, leveraging financial offerings, moving incentives upstream, targeting market segments, and deepening trade ally networks and partnerships previously established during the 2016-2018 Plan. For the 2019-2021 Plan, the Companies will utilize their C&I Business & Energy Sustainability solution to drive comprehensive energy strategies.

- **Priority Six: Implement Effective Demand Reduction Strategies**

Demand reduction strategies can help reduce energy prices and price spikes during summer and winter peak demand. During the 2016-2018 Plan, the Companies developed and deployed several demand reduction strategies for residential, small business, and large C&I customers throughout the state. Currently, the Companies are evaluating the effectiveness of these pilots to determine if, and which, full-scale demand reduction strategies and demand response programs should be deployed and incentivized for the Residential and C&I Energy Efficiency Portfolios in 2019-2021. For the 2019-2021 Plan, the demand reduction strategies are further explored and discussed in their respective energy efficiency portfolio chapters—Residential Demand Reduction Strategies (Chapter Two) and C&I Demand Reduction Strategies (Chapter Three).

An important benefit of the Companies' Residential and C&I Energy Efficiency Portfolios is their ability to reduce winter peak demand in Connecticut; mainly through lighting energy efficiency measures. Though the New England region's summer peak demand remains higher than winter's, the energy reductions achieved through the implementation of electric energy efficiency measures in Connecticut homes and businesses is important in order to maintain a reliable electric grid.

- **Priority Seven: Continue to Explore and Implement Financing Options**

For the 2019-2021 Plan, to further unlock energy efficiency opportunities and to create healthier homes, the Companies will promulgate new guidance for home performance vendors (HES and HES-Income Eligible solutions) who come across health and safety barriers (e.g., mold, failed combustion zones, asbestos containing material, and vermiculite) while conducting energy performance assessments in a home. The existence of these health and safety barriers in a home prevent the Companies from delivering valuable direct install services.

For the 2019-2021 Plan, the Companies will introduce new Small Business Energy Advantage recapitalization strategies to leverage energy efficiency funds with private capital. Additionally, Eversource will introduce SBEA-modeled financing for its new Business Energy Advantage solution.

## 2019-2021 PLAN HIGHLIGHTS

The Companies remain focused on retaining Connecticut's status as a leader in the development of energy efficiency and demand reduction initiatives. For the 2019-2021 Plan, the Companies intend to build upon their existing energy-saving program structures and customer engagement strategies through a number of innovative efforts and programs. Additionally, the Companies have analyzed the impact of federal regulations and policies, evaluation results, and market trends to compile the 2019-2021 Plan.

The highlights referenced in this section will affect energy savings, customer engagement, program implementation, and strategies throughout the three-year period of the 2019-2021 Plan.

- **Customer Segmentation**

  A key centerpiece of the C&I Energy Efficiency Portfolio for the 2016-2018 Plan was focusing on providing customer-centric actions and solutions for target C&I market segments. For the 2019-2021 Plan, the Companies' Residential and C&I Energy Efficiency Portfolios will continue to focus on delivering packaged marketing and tailored, sustainable solutions to key market segments (e.g., multifamily, income-eligible, manufacturing, small and medium-sized businesses, etc.).

  For example, the Companies have identified the need for upstream incentives and a broader market push to promote energy-saving commercial kitchen equipment (e.g., freezers, fryers, griddles, and refrigerators) to the Restaurant market sector. To increase the stocking of this equipment with wholesalers and distributors, the Companies plan to move commercial kitchen equipment incentives upstream for the 2019-2021 Plan, while encouraging the recycling of old, inefficient equipment.

  For the C&I Energy Efficiency Portfolio, the Companies have divided the market segments into two main categories (Commercial and Industrial) to help focus their tailored solutions and packaged marketing efforts. For example, in September 2018, the Companies rolled out a marketing communications plan to Small Business Energy Advantage vendors with bundled measures and market-specific communications, including case studies and offerings. Four new C&I market segments that will be targeted in 2019-2021 are: (1) Aerospace and Defense, (2) Information, Communications, and Technology, and (3) Distribution, Fulfillment Centers & Warehousing, and (4) Utilities and Transportation.

  In 2019-2021, in the Residential Energy Efficiency Portfolio, the Companies will evaluate the best packaged solutions to reach moderate-income residential customers.

- ### Market-Based Solution for Mid-Size Businesses

For the 2019-2021 Plan, Eversource will deliver a new market-based solution, the Business Energy Advantage, for mid-size businesses that utilize 200-500 kilowatts ("kW") of peak demand. This vendor-driven solution will utilize a Preferred Vendor management structure, incentives, financing mechanisms, and solutions modeled similarly to the Small Business Energy Advantage solution. Eversource developed the Business Energy Advantage solution to bridge the current gap for providing customized solutions and energy-saving services to mid-size businesses consuming either too little or too much energy to be considered a "small business" or "managed commercial account," respectively.

In addition to the introduction of the Business Energy Advantage solution, the Companies will develop a process for the 2019-2021 Plan to introduce new recapitalization strategies that will help leverage energy efficiency funds with private capital.

- ### Lighting Technologies

For the 2019-2021 Plan, the Companies are faced with uncertainty regarding the enforcement of federal lighting standards, specifically the Energy Independence & Security Act of 2007's ("EISA") 2020 standards for General Service Bulbs. The uncertainty regarding EISA 2020 standards (45 lumens per watt) pervades the lighting market vertically; affecting manufacturers, distributors, retail stores, and utilities/energy efficiency providers alike.

For the 2019-2021 Plan, the Companies will utilize and monitor data from evaluations, retail sales, and Residential and C&I Retrofit services to develop and investigate needed program adjustments to address changes in federal standards, EISA enforcement, and lighting market trends. During the 2016-2018 Plan, light-emitting diode technologies gained traction in the lighting marketplace. For the 2019-2021 Plan, rising baseline standards and market penetration will affect the potential energy savings claimed for the Residential Energy Efficiency Portfolio.

During the 2019-2021 Plan, the Companies may have to modify marketing efforts, promotional efforts, negotiated cooperative promotions, and program offerings to align Connecticut's energy efficiency programs quickly with the rapidly changing lighting marketplace. This alignment will most likely occur by January 1, 2020 (if EISA 2020 is enforced) and will most likely affect the Residential Energy Efficiency Portfolio in 2020 and 2021. The impact on the C&I Energy Efficiency Portfolio's energy savings may occur later than the Residential Portfolio's and affect the Companies' efforts for the next three-year plan (2022-2024).

The Companies have each used consistent planning assumptions for the 2019 Residential Energy Efficiency Portfolio's lighting offerings, however, due to uncertainties about the future of lighting savings and costs, the Companies have used some different planning assumptions covering the

2020 and 2021 program years. The planning values for the 2020 and 2021 program years will be analyzed and updated during the planning process to develop the 2020 Plan Update. This process will take place in late 2019 when more information is available.

- **Comprehensive Services Tailored for Customers**

  For the C&I Energy Efficiency Portfolio, the Companies will focus on promoting networking events between C&I customers, Trade Ally Networks, Alliances and Association Partnerships, such as solutions-based roundtables, to drive comprehensive energy efficiency projects and focus on customer needs.

- **Upstream Incentives**

  Throughout the 2016-2018 Plan, the Companies continued to demonstrate success in delivering upstream incentives through their Residential and C&I Energy Efficiency Portfolios. Upstream incentives alter the way retailers and distributors stock their shelves with energy-efficient products, help streamline the rebate process for the customer, and lower the processing costs (per unit redemption) for the Companies.

  For the C&I Energy Efficiency Portfolio, the Companies will offer upstream incentives for commercial kitchen equipment, including: freezers, fryers, griddles, and refrigerators. For the 2019-2021 Plan, the Companies will offer upstream incentives for electric commercial HVAC products, in addition they will offer and explore expanding upstream incentives for natural gas HVAC equipment.

  For the Residential Energy Efficiency Portfolio, the Companies will investigate pushing some window rebates upstream for the 2019-2021 Plan. Additionally, the Companies will evaluate their current ENERGY STAR Retail Products Platform effort to determine if upstream incentives for ENERGY STAR-qualified appliances will continue beyond 2019.

- **Heat Pump Technologies**

  Through 2019, the Companies will provide support to the 2018 CES implementation through expanding their efforts to promote the installation and use of heat pump technologies that provide reductions in heating energy through higher efficiency. This broad promotional and outreach effort will include training HVAC and Home Performance Services contractors on the benefits of heat pumps and how to best identify buildings that could benefit the most from the installation of heat pump technologies and the integration of HVAC controls to optimally operate the heat pumps and the existing heating source. The Companies see these trainings as imperative to the increased adoption of heat pump technologies.

In 2019, the Companies will provide support to the 2018 CES implementation through expanding their efforts to promote the installation and use of heat pump technologies strategically targeting customers that heat with less efficient electric resistance heating equipment and customers seeking to add air conditioning. This targeted promotional and outreach effort will include training HVAC and Home Performance Services contractors on the benefits of heat pumps and how to best identify buildings that could benefit the most from the installation of heat pump technologies. The Companies see these trainings as imperative to the increased adoption of heat pump technologies to electric resistance heat customers.

This support will be provided via multiple engagement channels, including targeted incentives, marketing, customer education, and coordinated financing solutions with the Connecticut Green Bank. Qualifying heat pump technologies will include: central air-source, ground source, and water-source heat pumps, ductless mini split heat pumps, and heat pump water heaters. The Companies will explore expanding the Small Business Energy Advantage solution's offerings to include heat pump technologies.

High-efficiency heat pump technologies have the potential to reduce energy use and lower overall emissions compared to the direct burning of oil, propane, and natural gas. Increased deployment of this energy-efficient technology will align the Companies' energy-saving programs with the goals of the 2018 CES and move the state closer to the Global Warming Solutions Act's GHG emissions reduction goals. In 2019, both the Residential and C&I Energy Efficiency Portfolios will explore and pilot heat pump technologies. In 2020 and 2021, pending Energy Efficiency Board review and DEEP's approval and changes to the Companies' cost-effectiveness testing methodologies, and subject to the Plan Update processes, the programs may support energy optimization to help meet the state's energy, environmental, and climate goals by installing a larger volume of heat pump technologies.

- **Benefit-Cost Testing Methodologies and Inputs**

In May 2017, the National Efficiency Screening Project released the National Standard Practice Manual for Cost-Effectiveness ("NSPM").[16] The NSPM builds upon the existing California Standard Practice Manual that has been used throughout the United States for decades. The NSPM expands benefit-cost testing beyond traditional tests and allows jurisdictions more flexibility to adjust their current tests to align better with local policies. Recently, DEEP has initiated discussions with the Companies on the development of a Resource Value Test consistent with the NSPM to reflect state policy goals outlined in the 2018 CES.

[16] National Efficiency Screening Project. *National Standard Practice Manual*, May 2017. Available at: https://nationalefficiencyscreening.org/national-standard-practice-manual/.

For the 2019-2021 Plan, the Companies will continue to work with DEEP and the Energy Efficiency Board to explore modifications to their current benefit-cost testing methodologies to reflect the true value of energy efficiency. These modifications may include accounting for energy efficiency's positive impact on customer energy costs and GHG emission reductions. The Companies propose a better alignment of their cost-benefit calculations with the 2018 CES through modifications of their currently used methodologies. More information regarding the Companies' suggested modifications to their benefit-cost testing methodologies are detailed in Chapter 5: Cost-Benefit Analysis.

- **Financing**

  The Companies recognize that the provision of financing options to customers increases energy-saving opportunities for all customer segments—Residential and C&I. Through integrated efforts with the Connecticut Green Bank, the Energy Efficiency Board, DEEP, and other private funding sources, the Companies offer a variety of financing options, including: subsidized low-interest third-party loans, referrals to third-party lenders, and subsidized low-interest/interest-free on-bill repayment mechanisms.

  These financing options enable customers to easily implement cost-effective energy efficiency projects while maximizing energy savings. As referenced in the Legislative History section, the Companies, the Energy Efficiency Board and its consultants, and the Connecticut Green Bank work collaboratively through a Joint Working Committee to identify sustainable and attractive financing opportunities to address specific market segment needs. For more detailed information regarding the 2019-2021 Plan's financing mechanisms, see Appendix C: Financing.

- **Early Retirement**

  For the 2019-2021 Plan, the Companies are investigating offering short-term promotions (i.e., Earth Day promotions) to customers who want to retire refrigerators, freezers, and window air conditioning units. Customers will receive an incentive to purchase an energy-efficient replacement.

## 1.5 ENERGY SAVINGS

For the past 20 years, the Companies have a proven track record of developing and administering energy efficiency and demand reduction programs that generate sustainable energy savings (lifetime and annual) for Connecticut's residents and businesses. Since 2000, the Electric Companies' energy-saving programs have achieved 5,974 annual gigawatt-hour ("GWh") and 70,444 lifetime GWh savings. The Natural Gas Companies have helped customers realize 4,886 MMcf annually and 76,012 lifetime MMcf savings.

## ELECTRIC SAVINGS

For the 2019-2021 Plan, the Companies expect to achieve 862 annual GWh savings and 2,103 annual MMcf savings, which is enough to power 100,000 homes for one year. Figure 1-1 depicts the projected electric savings (in GWhs) resulting from the Companies' energy-saving programs and how energy efficiency is a valuable resource for the state to "flatten" electricity consumption in Connecticut over the next few years.

The Gross Sales data (blue line) details the forecasted electric consumption unchecked by the projected impacts of energy efficiency efforts in Connecticut. The Sales with Energy Efficiency data (red line) reflect the projected impacts to electricity consumption due to Connecticut's energy efficiency programs.

Figure 1-1: Projected Electric Savings (2018-2027)[17]

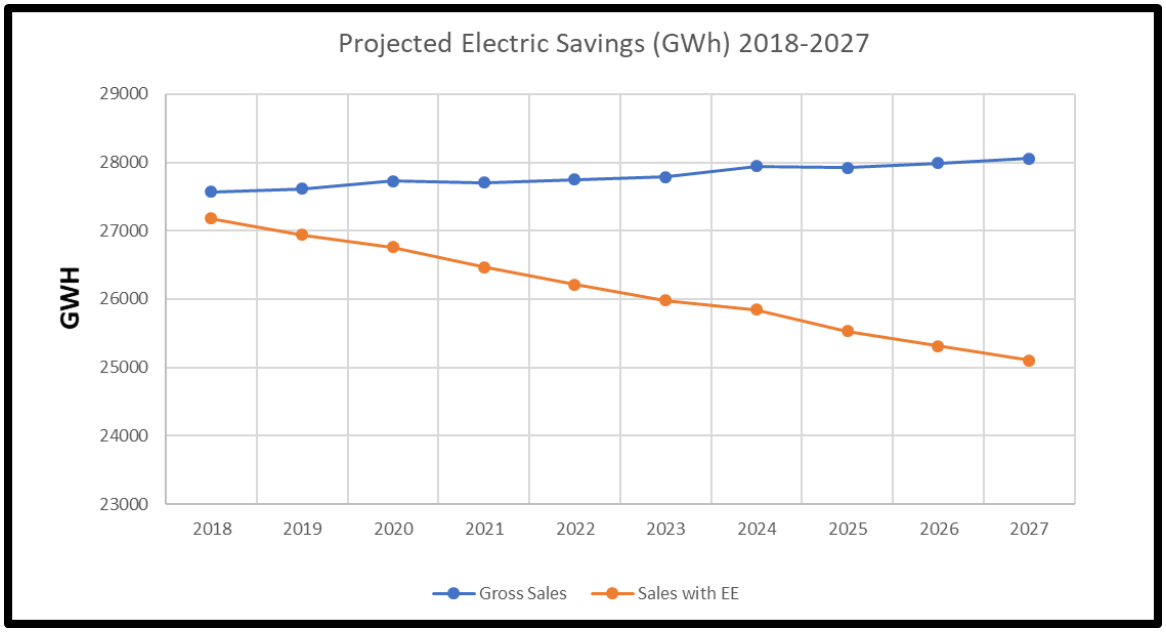


Table 1-4 provides a summary of the projected annual savings from the Electric Companies' energy efficiency programs in the 2019-2021 Plan and the percentage of electric sales.

[17] Eversource source data is: https://www.ct.gov/csc/lib/csc/pendingproceeds/forecast_2018_2019/f2018/transmission-distribution/forecast_2018_eversource_energy_20180301.pdf. United Illuminating source data is: https://www.ct.gov/csc/lib/csc/pendingproceeds/forecast_2018_2019/f2018/transmission-distribution/forecast_2018_ui_20180301.pdf.

Table 1-4: Electric Companies–Summary of Annual Savings and Percentage of Sales

| Companies | 2019 | | | 2020 | | | 2021 | | | 2019-2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GWh Sales | Annual Savings (GWhs) | % of Sales | GWh Sales | Annual Savings (GWhs) | % of Sales | GWh Sales | Annual Savings (GWhs) | % of Sales | GWh Sales | Annual Savings (GWhs) | % of Sales |
| Eversource (Electric) | 20,750 | 246.8 | 1.19% | 20,435 | 235.3 | 1.15% | 20,057 | 208.5 | 1.04% | 61,241 | 690.6 | 1.13% |
| United Illuminating | 5,015 | 58.6 | 1.17% | 4,993 | 60.5 | 1.21% | 4,946 | 52.7 | 1.07% | 14,954 | 171.4 | 1.15% |
| TOTAL | 25,765 | 305.5 | 1.19% | 25,428 | 295.8 | 1.16% | 25,003 | 261.2 | 1.04% | 76,195 | 862.4 | 1.13% |

## NATURAL GAS SAVINGS

Table 1-5 details the projected annual savings from the Natural Gas Companies' energy efficiency programs and percentage of natural gas sales. It should be noted that over the 2018-2021 time period that energy efficiency funding for C&I natural gas solutions and energy savings (*natural gas*) will increase significantly. While still modest in terms of percent of consumption, the following strategies will be implemented during the 2019-2021 Plan to drive natural gas energy savings: (1) establishment of trade ally networks for energy management systems and thermal management, (2) increased upstream incentives targeted toward natural gas end-use equipment (e.g., commercial kitchen equipment), and (3) a focus on end-use equipment and market actions that attain natural gas energy savings.

Table 1-5: Natural Gas Companies–Summary of Annual Savings and Percentage of Sales

| Companies | 2019 | | | 2020 | | | 2021 | | | 2019-2021 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MMcf Sales | Annual Savings (MMcf) | % of Sales | MMcf Sales | Annual Savings (MMcf) | % of Sales | MMcf Sales | Annual Savings (MMcf) | % of Sales | MMcf Sales | Annual Savings (MMcf) | % of Sales |
| Eversource (Natural Gas) | 47,472 | 303.7 | 0.64% | 47,597 | 324.0 | 0.68% | 47,389 | 305.7 | 0.65% | 142,457 | 933.4 | 0.66% |
| Connecticut Natural Gas | 35,709 | 201.7 | 0.56% | 36,295 | 192.3 | 0.53% | 36,688 | 183.1 | 0.50% | 108,693 | 577.1 | 0.53% |
| Southern Connecticut Gas | 32,464 | 212.6 | 0.66% | 32,021 | 203.6 | 0.62% | 33,402 | 175.86 | 0.53% | 98,887 | 592.1 | 0.60% |
| TOTAL | 115,645 | 718.0 | 0.62% | 116,913 | 719.9 | 0.62% | 117,479 | 664.7 | 0.57% | 350,037 | 2,102.6 | 0.60% |

## 1.6 FUNDING SOURCES

For the 2019 program year, the three primary funding sources for Connecticut's energy efficiency programs will be:

1) The three-mill systems benefit charge on customer electric bills;
2) The Conservation Adjustment Mechanism ("CAM") less gross receipts tax ("GRT") assessed on customer electric bills; and
3) Contributions from natural gas customers (on firm rates) through the natural gas CAM.

For the 2020 and 2021 program years, Public Act 18-50 has directed that the first two primary funding sources listed above will combine into one six-mill CAM for customers of the Electric Companies.[18] In addition to the new electric CAM, the Companies will continue to utilize the natural gas CAM (funding source no. 3 referenced above) for the 2020 and 2021 program years. Additional funding sources for the 2019-2021 Plan include the Regional Greenhouse Gas Initiative ("RGGI"), a Northeast carbon trade system and the Independent System Operator-New England's ("ISO-NE") Forward Capacity Market ("FCM"). Tables 1-6 and 1-7 summarize the statewide funding for the 2019-2021 Plan's electric and natural gas energy efficiency programs.

Table 1-6: Electric Program Funding Sources*

| | 2019 Eversource Electric Revenues | 2019 United Illuminating Revenues | 2019 Combined Total | 2020 Eversource Electric Revenues | 2020 United Illuminating Revenues | 2020 Combined Total | 2021 Eversource Electric Revenues | 2021 United Illuminating Revenues | 2021 Combined Total |
|---|---|---|---|---|---|---|---|---|---|
| Collections (Mill Rate) | $62.3 | $15.0 | $77.4 | | | | | | |
| ISO-NE | $29.7 | $8.1 | $37.8 | $27.2 | $6.2 | $33.4 | $27.5 | $5.8 | $33.3 |
| RGGI | $8.5 | $1.6 | $10.6 | $7.7 | $1.9 | $9.6 | $7.8 | $2.0 | $9.8 |
| RGGI Diversion | ($0.4) | ($0.1) | ($0.5) | | | | | | |
| CAM (net of gross receipts tax) | $57.9 | $14.1 | $72.0 | $113.9 | $28.0 | $141.9 | $111.8 | $27.7 | $139.6 |
| Transfer to State General Fund | ($21.4) | ($5.4) | ($26.8) | | | | | | |
| TOTAL (energy efficiency revenues) | $151.3 | $34.2 | $185.4 | $148.8 | $36.1 | $184.9 | $147.2 | $35.4 | $182.6 |

*In millions. Totals may vary due to rounding.

[18] Public Act 18-50, § 9(d)(1). "Electric distribution companies shall collect a conservation adjustment mechanism that ensures the plan is fully funded by collecting an amount that is not more than the sum of six mills per kilowatt hour of electricity sold to each end use customer of an electric distribution company during the three years of any Conservation and Load Management Plan."

Table 1-7: Natural Gas Program Funding Sources*

| Natural Gas Energy Efficiency Revenues | 2019 Conservation Adjustment Mechanism | 2020 Conservation Adjustment Mechanism | 2021 Conservation Adjustment Mechanism |
|---|---|---|---|
| Eversource Natural Gas Revenues | $20.6 | $23.5 | $23.8 |
| Connecticut Natural Gas Revenues | $16.3 | $15.9 | $16.1 |
| Southern Connecticut Gas Revenues | $16.0 | $14.5 | $14.6 |
| TOTAL (energy efficiency revenues) | $52.9 | $53.9 | $54.6 |

*In millions. Totals may vary due to rounding.

## 1.7 STATEWIDE MARKETING & ENERGIZE CONNECTICUT

Understanding how the Companies' customers use energy and who influences their energy decisions – *and then applying that knowledge to program design and delivery* – is the overarching strategy described earlier in this chapter and throughout the 2019-2021 Plan. Communications is integral to that strategy.

While customers are motivated by different conditions, knowing the group or segment framework for those conditions (e.g., demographics, facility or housing type and age, number of employees or occupants, business type, energy use profile, etc.) enables communications that focus on solving a problem or meeting a need. Virtually all customers want to save money, but most will not at the expense of jeopardizing a benefit they care about or aspire to (e.g., comfort, safety, reliability, air quality, productivity, aesthetics, market share, product features, etc.). Simply messaging about energy savings does not address those needs.

Working closely with business partners and organizations (e.g., contractors, designers, manufacturers, distributors, trade and advocacy groups) who share a relationship with utility customers, in combination with what the Companies have learned through segmentation, has led to changes in how market and communication strategies, tactics and messaging have evolved in tandem.

Marketing communications efforts for energy efficiency in Connecticut rely on a diverse mix of push and pull tactics that result in a multi-touch, multi-dimensional customer experience. Pull tactics, including broadcast, print and digital advertising and direct response will be used, along with a continuing emphasis on public relations and social media. Public relations provide tacit, third-party endorsement and is a subtle communications tool that helps to keep energy efficiency top of mind, even when advertising is not running or recommended. Social media has a similar effect and Energize Connecticut research completed in 2017 indicates this is a growing medium for energy information.

In the 2019-2021 Plan, additional energy-efficient products and equipment are being "pushed upstream" for both residential and C&I customers. While this is far more convenient for many customers and extends the benefits of the green marketplace to additional contractors and installers, significant customer and trade ally marketing will be needed to make upstream more "mainstream." Marketing communications will support the upstream programs with value messaging to end-use customers, installers and other contractors, and to the retailers and distributors.

Additional communication priorities and strategies for residential, commercial and industrial sectors are included in Chapters Two and Three. The 2019 Energize Connecticut Statewide Marketing Plan is found in Appendix A.

## 1.8 ENERGY EFFICIENCY DASHBOARDS

The Companies maintain a statewide Energy Efficiency Dashboard ("Dashboard") that provides customers with data (updated monthly) regarding program performance, including metrics for the Companies' Residential and C&I Energy Efficiency Portfolios, and for residential energy efficiency financing programs. The Dashboard provides regulators, legislators, advisors, and the public, a snapshot of how well the programs are performing by utilizing user-friendly graphs to portray program performance by company and sector, including expenditures and savings against budget goals. The Dashboard was developed in 2012 and has undergone several upgrades throughout the 2016-2018 Plan. Additional information and plans for the Dashboard during the 2019-2021 Plan can be found in Appendix B: Statewide Energy Efficiency Dashboard.

## 1.9 PERFORMANCE MANAGEMENT INCENTIVES

For managing Connecticut's energy efficiency programs and budgets, the Companies earn an annual performance target incentive that is tied to program specific-oriented metrics, including but not limited to: energy savings and net economic benefits. Performance management incentives are typically based on a percentage of energy efficiency program costs and this percentage varies dependent on if goals and/or targets are met or exceeded.

For the 2019-2021 Plan, the Companies are proposing a base target 4.5 percent performance management incentive ("PMI") at 100 percent of goal for 2019, 2020, and 2021. The Companies intend to request an increase in the PMI in future Plan Updates based on the difficulty of meeting metrics and savings in 2020 and 2021. Additionally, the Companies plan to introduce a MMBtu-based or a GHG emissions reduction-based metric for tracking purposes.

# CHAPTER TWO: RESIDENTIAL ENERGY EFFICIENCY PORTFOLIO

## 2.1 OVERVIEW

### INTRODUCTION

From lowering household energy consumption to increasing the comfortability of a home, Connecticut's energy efficiency programs have a proven track record of delivering cost-effective environmental, economic, and energy-saving benefits for the state's residents. For the past decade, the state's energy-saving solutions and initiatives have consistently ranked in the top 10 for energy efficiency by the ACEEE. The Companies' Residential Energy Efficiency Portfolio is nationally-recognized by the EPA and the DOE for its innovative solutions, comprehensive outreach, and substantial GHG emissions reductions.

Connecticut's Residential Energy Efficiency Portfolio yields significant economic benefits to the state. Over the last 20 years, a robust vendor network has emerged in the state employing and training a clean energy workforce to provide direct energy savings to residential and income-eligible customers through the Companies' Home Performance Services solutions. Rebates and incentives for residential energy-efficient appliances, electronics, HVAC equipment, insulation, lighting, and windows generate economic benefits for the retail establishments who manufacture, distribute, and sell the products. Consumer rebates provide the economic "carrot" for residential customers to take their initial foray into energy efficiency and invest in equipment and measures that generate significant cost and energy savings for their households.

The Residential Energy Efficiency Portfolio has changed significantly over the past 20 years and will continue its evolution in the 2019-2021 Plan. The Companies' historical residential efforts focused on energy conservation, compact fluorescent light bulbs, and standard weatherization measures. For the 2016-2018 Plan, the Residential Energy Efficiency Portfolio revolved around the rapid evolution of the light-emitting diode ("LED") in the lighting marketplace. In response to rapidly developing LED technologies, the Companies modified their Consumer Products, New Construction, Additions & Major Renovations, and their Home Performance Services solutions—Home Energy Solutions and Home Energy Solutions-Income Eligible.

For the 2019-2021 Plan, the Companies face uncertainty regarding enforcement and implementation of the Energy Independence and Security Act[19]; specifically, its effect on electric energy savings with impending light bulb standards slated to begin on January 1, 2020. Lighting is the key energy efficiency

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

measure that drives electric energy savings across the current Residential and C&I Energy Efficiency Portfolios. To prepare for potentially-reduced electric energy savings from LEDs during the 2019-2021 Plan, the Companies must establish strong energy efficiency solutions that support a sustainable Residential Energy Efficiency Portfolio non-reliant on lighting measures to generate energy savings during the 2020 and 2021 program years.

The 2019-2021 Plan's Residential Energy Efficiency Portfolio is at a crossroads where unique energy-efficient HVAC solutions, home performance services, smart connected devices, online retail platforms, active demand reduction strategies, and a strong focus on GHG emissions reductions are the pathways that need to be successfully blazed to lead the Companies' energy efficiency solutions forward. For the 2019-2021 Plan, the Companies have designed a Residential Energy Efficiency Portfolio capable of evolving rapidly to meet customer demands, emerging technologies, evaluation results, federal regulations, and state and national energy code modifications.

The rest of Chapter Two details the key themes and designs for Residential Energy Efficiency Solutions that will drive customer engagement, reduce GHG emissions, and optimize energy savings in the 2019-2021 Residential Energy Efficiency Portfolio.

## 2.2 KEY RESIDENTIAL THEMES OF THE 2019-2021 PLAN

The focus of the Companies' Residential Energy Efficiency Portfolio is *the customer*. For the 2019-2021 Plan, the Companies will offer effectively-packaged solutions and expanded customer outreach to drive residential energy savings, engage customers, and increase GHG emissions reductions. For residential customers, these packaged solutions must be simplistic in design (from the customer-facing viewpoint) to engage customers in choosing energy-efficient solutions that work for their current energy needs.

For example, if a homeowner needs an emergency replacement of their domestic water heater unit, then having immediate access to an instant rebate (an incentive offered upstream to distributors and manufacturers to discount a product) will incentivize the customer to purchase the high-efficiency unit versus a standard water heater. If the process is complicated and cumbersome (e.g., paper rebate incentive that takes time to process and to reimburse the customer for upfront costs), then the customer may choose the less-efficient unit. This results in a lost opportunity for both the customer and the Companies. For the 2019-2021 Plan, the Companies have strengthened their Residential Energy Efficiency Portfolio's design to proactively consider an individual customer's energy needs and to offer them a variety of tailored energy-saving solutions.

For the 2019-2021 Plan, the Companies remain focused on delivering a comprehensive Residential Energy Efficiency Portfolio to all residential market segments, including the new construction, market-rate, and income-eligible markets. Figure 2-1 details the six Residential Energy Efficiency Solutions that will be implemented through the 2019-2021 Residential Energy Efficiency Portfolio.

Figure 2-1: Residential Energy Efficiency Solutions for the 2019-2021 Plan

As noted previously, the Companies will closely monitor the retail lighting marketplace throughout 2019-2021 to determine if energy-saving goals and Residential Energy Efficiency Solutions' designs need to be adjusted. The uncertainty that surrounds the federal implementation and enforcement of Energy Independence & Security Act 2020 standards for light bulbs pervades the energy efficiency industry. The Companies plan to continue incentivizing and promoting general service and specialty ENERGY STAR-certified LED bulbs at least through the 2019 and 2020 program years.

For the 2019-2021 Plan, the Companies will continue to support energy-efficient LEDs as part of the Consumer Products, Home Performance Services, and the New Construction & Major Renovations solutions. However, federal regulations will most likely be enforced during the 2020 program year; significantly impacting energy savings and program designs across the entire Residential Energy Efficiency Portfolio during the 2020 and 2021 program years.

Through 2019, the Retail Products solution will include an ENERGY STAR Retail Products Platform—a pilot launched in mid-2018. This upstream rebate fulfillment initiative will provide incentives to retail stores to stock and promote ENERGY STAR-qualified appliances and electronics. Additionally, under the Consumer Products umbrella, the HVAC and Domestic Hot Water ("DHW") solution will continue to incentivize the purchase of energy-efficient HVAC and DHW equipment. Upstream incentives will continue to be the primary marketing channel for the HVAC and DHW solution for the 2019-2021 Plan; encouraging distributors and retailers to stock equipment and educate and train their technicians and sales personnel regarding these energy-efficient products' benefits (i.e., comfortability, GHG emissions reductions, and energy savings).

Historically, installed measures were the only focus of US energy efficiency program portfolios. In 2010, a paradigm shift occurred across the energy efficiency industry with the introduction of behavioral

science-based solutions. Behavioral-based strategies effectively change a customer's behaviors or habits in how they consume energy in a home. Since 2011, the Electric Companies have offered a Behavioral Strategies solution for electric customers, and in 2016, the Natural Gas Companies followed suit with the introduction of a natural gas solution. The Electric and Natural Gas Companies will continue to implement Behavioral Strategies solutions for the 2019-2021 Plan.

The New Construction, Additions & Major Renovations solution will continue to push the building marketplace toward high-efficiency and "renewable ready" construction in 2019-2021. Like the 2016-2018 Plan, new construction projects will continue to be measured and verified by the Home Energy Rating System ("HERS") Raters utilizing a HERS Index score. For the 2019-2021 Plan, the solution will provide support for Passive House design principles that rely on energy efficiency combined with passive solar features to dramatically reduce space heating demands. In support of the 2018 CES, the Companies will provide a new construction offering, an All-Electric package, that supports strategic electrification and gives builders and/or homeowners a pathway to build an all-electric residential home that mitigates the environmental impact of fossil fuels and eliminates fossil fuel combustion within the home. The Companies will also continue to hold the annual Zero Energy Home Challenge throughout the 2019-2021 Plan.

The cornerstone of the Companies' Residential Energy Efficiency Portfolio is its Home Performance Services solutions—Home Energy Solutions ("HES") and HES-Income Eligible. The HES solution delivers comprehensive home energy performance solutions for market-rate customers residing in either single-family or multifamily buildings. Throughout the 2019-2021 Plan, the management design of HES will mimic the 2016-2018 Plan with a structured approach that allows all Qualified Vendors to participate.

For the 2019-2021 Plan, the HES-Income-Eligible solution will continue to operate under a structured management approach and focus on reducing the energy burden of income-eligible customers. Both the HES and HES-Income Eligible solutions will serve as the primary drivers of the Companies' support in helping Connecticut meet the legislative goal of weatherizing 80 percent of Connecticut's existing homes by 2030.[20]

## HEAT PUMP TECHNOLOGIES

Through 2019, the Companies will provide support to the 2018 CES implementation through expanding the effort to promote the installation and use of heat pump technologies, strategically targeting customers whose homes are heated with electric resistance, oil, or propane (efforts in oil and propane-heated homes will be piloted in 2019). This targeted promotional and outreach effort will include training home energy performance contractors on the benefits of heat pumps and how to best identify homes that could benefit the most from the installation of heat pump technologies. The Companies see

[20] Public Act 11-80.

these trainings as imperative to the increased adoption of heat pump technologies by residential single-family and multifamily homeowners.

In 2019-2021, the HES solution will continue to support the installation of heat pump technologies to displace electric resistance heat. To further support the installation of heat pump technologies where reductions in heating energy from other heating fuels through higher efficiency will benefit customers, the Companies are investigating offering additional incentives similar to those offered to electric heat customers.

- Home Energy Solutions. The Companies will explore adding an additional heat pump rebate for single-family homes that participate in the solution. The rebate will apply to customers who: (1) heat with oil or propane, and (2) if they install a qualifying ductless or ducted system heat pump system. Controls for HVAC, where heat pumps are integrated with existing systems, will be explored for system optimization.
- Multifamily Initiative. The Companies will explore offering incentives for heat pumps installed in multifamily properties where the primary heating fuel is oil or propane. The Companies anticipate support for both ducted heat pumps and ductless heat pumps as part of this effort. Controls for HVAC, where heat pumps are integrated with existing systems, will be explored for system optimization.

During the first six months of 2019, the Companies will train HES contractors to promote and deliver heat pumps with increased focus on heating savings. Additionally, the Companies will train HVAC contractors to promote and install heat pumps to provide heating savings as well as cooling savings and will work with the industry on effective and cost-efficient controls for heating season operation of heat pumps. The heat pump heating pilot installations will begin in July 2019, after the legislatively-diverted funding is partially restored.

In 2020 and 2021, pending Energy Efficiency Board review and DEEP approval of the 2020 and 2021 Plan Updates, the programs may support energy optimization to help meet the state's energy, environmental, and climate goals by installing a larger volume of cost-effective heat pump technologies. To better align public policy goals with the 2019-2021 Plan implementation, the Companies will work with DEEP and the Energy Efficiency Board to analyze benefit-cost methodologies used to calculate savings for the Energy Efficiency Portfolio. The proposed revisions to the program strategies and the benefit-cost test will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP.

## 2.3 PROCESS FOR CONTINUED IMPROVEMENT

The Companies actively participate on several local, state, and national boards and organizations to study best practices, stay up-to-date on emerging technologies, and learn about new process improvements. This involvement is due to the Companies' commitment to continued improvement in delivering cost-effective and innovative energy efficiency programs to Connecticut's residential customers.

In addition to their involvement in the energy efficiency industry, the Companies have close trade ally partnerships with contractors, distributors, manufacturers, retailers, and stakeholders. These working partnerships help the Companies to effectively develop and implement cost-effective strategies and to adjust the design of energy-saving solutions to proactively respond to the ever-evolving residential energy efficiency marketplace.

A critical aspect to the Companies' commitment to continued improvement is the independent third-party evaluation process for Connecticut's energy efficiency programs. Managed by the Energy Efficiency Board, this independent evaluation process determines the efficacy of the Companies' Residential Energy Efficiency Portfolio. Once completed, evaluation findings and recommendations assist the Companies in determining the "lessons learned" and the process modifications needed to improve the delivery of Residential Energy Efficiency Solutions.

In addition to these third-party evaluations, the Companies periodically review other states' ongoing energy efficiency activities to determine if some of these efforts can be integrated into Connecticut's Residential Energy Efficiency Portfolio. These states include, but are not limited to: California, Massachusetts, New York, Oregon, Rhode Island, and Vermont.

## 2.4 CONNECTICUT ENERGY CODE (RESIDENTIAL)

The current Connecticut Energy Code is the 2015 International Energy Conservation Code ("2015 IECC"). In 2017, the Office of the State Building Inspector and the Codes and Standards Committee began preparing a draft Connecticut Supplement for the 2018 State Building Code. On January 2, 2018, the Connecticut Department of Administrative Services issued a Draft for Public Comment.[21] The Connecticut Supplement adopted the 2015 family of codes developed by the International Code Council

[21] Connecticut Department of Administrative Services. Final2018 Connecticut State Building Code, January 2, 2018. Available at: http://portal.ct.gov/-/media/DAS/Office-of-State-Building-Inspector/2018-CSBC---Code-Packet.pdf?la=en, 2015 IECC, pp. 99-106.

(this includes the 2015 IECC) and is also aligned with the State Fire Safety Code. The 2018 Connecticut State Building Code was adopted on October 1, 2018.[22]

While an increase in envelope requirements for residential buildings may result in lower program savings for the Residential Energy Efficiency Portfolio, the Companies anticipate decreases in energy use for new construction and retrofits to existing buildings. Glazing, insulation, and infiltration requirements have increased too, which may result in lower program savings for new construction. HVAC system requirements are based around federal guidelines, so these should remain largely unchanged with the implementation of the 2018 Connecticut State Building Code.

During the 2019-2021 Plan, it is anticipated that the 2018 IECC will be incorporated into the 2020 Connecticut State Building Code. The Companies will monitor and adjust program guidelines accordingly.

## 2.5 FINANCING

For the 2019-2021 Plan, the Companies will continue to utilize financing tools, where deemed effective, in the Residential Energy Efficiency Portfolio to leverage Energy Efficiency Fund resources to promote customer investments in high-efficiency home performance solutions. To drive comprehensive energy-saving solutions, the Companies will coordinate with the Connecticut Green Bank, Capital for Change, Inc. ("C4C"), and other third-party financing programs to secure low-cost capital sources to ensure the continuation of low-interest loans and other existing loan products.

### LEVERAGING PARTNERSHIPS

During the 2019-2021 Plan, the Companies will continue to work with DEEP, the Energy Efficiency Board's consultants, the Connecticut Green Bank, and C4C to identify financing program improvements, reduce customer costs, and increase program volume. For the 2019-2021 Plan, the Companies and the Connecticut Green Bank will work collaboratively together, where effective, to achieve important energy policy objectives through improved Connecticut Green Bank financing offerings. These will include, but are not limited to:

- Identify coordinated strategies for increasing adoption of add-on measures to achieve more comprehensive residential projects;
- Increase the amount of private sector capital, where effective; and
- Align financing programs to fill market gaps and current unmet needs in the multifamily sector.

[22] Connecticut Department of Administrative Services, Building and Fire Code Adoption Process, Available at: http://portal.ct.gov/DAS/Office-of-State-Building-Inspector/Building-and-Fire-Code-Adoption-Process/What-Next.

Overall coordination with the Connecticut Green Bank will be guided by the Energy Efficiency Board-adopted recommendations of the Joint Committee of the Energy Efficiency Board and Connecticut Green Bank Board, included in this document as Appendix C: Financing.

## 2019-2021 ENERGY EFFICIENCY FINANCING SOLUTIONS

For the 2019-2021 Plan, the Companies will continue to offer several financing options to residential customers pursuing comprehensive energy efficiency projects. These will include:

- HES Payment Plan (Micro) Loan. This program offers low-interest loans for making energy-efficient improvements to a single-family residential building (1-4 units). Qualifying energy-saving improvements include: high-efficiency insulation, windows, ENERGY STAR ductless heat pump systems, and DHW equipment.
- Energize CT Heating Loan Program. This option helps single-family building owners (1-4 units) finance the purchase of energy-efficient heating systems.
- Smart-E Loan. This Energize Connecticut financing program offers long-term, low-interest financing to help Connecticut homeowners make energy efficiency improvements, including: air sealing, duct sealing, insulation, HVAC equipment, ENERGY STAR-certified appliances, mold/asbestos remediation, and window replacements.
- Energy Conservation Loan. This loan program offers eligible customers (who do not qualify for other financing programs) emergency funding for non-working heating systems and leaking roofs.

Table 2-1: 2019-2021 Residential Energy Efficiency Single-Family Financing Solutions

| Financing Product | Loan Limits | Terms | Interest Rate | Funding Source |
|---|---|---|---|---|
| HES Payment Plan (Micro) Loan | $1,000 to $3,000 (on-bill repayment) | Max. 3 years | 0% interest up to 3 years | Energy Efficiency Fund (administered by C4C) |
| Energize CT Heating Loan | Up to $15,000 (on-bill repayment) | Max. 10 years | 0.99%<br><br>A minimum down payment of 10% of the cost of the replacement heating equipment | Systems Benefit Charge (administered by C4C) |
| Smart-E Loan | Up to $40,000 for single-family (1 to 4 units) | 5 year<br>7 year<br>10 year<br>12 year | 4.49%<br>4.99%<br>5.99%<br>6.99% | Local Credit Unions (administered by Connecticut Green Bank) |
| Energy Conservation Loan Program ("ECLP") | Up to $25,000 for single-family (1-4 units) | Max. 10 years | 0-6% | Loan: CT Department of Housing<br>Interest Rate Buy Down: Energy Efficiency Fund (administered by C4C) |

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## 2.6 CONSUMER PRODUCTS (RETAIL PRODUCTS)

### OVERVIEW AND TARGET MARKET

The Retail Products solution is designed to create awareness, acceptance, and purchases of ENERGY STAR-certified appliances, consumer electronics, and LED products in Connecticut's retail marketplace. For the 2019-2021 Plan, the Retail Products solution will offer incentives for energy-efficient appliances, electronics, and LEDs through three main marketing channels: (1) upstream incentives, (2) an upstream retail products platform, and (3) an e-commerce platform for the purchase of small electronics, lighting, and for rebate fulfilment and product comparison of larger consumer appliances.

The Retail Products solution's primary target markets are residential customers who purchase ENERGY STAR-certified appliances, consumer electronics, and LED lighting through retail channels, including: online market channels and retail stores (e.g., big-box, drug, grocery, hard-to-reach, independent, and whole sale club stores).

### 2019-2021 LIGHTING MARKET

#### Energy Independence & Security Act of 2007

The Energy Independence & Security Act of 2007 ("EISA") established national minimum efficiency standards for general service lamps that would be implemented in three phases. Phase 1 of EISA went into effect from 2012-2014 and required higher efficiency levels for incandescent bulbs. EISA's Phase 2 and Phase 3 are scheduled to begin in 2020 and 2025, respectively. EISA requires two rounds of US DOE-led rulemakings regarding general service lamps to determine Phase 2's and 3's efficiency levels and requirements.

The US DOE has not completed its rulemaking for Phase 2. As a result, EISA's backstop efficiency level standard of 45 lumens per watt for Phase 2 is scheduled to go into effect on January 1, 2020. Despite this backstop standard, there is uncertainty regarding the DOE's implementation and enforcement of EISA 2020 standards. This uncertainty pervades the lighting market vertically; affecting manufacturers, distributors, retail stores, and utilities/energy efficiency providers alike.

Throughout the 2019-2021 Plan, the Companies must be prepared for a changing and uncertain lighting marketplace. The Companies will utilize data from evaluations, retail sales, and Home Performance Services solutions to develop and investigate needed program adjustments to address changes resulting from federal standards, EISA enforcement, and lighting market trends.

The Companies have each used consistent planning assumptions for the 2019 Residential Energy Efficiency Portfolio's lighting offerings, however, due to uncertainties about the future of lighting savings and costs, the Companies have used some different planning assumptions covering the 2020 and 2021

program years. The planning values for the 2020 and 2021 program years will be analyzed and updated during the planning process to develop the 2020 Plan Update. This process will take place in late 2019 when more information is available.

### 2019-2021 Residential Lighting Strategy

*Qualifying LED Bulbs*

Incentive levels for LED bulbs and fixtures are based on the cost-effectiveness, lifetime kilowatt-hour ("kWh") energy savings, and lifetime hours (run time) for general service and specialty bulbs (e.g., candelabra). For the 2019-2021 Plan, the Companies will continue to support ENERGY STAR certification for LED bulbs and fixtures. The Companies will continuously monitor the lighting marketplace and adjust upstream incentives as warranted by market conditions to maintain the momentum of moving the marketplace away from less-efficient products and toward high-efficiency LEDs.

There are many "almost" ENERGY STAR-certified LED bulbs in today's lighting marketplace. Though some of these bulbs are highly-efficient, they have not undergone or completed the testing required to become ENERGY STAR-certified. Recognizing that there may be lost energy-saving opportunities, during 2019-2021, the Companies may investigate incentivizing non-ENERGY STAR-certified LEDs.

Additionally, the Companies will continue to research LED technologies that show increased efficacy and whose benefits go above and beyond ENERGY STAR-certified LED bulbs and fixtures.

*Retail Sales Strategies*

Throughout the 2019-2021 Plan, the Companies will continue to educate customers about the benefits of ENERGY STAR-certified LEDs over halogens and incandescent bulbs. For national retailers, the Companies will continue to incentivize general service and specialty LEDs as market conditions and regulations warrant.

In 2019-2021, the Companies will work with national and local retailers to provide strategic support and consumer education for LEDs, particularly in hard-to-reach markets and local retail outlets. For local retailers, the Companies will deploy effective strategies to increase their strategic support to them, including:

- Field Teams. The Companies will maintain their presence with field implementation vendors conducting in-store promotions and demonstrations at local retailers, especially in hard-to-reach retail stores.
- Higher Incentives. The Companies will offer incentives to manufacturers to encourage them to stock the shelves of local retail stores with ENERGY STAR-certified LEDS (versus less-efficient halogens and incandescent bulbs).

This outreach to local retailers will extend to the hard-to-reach ("HTR") customer market segment in 2019-2021. HTR markets are defined as customers not typically reached through conventional retail and marketing channels, and are typically described in demographic terms (i.e., income-eligible, ethnic, urban, or rural). The Companies' efforts regarding this market segment began in 2017 and 2018 with a focused effort of offering LED incentives, marketing, and educational focus to HTR retail outlets and local retailers. As large manufacturers prepare for EISA 2020, the Companies have observed large inventories of discounted halogen and incandescent bulbs making their way to the HTR market's retail shelves.

Because of these observations, for the 2019-2021 Plan, the Companies will continue to maintain a retail presence in HTR markets and provide incentives that allow ENERGY STAR-certified LEDs to compete (from a price point) with less-efficient lighting products. This retail presence will be established with point-of-purchase materials, co-op advertisements, increased incentives for HTR market retail outlets, and field support via in-store promotions to educate consumers and store associates regarding the benefits of ENERGY STAR-certified LEDs.

In 2019-2021, the Companies will continue to promote LED bulbs through non-traditional marketing channels, including lighting sales conducted at businesses and municipal/state offices.

## NEGOTIATED COOPERATIVE PROMOTIONS (Upstream Incentives)

For the 2019-2021 Plan, all the Companies' incentives for LED bulbs and fixtures through the Retail Products solution will continue to be offered as upstream rebates through Negotiated Cooperative Promotions ("NCPs") between the Companies, lighting manufacturers, and retailers to increase the sales of efficient LEDs. From a consumer-facing perspective, an NCP enables the customer to purchase an efficient product at a discounted price at the point-of-purchase (i.e., cash register or online checkout) rather than requiring a customer to complete a mail-in rebate form for future reimbursement.

NCPs simplify the purchasing process and increase the chances of a customer choosing a high-efficiency product (due to lowered costs) over a less-efficient lighting technology. The lowered incremental cost of the efficient product, an NCP-driven result, combined with the simplified purchasing process, increases retail sales and enhances the customer experience. Thus, the hassle of buying an efficient product is mitigated through the Companies' NCP marketing channel.

## ENERGY STAR RETAIL PRODUCTS PLATFORM (Upstream Incentives)

In the summer of 2018, Connecticut launched its ENERGY STAR Retail Products Platform ("ESRPP") pilot, a marketing and upstream rebate fulfillment initiative that offers minimal direct retailer incentives to participating big-box retail stores (e.g., Best Buy, Home Depot, and Lowe's) to increase the stocking and sale of energy-efficient appliances and electronics. This pilot will run into program year 2019.

The ESRPP is based on the concept of developing a national-level structure for the design of program delivery and engagement with retailers. The platform gives program sponsors access to a low-cost retail-based program through national coordination. The ESRPP's goal is to streamline energy efficiency programs with retailers, making them less complex and more cost-effective. Increasing the availability of ENERGY STAR products will generate energy savings as customers purchase and install these more efficient models in their homes. Through participating retailer agreements, the Companies will gain access to full category sales data on program products, allowing them to truly judge market penetration of highly-efficient products.

The 2019-2021 ESRPP will include incentives for, but will not be limited to: dryers, washers, refrigerators, freezers, air purifiers, room air conditioners, dehumidifiers, and sound bars. For the 2019-2021 Plan, the Companies will continue to operate the ESRPP based on lessons learned and product sales data from the 2018-2019 pilot implementation. All appliances and electronics marketed through the ESRPP will have to meet the requirements for an ENERGY STAR Tier 2[23] product.

## E-COMMERCE PLATFORM

In the summer of 2018, the Companies initiated an E-Commerce Platform, replacing the Companies' prior online retail platform—The Efficient Product Finder. For the 2019-2021 Plan, the Companies will continue to implement the E-Commerce Platform through the following two marketing channels:

- E-Commerce Website. The new E-Commerce Platform replaces the Companies' online SmartLiving™ Catalog and allows customers to purchase advanced power strips and high-efficiency LEDs and lighting fixtures through its e-commerce website. Qualifying products on the E-Commerce platform will have instant discounts.
- Online Rebate Marketplace. The online marketplace option allows customers to compare products and prices of high-efficiency appliances. It offers instant rebate coupons to customers purchasing ENERGY STAR-certified appliances and electronics, such as freezers, room air conditioners, and sound bars in-store or on their smartphones. Customers also have the option of submitting for a rebate post-purchase through the online marketplace. This hybrid marketplace approach ensures that whether a customer shops online, or at a participating retail store, they will have instant access to energy-efficient incentives.

The E-Commerce Platform validates the customer (i.e., that they live in Connecticut) and qualifies their purchase or rebate for energy-efficient consumer products. Like the ESRPP, all appliances and

[23] ENERGY STAR utilizes the Tier 2 (also referred to as Advanced) criteria when there is not a Most Efficient designation for a product and/or where there is a desire for a higher specification than the basic ENERGY STAR criteria.

electronics marketed through the E-Commerce Platform will have to meet the requirements for an ENERGY STAR "Most Efficient" or Tier 2[24] product.

## CONNECTED SYSTEMS

Throughout 2019-2021, the Companies will monitor the lighting marketplace for emerging technologies. The Companies will continue to support connected lighting systems ("CLS") technologies in residential applications in the 2019-2021 Plan. CLS technologies are lighting equipment connected to the internet (via Wi-Fi) capable of being managed from off-site through apps downloaded to electronic devices (e.g., smartphones, tablets, and computers). Some CLS technologies simply allow customers to turn on and off lights while away from the home, while others offer more advanced features, such as tracking energy use, dimming the lights, changing the lighting color, and activating lights according to a specific schedule.

Additionally, the Companies will continue to monitor and support (through incentives) connected devices for HVAC controls and overall home energy management, including connected Wi-Fi thermostats and home controlling device technologies.

## EARLY RETIREMENT

For the 2019-2021 Plan, the Companies will investigate offering pilot promotions (i.e., around Earth Day) to customers who want to retire refrigerators, freezers, and window air conditioning units. Customers would receive an incentive to purchase an energy-efficient replacement. If implemented, the Companies will offer these promotions as warranted by market demand and may modify incentives or promotional design based on customer feedback and incentive redemption rates.

[24] ENERGY STAR utilizes the Tier 2 (also referred to as Advanced) criteria when there is not a Most Efficient designation for a product and/or where there is a desire for a higher specification than the basic ENERGY STAR criteria.

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## 2.7 CONSUMER PRODUCTS (HVAC and DOMESTIC HOT WATER EQUIPMENT)

### OVERVIEW

The US Energy Information Administration reports that the major energy uses in Northeast homes in 2015 were for space heating (53.4 percent), water heating (16.9 percent), and air conditioning (3.4 percent).[25] This means that residential heating, cooling, and water heating equipment make up approximately 73 percent of an average household's annual energy consumption.

The HVAC and Domestic Hot Water ("DHW") solution is designed to promote the awareness, acceptance, and purchases of high-efficiency HVAC and DHW equipment in Connecticut's retail marketplace and through the Companies' Home Performance Services solutions (HES and HES-Income Eligible). For the 2019-2021 Plan, the HVAC and DHW solution will offer incentives for high-efficiency HVAC and DHW equipment through two marketing channels: (1) upstream incentives and (2) traditional mail-in rebates.

### TARGET MARKETS

There are two target markets for the HVAC and DHW solution:

- All residential customers of the Companies; and
- Contractors, distributors, installers, and retailers who either sell or install HVAC and DHW equipment in Connecticut.

### ENERGY EFFICIENCY SPECIFICATIONS FOR CENTRAL A/C AND HEAT PUMP SYSTEMS

To receive an incentive, upstream or traditional, the Companies require that central air conditioning ("A/C") systems and heat pumps meet nationally-recognized energy efficiency specifications. These specifications include:

- Energy Efficiency Ratio ("EER"). An EER rating measures how efficient a central A/C or heat pump system will operate when the outdoor temperature is at a specific level (95°F). The higher the EER, the more efficient the system.
- Heating Seasonal Performance Factor ("HSPF"). The HSPF measures the efficiency of a heat pump. The HSPF shows the total heating output of the heat pump during a normal heating season, in British Thermal Units ("BTUs"), as compared to the total electricity consumed (in kWh) during the same period. The higher the HSPF, the more efficient the heat pump.

[25] US Energy Information Administration. *Use of Energy in Homes (2015).* Available at: https://www.eia.gov/consumption/residential/.

- Seasonal Energy Efficiency Ratio ("SEER"). A SEER rating measures the efficiency of a central A/C or heat pump system over an entire cooling season. The SEER rating indicates the cooling output of a central A/C or heat pump system in BTUs during the normal cooling season as compared to the total electricity consumed (in kWh) during the same period. The higher the SEER rating, the more efficient the central A/C or heat pump system.

The Companies also recognize regional energy efficiency specifications for air-source heat pumps. For over five years, the Northeast Energy Efficiency Partnerships ("NEEP") has facilitated a Northeast/Mid-Atlantic Air-Source Heat Pump Working Group ("Working Group") to develop Cold Climate Air-Source Heat Pump specifications ("ccASHP Specs") to better characterize heat pump performance in cold climates (IECC climate zone 4 or higher). During the 2016-2018 Plan, the Working Group established new ccASHP Specs that went into effect on January 1, 2017.[26]

For the 2019-2021 Plan, the Companies will continue to monitor and adjust criteria for air-source heat pumps and the integration of HVAC controls to optimize cost-benefit and energy savings and to ensure there are a variety of air-source heat pumps for customers to choose from that can provide optimal energy reductions in heating energy through higher efficiency.

## TYPES OF INCENTIVES

### Upstream Incentives

For the 2019-2021 Plan, the Companies will continue to promote upstream incentives for HVAC and DHW equipment as its primary marketing channel. The utilization of upstream incentives encourages distributors and retailers to stock energy-efficient HVAC and DHW equipment. The Companies further encourage contractors, distributors, installers, and retailers to educate and train their sales staff and technicians regarding high-efficiency HVAC equipment's benefits, such as energy savings, longevity, and comfortability. Over the last few years, this combination of upstream incentives and distributor/contractor education has proven effective; resulting in increased energy-efficient HVAC and DHW equipment stocking, sales, and installations.

As part of the upstream incentive process, the Companies typically require contractors, distributors, and installers to release customer demographic information (i.e., customer address and installed equipment model number) when they apply for an upstream incentive for an eligible HVAC and/or natural gas water heater purchase. This gives the Companies valuable insight into customer demand and installation

[26] National Energy Efficiency Partnerships. Cold Climate Air-Source heat Pump Specification (Version 2.0), Rel. Jan. 1, 2017. Available at: file:///C:/Users/owner/Downloads/Cold%20Climate%20Air-source%20Heat%20Pump%20Specification-Version%202.0Jan2017.pdf.

rates of various HVAC and DHW equipment. If a retail establishment cannot provide the required customer demographic data, the Companies will provide a smaller upstream incentive.

### Traditional Incentives (Rebates)

The Companies continue to offer traditional incentives for some HVAC systems. These systems include high-efficiency central air conditioning and air-source heat pumps, and ground-source (geothermal) heat pumps. As the opportunity arises and verification of installation and proper equipment sizing is streamlined, the Companies will consider moving these incentives upstream for the 2019-2021 Plan.

## HEAT PUMP TECHNOLOGIES

Heat pump technologies are considered "clean" cooling and heating options as they utilize electricity instead of burning oil, propane, and natural gas. Increased deployment of this energy-efficient technology in 2019-2021, to achieve higher electric savings and also through a new 100-unit pilot on heating fuel savings from heat pumps in 2019, will align the Companies' energy-saving programs with the goals of the 2018 CES and help move the state toward the Global Warming Solutions Act's GHG emissions reduction goals.

For the 2019-2021 Plan, the Companies will provide support for increased deployment of heat pump technologies across Connecticut, first through an increase in existing efforts to achieve electric heating and cooling savings, and second through the new 100-unit heat pumps for heating pilot in 2019 and potentially through expanded heat pumps for heating efforts in 2020-2021, subject to prior Energy Efficiency Board review and approval and DEEP approval through the 2020 and 2021 Plan Updates. Support will be provided via multiple engagement channels, including customer education, targeted upstream incentives, marketing, and coordinated financing solutions with the Connecticut Green Bank. Qualifying heat pump technologies will include: central air-source, ground source, and water-source heat pumps, ductless mini split heat pumps, and heat pump water heaters.

### Heat Pump Water Heaters

Heat pump water heaters ("HPWHs") are considerably more efficient than traditional electric water heaters. HPWHs concentrate the warmth of ambient air around them to heat water for domestic hot water consumption. ENERGY STAR-certified HPWHs must have an Energy Factor of 2.0 or higher. The Energy Factor ("EF") of a water heater indicates the unit's overall energy efficiency based on the amount of hot water produced per unit of fuel that is consumed over a typical day. A higher EF means the water heater is more efficient. As of June 12, 2017, manufacturers must adhere to the DOE's new Uniform Energy Factor ("UEF") standard and test procedure for water heaters. The new UEF standard addresses inconsistencies in water heater testing and allows for a more accurate comparison of products. New products coming onto the market now have an UEF rating instead of an EF rating.

For the 2019-2021 Plan, the Companies will continue to offer an upstream incentive (rebate) for ENERGY STAR-certified heat pump water heaters with an EF of 3.0 or higher and will closely monitor the marketplace to determine the appropriate qualifying UEF standard.

### Mini-Split Heat Pumps (Ductless Heat Pumps)

Ductless heat pumps, also known as mini-split heat pumps, operate similarly to central air-source heat pumps and have two main components: (1) an outdoor compressor/condenser, and (2) an indoor air-handling unit. Ductless heat pumps can condition homes with 20 to 25 percent greater efficiency than typical HVAC systems.

For the 2019-2021 Plan, the Companies will continue to offer upstream customer incentives (rebates) for the installation of ENERGY STAR-qualified ductless heat pumps.

Table 2-2: Ductless Heat Pump Requirements*

| Type of Ductless Heat Pump | Energy Efficiency Requirement |
|---|---|
| AHRI-Rated Ductless Heating and Cooling System of Matched Assembly (Single Indoor Unit) | 20 SEER/10 HSPF |
| AHRI-Rated Ductless Heating and Cooling System of Matched Assembly (Multi-Indoor Unit) | 18 SEER/9 HSPF |
| * These are 2018 Energize Connecticut requirements which are subject to change. The Companies reserve the right to make periodic updates, as needed, throughout the 2019-2021 Plan. | |

### Ground-Source Heat Pumps (Geothermal)

Geothermal heat pumps are efficient because they take advantage of the earth's constant temperature to provide highly-efficient heating and cooling for a home. They utilize only a small amount of electricity to operate the unit's heat pump, ground loop pump, and distribution fan or pump. The Companies provide traditional incentives (rebates) for the proper installation of ENERGY STAR-certified ground-source heat pumps that are closed loop or direct geo-exchange ("DGx") systems. The systems must meet the following criteria to be eligible for the traditional incentive:

- Equipment must be closed loop or DGx type;
- Equipment must be ENERGY STAR-certified (existing homes must meet ENERGY STAR Tier 3 Requirements[27]);
- AHRI/ISO/ASHRAE Standard 13256-1 closed loop systems;

[27] ENERGY STAR Program for Geothermal Heat Pumps. *Partner Commitments*. Available at: https://www.energystar.gov/sites/default/files/specs/private/Geothermal_Heat_Pumps_Program_Requirements%20v3.1.pdf.

- AHRI/ISO/ASHRAE Standard 870 for DGx systems;
- Appropriate field testing must be conducted to verify performance;
- Generally existing homes must participate in the HES solution (not required). A geothermal eligibility application must be completed by a HES Qualified Vendor/customer and submitted to the appropriate Electric Company; and
- New construction homes must participate in the New Construction, Additions & Major Renovations solution to be eligible for the ground source heat pump incentive.

Throughout the 2019-2021 Plan, the Companies will monitor the marketplace for new efficiency requirements. The Companies will also work with the International Ground Source Heat Pump Association ("IGSHPA") to support trainings for the geothermal heat pump industry.

## HIGH-EFFICIENCY HVAC SYSTEMS

For the 2019-2021 Plan, the Companies will continue to provide traditional incentives (rebates) for Split HVAC systems where both the condenser unit and evaporator coils are installed simultaneously by a contractor. A Split HVAC system has multiple sections, including: (1) an indoor coil section typically located within the ductwork, and (2) an outdoor coil section that contains the compressor or condenser.

Table 2-3: High-Efficiency HVAC System Requirements*

| Type of High-Efficiency HVAC System | Energy Efficiency Requirement |
|---|---|
| AHRI-Rated Central A/C Split System | 16 SEER/12.5 EER |
| AHRI-Rated Air-Source Heat Pump Split System | 16 SEER/12.5 EER/10 HSPF |
| * These are 2018 Energize Connecticut requirements which are subject to change. The Companies reserve the right to make periodic updates, as needed, throughout the 2019-2021 Plan. | |

## HIGH-EFFICIENCY DOMESTIC WATER HEATERS

### High-Efficiency Natural Gas Domestic Water Heaters

For the 2019-2021 Plan, the Companies will continue to offer an upstream incentive (rebate) for two types of ENERGY STAR-certified natural gas water heaters. The Companies may periodically adjust the incentive levels or qualifying criteria based on factors such as energy efficiency standard changes and Residential Energy Efficiency Portfolio budgets. The Companies offer an upstream incentive for the following:

- ENERGY STAR-Certified Natural Gas Tankless Water Heater with Electric Ignition. These units must have an EF of 0.94 or greater. The Companies will monitor the market closely to establish an appropriate UEF rating criteria for new products; and
- ENERGY STAR-Certified Natural Gas Condensing Storage Water Heater. These heaters must have a Thermal Efficiency of 0.95 or greater. The Companies will monitor the market closely to establish an appropriate UEF rating criteria for new products.

### High-Efficiency Furnace, Natural Gas Boiler, and Boiler Water Circulator Pumps

A furnace or boiler's energy efficiency is measured by its annual fuel utilization efficiency ("AFUE"), which measures the percentage of the heating fuel (i.e., natural gas, oil, or propane) converted to useful heat for a home. During 2019-2021, the Companies will continue to offer upstream incentives (rebates) for the purchase of energy-efficient boilers and furnaces. The Companies require that qualifying boilers and furnaces meet certain standards set by AHRI, an industry-respected certification program. For the 2019-2021 Plan, the Companies have established the following AFUE and AHRI requirements for furnaces, natural gas boilers, and boiler water circulator pumps.

Table 2-4: High-Efficiency Furnace, Natural Gas Boiler & Boiler Water Circulator Pumps

| Type of High-Efficiency HVAC System | Energy Efficiency Requirement |
|---|---|
| Natural Gas Warm Air Furnace | ENERGY STAR-certified 95% AFUE or greater, and AHRI-rated with Electronically Commutated Motors ("ECMs") |
| Oil Warm Air Furnace | ENERGY STAR-certified 85% AFUE or greater, and AHRI-rated with ECMs |
| Propane Warm Air Furnace | ENERGY STAR-certified 95% AFUE or greater, and AHRI-rated with ECMs |
| Natural Gas Boiler | ENERGY STAR-certified 94% AFUE or greater with temperature reset or purge control |
| Boiler Water Circulator Pump | The Companies maintain a list of approved model numbers |
| * These are 2018 Energize Connecticut requirements which are subject to change. The Companies reserve the right to make periodic updates, as needed, throughout the 2019-2021 Plan. | |

## CONNECTED DEVICES

For the 2019-2021 Plan, the Companies will continue to monitor development of the home energy management market. The Companies may provide incentives for connected devices through the HES and HES-Income Eligible solutions for home energy management systems and offer a HES add-on rebate for connected Wi-Fi thermostats.

- Home Energy Management Systems. These emerging systems combine smart device interfaces, controls, and sensors to allow homeowners to control their energy consumption of home appliances and systems.

- Connected Wi-Fi Thermostats. These HVAC control-connected devices allow homeowners to monitor and manage their home energy consumption via electronic devices (e.g., smartphones, tablets, or computers). For the 2019-2021 Plan, the Companies will support connected Wi-Fi Thermostats that are ENERGY STAR-certified, and capable of providing real-time response to demand reduction events or have data sharing capabilities.

Additionally, the Companies are investigating the possibility of offering an HVAC and connected Wi-Fi thermostat upstream bundle for the 2091-2021 Plan. If offered, this upstream bundle would offer an additional incentive for any qualifying connected Wi-Fi thermostat that is simultaneously installed with a new central air conditioner, boiler or furnace, or air-source heat pump.

## EARLY RETIREMENT REBATES

For the 2019-2021 Plan, the Companies may introduce an early retirement incentive for storage water heaters (natural gas and heat pump water heaters) and other HVAC equipment. This will help support the 2018 CES and its pursuit of strategic building electrification. Additionally, the Companies will explore offering early retirement incentives for air-to-air heat pumps (for central A/C) and natural gas high-efficiency boilers and furnaces.

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## 2.8 NEW CONSTRUCTION, ADDITIONS & MAJOR RENOVATIONS

### OVERVIEW

The primary objectives of the New Construction, Additions & Major Renovations solution are: (1) to reduce energy consumption and peak demand in residential new construction and major renovation projects, and (2) create a clear path toward more efficient homes. Additional secondary objectives, where cost effective, may include: integrating renewable energy and electric vehicle readiness, increasing awareness and technical education regarding energy-efficient practices, and preparing builders and market actors for the adoption of future building codes.

The New Construction, Additions & Major Renovations solution provides incentives to builders and homeowners who integrate advanced energy-efficient building construction and technologies into a new construction or gut rehab project. The combination of educational outreach, technical trainings, and the solution's incentive structure is a calculated effort by the Companies to transition the new construction and major renovation market toward more energy efficiency development practices.

### TARGET MARKET

The target market for the New Construction, Additions & Major Renovations solution is any residential customer or multifamily property owner building a new home, conducting a gut rehab project, or adding a significant addition where the residential building will receive electric and/or natural gas services from the Electric and/or Natural Gas Companies. Customers who will heat their homes or water with oil, propane, or another fuel type are eligible to participate; however, their home must receive electrical service from either Eversource or United Illuminating.

For single-family and low-rise multifamily projects, the building must have either an established residential electric or natural gas account with the Companies. Additionally, the property must be classified as a single-family or multifamily property (four stories or less) and must be built within the state of Connecticut. Buildings more than four stories may classify under the Multifamily Whole Building Performance initiative.

Economic conditions affect the New Construction, Additions & Major Renovations solution's energy savings and performance goals. The Connecticut Department of Economic and Community Development reports that the number of permits issued by Connecticut towns and cities for single-family homes, apartments, and condominiums fell 17.4 percent with 4,547 permits issued as compared to 5,504 permits issued in 2016.[28] The Companies will continue to work to incrementally capture more

[28] Connecticut Department of Economic and Community Development. *Connecticut Housing Information.* Available at: http://www.ct.gov/ecd/cwp/view.asp?a=1106&q=250640.

of the new construction market during the 2019-2021 Plan to push this market segment toward greater efficiency, renewable energy and electric vehicle readiness, and awareness of efficient building technologies and practices.

## PROGRAM STRUCTURE

### Home Energy Rating System Index

For the 2019-2021 Plan, the Companies will continue to promote a performance-based incentive structure based on the Home Energy Rating System ("HERS") Index. A HERS rating assigns a numerical rating to a newly-constructed home's energy efficiency performance. The lower a HERS rating, the more efficient a home. The HERS Index will serve as the foundation of the New Construction, Additions & Major Renovations solution for all single-family and low-rise multifamily building projects.

For the 2019-2021 Plan, the Companies will continue to utilize the HERS Index to determine incentives and focus efforts on viewing a building's energy use holistically. Simply put, rather than focusing on installing an energy-efficient HVAC system, the Companies want builders to think about the entire building, its multitude of systems (e.g., mechanical, cooling and heating, etc.), and how pieced together these systems can produce a highly-efficient new construction home.

To drive efficiency in the new construction market, the Companies will continue to require a HERS Rating for any single-family and low-rise multifamily new construction project applying for energy-efficient incentives through the New Construction, Additions & Major Renovations solution. For the 2019-2021 Plan, the Companies will offer a four-tiered incentive structure based on the HERS Index to encourage builders to construct whole home energy performance projects and leverage energy-saving and renewable measures effectively.

- Tier 1 Incentive: 51 to 60 HERS;
- Tier 2 Incentive: 41 to 50 HERS;
- Tier 3 Incentive: 40 to 1 HERS; and
- Tier 4 Incentive: Anything 0 HERS Index and lower.

The 2019-2021 HERS-based incentive structure is designed to push the construction market toward greater energy efficiency and keep the Companies a step ahead of the current and proposed new State Building Codes. The proposed 2015 IECC allows for a code compliance option where a home that receives a HERS rating of 61 or under is compliant with the state's energy code.[29]

[29] Note: This is a proposed statewide amendment to the 2015 IECC.

A benefit of the HERS-based incentive structure is that it allows a builder and/or homeowner to work directly with a RESNET-accredited HERS Rater to ensure that sustainable and high-performance building methods, equipment, and materials are used throughout the construction process. Additionally, a HERS Rater can provide valuable duct and building envelope testing which can provide confirmation for building code compliance.

### Photovoltaic-Readiness Checklist

The Companies support new construction, addition, and gut rehab projects that include renewable ready measures. For the 2019-2021 Plan, the Companies will continue to require that all homes qualifying for Tier 2, Tier 3, and Tier 4 incentives meet the requirements of the Photovoltaic ("PV")-Ready Checklist for single-family homes. If a home does not meet the PV-Ready Checklist, then the builder or homeowner will only be eligible for Tier 1 incentives. The Companies push to ensure that new homes meet the PV-Ready requirements to ensure that future homeowners can easily install PV systems without needing to alter their home's building envelope or electrical service.

### Electric Vehicle-Readiness Checklist

For the 2019-2021 Plan, the Companies will add an Electric Vehicle ("EV") Readiness enhancement to the New Construction, Additions & Major Renovations solution. This enhancement is being designed for implementation in a similar manner as that used for PV-Readiness and will include a criteria checklist.

The Companies will model their EV-Readiness Checklist after Rhode Island's stretch code and may include requirements for upgrade service panels and a conduit for electricity to a garage/driveway from the home's service breaker. This aligns the Companies' efforts with the 2018 CES in creating a residential building infrastructure that can support charging electrical vehicles and reducing GHG emissions. For the 2019-2021 Plan, the EV-Readiness Checklist will be required for all Tier 3 or better HERS incentives for single-family homes.

### All-Electric Package

For the 2019-2021 Plan, the Companies will provide a path for builders and/or potential homeowners to build an all-electric residential home that mitigates the use of fossil fuels altogether. This new strategy allows the Companies to provide support for the 2018 CES by decarbonizing the electrical grid through a new construction option that supports strategic electrification. The Companies will target geographic areas throughout the state, including areas where access to natural gas is not viable.

The all-electric home package will involve the design and construction of an energy-efficient home, and the utilization of heat pump technologies to mitigate the environmental impact of fossil fuels and eliminate fuel combustion within the home. The Companies will provide incentives for the following measures: building envelope measures, thermal energy-efficiency measures, air-source or geothermal

heat pumps, increased use of biofuels, biomass heating systems, EV Readiness, and on-site renewable energy production and storage, including PV Readiness.

The Companies have established several pre-requisites for the fully-electric package and are considering an alignment with Passive House design principles. There are several qualifying criteria, including, but not necessarily limited to: DOE Zero Energy Ready Homes certification, Connecticut's PV Readiness Criteria, installation of high-efficiency heat pumps that meet the Companies' efficiency specifications, and the installation of heat pump water heaters with an EF of 3.0 or greater and the Companies will monitor the market closely to establish an appropriate UEF rating criteria.

## BUILDING CERTIFICATIONS AND ADDITIONAL INCENTIVES

In addition to the HERS Index, the Companies will continue to provide bonus incentives to builders and homeowners who build to, qualify for, and receive additional nationally-recognized energy efficiency certifications and designations, including:

- ENERGY STAR for Homes (Version 3.1). New construction homes can earn an ENERGY STAR certification just like other consumer products. The ENERGY STAR for Homes designation (now Version 3.1) certifies that a home has been built to the highest of energy efficiency standards. The energy-efficient measures considered for ENERGY STAR for Homes certification include: high-efficiency HVAC and DHW equipment, high-performance windows and doors, quality-installed high-performance insulation, comprehensive air sealing, and energy-efficient lighting.

- DOE Zero Energy Ready Home. This program promotes a rigorous and comprehensive home performance principled approach to residential new construction projects and is based on the building science requirements of ENERGY STAR for Homes Version 3.1. To be certified, a builder must follow one of two pathways for qualification: prescriptive or performance. The Performance pathway requires energy modeling (HERS rating); however, the energy-efficient and renewable energy measures can be optimized for the builder or home/building site.

  Only Performance pathway-qualified projects are eligible for incentives from the Companies. Qualifying measures typically include: efficient DHW equipment/distribution systems, thermal enclosures, HVAC quality installations, water management, ENERGY STAR-certified appliances, lighting, and windows, certification by the EPA's Indoor airPLUS program, and PV-Ready checklist compliance.

- Leadership in Energy and Environmental Design ("LEED"). A home that is LEED certified is built with high-efficiency design and sustainable building practices. A LEED-certified home is built to save energy and water, minimize exposure to airborne pollutants and toxins, and to ensure high indoor air quality. Builders and homeowners must work with a LEED for Homes Green Rater to achieve LEED certification.

- Passive House Design. Homes built to Passive House standards rely on passive solar features combined with energy efficiency to dramatically reduce space heating demands. A Passive House is a well-insulated and near airtight building primarily heated by passive solar and internal heat gains from the occupants and building uses (e.g., bathing, cooking, and electrical equipment). To maintain its efficiency in warmer weather, a Passive House uses window orientation, shading, and passive ventilation to limit space cooling energy demand.

  For the 2019-2021, the Companies will investigate the potential of developing enhanced incentives for builders who build multifamily buildings to Passive House design principles. Additionally, the Companies will provide support by strengthening their existing strategic trade ally partnership with the CT Passive House Alliance, and to actively support the building community's technical Passive House trainings.

- Connected Home Incentive. Connected home technologies such as connected thermostats (e.g., Wi-Fi and Z-Wave), home energy management systems ("HEMS"), integrated lighting controls, and wireless-enabled HVAC, DHW, appliances, and other types of equipment, are becoming more readily available in the marketplace. Consumer demand, coupled with a desire for builders to differentiate their homes, makes residential new construction an ideal fit for these types of technologies. As an added benefit, these technologies can be easily designed into these homes prior to drywall or other obstructions. For the 2019-2021 Plan, the Companies will seek to develop an offering for these technologies within the New Construction, Additions and Major Renovations solution. Conventional energy savings calculations tools utilized (e.g., REM/Rate), do not currently consider the energy savings attributed from these technologies, thus providing the Companies with the opportunity to provide an additional and complimentary incentive to the traditional HERS incentive.

## MULTIFAMILY WHOLE BUILDING PERFORMANCE INITIATIVE

The Whole Building Performance ("WBP") initiative was designed by the Companies to address new construction multifamily projects of four stories or higher and incentivizes building owners who choose to invest in certified sustainable buildings (i.e., LEED or ENERGY STAR Multifamily High Rise) and non-certified high-performance buildings that consume substantially less energy than comparable code-compliant buildings. These buildings are comprised of Energy Efficiency Measures ("EEMs"), such as high-performance materials and energy-efficient controls and systems, which can dramatically reduce operations and maintenance costs over the building's lifecycle.

To cover the upfront costs of installing these high-performance controls and systems to achieve long-term savings, the Companies offer six types of incentives to encourage participation in the WBP initiative:

- Building Energy Simulation Subsidies. A Simulator (i.e., design firm) can receive engineering subsidies for submitting Phase 1 pre-construction and Phase 2 post-construction building energy simulation reports to the Companies.
- WBP Installation Incentives. A property owner can receive an incentive for investing in a high-performance building that complies with the WBP Energy Modeling guidelines.
- Design Incentives for As-Built Source Energy Reductions. The Design Firm can receive an incentive if the as-built performance of the building design, detailed in the Phase 2 simulation report, shows a reduction of 25 percent or greater from baseline in source energy savings.
- Bonus for LEED or ENERGY STAR Multifamily High Rise ("MFHR")-Certified Buildings. A bonus incentive is given to the Owner for obtaining Silver, Gold, or Platinum LEED , Passive House, Green Globes, or ENERGY STAR MFHR certification of the building
- Path to Net Zero Ready Incentive. An incentive is given for WBP projects designed to achieve Net Zero Ready certification. To be eligible for this incentive, projects must achieve savings of 35 percent or greater than ASHRAE 90.1-2013 prior to renewable technologies.
- Commissioning Incentive. An incentive will be awarded for all projects which meet the requirements of the LEED Enhanced Commissioning Credit (available to projects pursuing or not pursuing LEED Certification).

## ADDITIONAL SOLUTION OFFERINGS

### Additions, Renovations & Retrofit Plan

In 2017, the Companies developed an Additions, Renovations & Retrofit Plan to support the installation of energy-efficient equipment and high-efficiency construction methods in single-family and multifamily homes undergoing minor or major upgrades. The Additions, Renovations and Retrofit Plan gives homeowners the choice of making minor or major home upgrades through two tracts: (1) programmatically through the New Construction, Additions, and Renovation solution, or (2) prescriptively through individual equipment or system rebates (e.g., insulation, HVAC, doors, etc.). To qualify for incentives, both insulation and thermal bypass inspections must be performed prior to the installation of insulation. For the 2019-2021 Plan, the Companies will continue to offer this initiative to homeowners.

### Connecticut Zero Energy Challenge

Since 2010, the Companies have held an annual Connecticut Zero Energy Challenge ("ZEC"), a design-and-build competition, designed to generate awareness for and showcase high-performance zero net energy and "near zero energy" homes built in the state. Participating homes demonstrate that zero net

energy home construction is achievable and highlight leading-edge energy-efficient building designs, technologies, and building practices. All participating homes receive a HERS rating, which is an asset score based on the energy performance of the home, compared to code. Each participating home is also judged based on the project's cost-effectiveness, building envelope performance, and Residential Energy Services Network ("RESNET") rating standards, which are utilized to determine each home's HERS index, both with and without renewable energy.

For the 2019-2021 Plan, the Companies will continue to hold an annual ZEC and recognize top performers for building the most energy-efficient homes. The ZEC is a valuable marketing and educational channel for the Companies to showcase the affordability and benefits of zero energy home construction to Connecticut's building community. Additionally, in 2019-2021, the Companies will investigate adding two additional categories to increase participation in the ZEC: (1) a category for multifamily buildings that build to Passive House design principles and (2) a category for gut rehab or major renovations.

### Increased Education, Training, and Outreach

The new construction and major renovations marketplaces are continuously evolving and adopting new building standards and practices. As such, for the 2019-2021 Plan, the Companies will continue to offer trainings, including code compliance (for 2015 IECC) and HERS Ratings, to builders and the construction community. The Companies will extend educational opportunities and trainings regarding high-efficiency building standards and practices beyond the new construction marketplace to the real estate, home inspection, and appraisal communities. This educates additional Connecticut communities about the benefits of energy efficiency and about energy ratings (e.g., HERS), building certifications, and code standards.

The Companies will continue to work with trade ally organizations to promote the New Construction, Additions & Major Renovations solution, including the American Institute of Architects and the Home Builders and Remodelers Association.

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## 2.9 HOME PERFORMANCE SERVICES (MARKET-RATE)

### OVERVIEW

As part of the Residential Energy Efficiency Portfolio, the Companies implement a Home Performance Services solution for market-rate customers—Home Energy Solutions ("HES"). The HES solution's primary objectives are to optimize home energy performance, reduce energy consumption, and to increase the comfortability, health, and safety of existing single-family residential dwellings in Connecticut.

This objective is achieved through the implementation of whole home performance services, including HVAC and DHW equipment testing, air sealing, and duct sealing. HES is a whole home energy performance assessment and direct install services solution. The focus of the HES solution is not just to increase the efficiency of individual building systems (e.g., lighting, HVAC, etc.) but to address how all a residential dwelling's systems interact and work together to optimize home energy performance.

Lighting is the key energy efficiency measure that drives electric energy savings across the Residential Energy Efficiency Portfolio. As discussed previously in this chapter, EISA will significantly affect the lighting marketplace and energy efficiency program savings and costs. HES incentive levels and measure mixes will change in 2020 and 2021 to accommodate reduced energy savings from lighting due to EISA implementation. For the 2020 and 2021 program years, the Companies and home performance contractors may need to alter the delivery model for home performance services to maximize duct sealing, air sealing, and insulation uptake.

### GOALS

The HES solution has three fundamental goals for the 2019-2021 Plan:

- Goal One: Customer Value. A key goal of HES is to provide a high-quality direct install services solution that is perceived as a high-value product to Connecticut's market-rate residential customers. This perception of being of significant value will be achieved by educating customers regarding the HES solution's benefits, including: substantial energy savings, water savings, increased comfortability, and improved indoor air quality and home safety.

- Goal Two: Develop Market Demand. Through the creation of a highly-valued product (see Goal One), the HES solution is continuously working to advance the home performance industry through the delivery of high-quality, standardized direct install services throughout the state. This consistency in delivery helps to create a naturally-occurring market demand for the HES solution.

The HES solution offers the DOE Home Energy Score as an option to customers in exchange for their agreement to release the data to Multiple Listing Services ("MLS") for future use and publication in real estate listings (not currently occurring in 2018). When MLS is ready to accept DOE Home Energy Scores, the Companies will be prepared to facilitate this data exchange. A primary purpose of offering the DOE Home Energy Score is to move the real estate marketplace (homeowners) toward valuing homes that are energy efficient and that received HES services. The Companies will continue to promote the value of the HES solution, for its energy, water, and GHG emissions reductions, to drive market demand in 2019-2021.

- Goal Three: Serve as a Sustainable and Reliable Energy Reduction Platform. Another primary goal for the HES solution is to ensure that the program remains a sustainable source of energy savings and GHG emissions reductions for the 2019-2021 Plan. The HES solution is designed as a stable energy efficiency platform that generates significant and reliable energy savings (in MMBTUs) for the Companies. For the 2019-2021 Plan, HES and its sister solution HES-Income Eligible, will serve as the primary drivers of the Companies' support in helping the State of Connecticut meet its legislative goal of weatherizing 80 percent of Connecticut's existing homes by 2030.[30]

During the 2019-2021 Plan, the Companies will also focus their efforts on collaborating with the Energy Efficiency Board, DEEP, and other stakeholders to establish a stable funding source or other mechanism for the Companies to deliver the HES solution to oil and propane-heated homes. The Companies will investigate the value of adopting a modified Utility Cost Test that will allow additional benefits, such as oil and propane savings, to be included when evaluating the cost-effectiveness of HES.

This directed focus is a result of the partial diversion of the Energy Efficiency Fund during program years 2017-2019 which has hindered the Companies from adequately addressing the home energy performance needs of oil and propane-heated homes. A stable funding source or modified Utility Cost Test would allow the Companies to provide direct install services (with no caps) to all customers; regardless of how they heat their home.

## TARGET MARKETS

The HES solution services target all existing single-family residential structures in Connecticut. A single-family home is defined as a structure with a single dwelling unit or 2-4 dwelling units. A customer must not have participated in either HES or HES-Income Eligible within the past 36 months to receive HES services.

The Companies will continue to monitor program and demographic data to determine if certain residential market segments are being adequately served by the HES solution. If any market segments or

[30] Public Act 11-80.

geographic locations are identified as being underserved, the Companies will utilize marketing channels, such as limited-time promotions, incentives, targeted marketing, and/or special financing offerings through the Connecticut Green Bank.

The US Housing and Urban Development Department defines a moderate-income household as one that is between 60 to 80 percent of the state median income.[31] In mid-2018, Eversource completed a Moderate-Income Participation analysis of 46,000 homes that participated in HES from 2012 to March 2018. The analysis revealed that moderate-income participation remained steady over the seven-year period despite the increasing HES co-pay and that these homes tend to be smaller than other residential buildings (between 1,000 and 2,999 square feet). The analysis further noted that the Companies are currently serving the communities where moderate-income households are concentrated. During the 2016-2018 Plan, the Companies utilized a successful outreach model for increasing electric and natural gas-heated home participation in HES. For the 2019-2021 Plan, the Companies will utilize this same model to target moderate-income households.

## MANAGEMENT APPROACH

Throughout the 2019-2021 Plan, the HES solution will continue to deliver high-quality home energy performance and direct install services to customers through a managed program approach. This management design will mimic the HES solution's structured approach during the 2016-2018 Plan. Currently, HES "Qualified Vendors" are managed by the Companies to ensure delivery of the same high-quality, innovative and cost-effective home performance services throughout the state for a consistent customer experience. The Companies will also ensure excellence in program delivery through an established and robust quality assurance process.

To ensure continued high-quality program delivery, the Companies will continue to offer specialized trainings for Qualified Vendors throughout the 2019-2021 Plan. This may include but is not limited to: DOE Home Energy Score, Advanced Duct Sealing, and energy efficiency sales trainings. During the 2020 and 2021 program years, the Companies will still require Qualified Vendors to meet stringent qualifications and all participating contractors will be required to meet the HES solution's minimum qualifications, including but not limited to: meeting insurance requirements, achieving home energy performance and energy-saving metrics, and maintaining the certifications and professional licenses needed to perform the HES solution's direct install services.

For the 2019-2021 Plan, the HES solution will continue to be a utility-managed direct-install service open to all Qualified Vendors. This management structure ensures Connecticut remains a nationally-

[31] US Housing and Urban Development Department. *Census 2000 Low and Moderate-Income Summary Data*. Available at: https://www.hudexchange.info/programs/census/low-mod-income-summary-data/.

recognized leader in delivering consistent home energy performance services throughout the 2019-2021 Plan.

### HES Solution Co-Pay

The Companies will continue to require a customer co-pay throughout the 2019-2021 Plan. As of June 1, 2018, the Companies have a tiered co-pay that varies depending on the heating fuel type of the home. For electric and natural gas-heated homes, the co-pay will remain $149 through December 31, 2018. Oil and propane-heated homes will pay a $25 differential (co-pay = $174) to cover the funding gap created by the absence of an energy efficiency funding mechanism for these fuel types. This ensures that all fuel types are still able to access the HES solution's valuable home energy performance and direct install services.

If the Companies and the Energy Efficiency Board determine it is necessary, the Companies will request to establish a new co-pay amount or eliminate/change the differential fee for oil and propane-heated homes. This request could be based on a variety of factors, including: budget levels, market demand for the HES solution, methodology changes for benefit-cost testing, or if a new funding mechanism for oil and propane heating customers is implemented.

As oil and propane funding is not expected to change markedly in 2019 and will not achieve full funding status until 2020, the Companies are recommending maintaining the current co-pay amounts for the beginning of 2019. The Companies will review HES market activity with the Energy Efficiency Board in the beginning of 2019 and make a recommendation to DEEP if any changes are required to the co-pay. The Companies would plan on making any co-pay changes commensurate with a September 1st implementation date to reduce market confusion (by deviating to another co-pay change date than what has been used in previous years) and to ensure changes and their impact on the market can be analyzed easily in comparison with prior co-pay changes.

## DIRECT INSTALL SERVICES

Throughout the 2019-2021 Plan, the HES solution will deliver high-quality direct install services to single-family homes statewide. To ensure continuity in program delivery statewide, the Companies will continue to require: (1) the delivery of HES direct-install services at the time of a home energy performance assessment, (2) a minimum MMBtu threshold to be considered a "Qualified Vendor," and (3) ending the visit with a Kitchen Table Wrap-Up. The MMBtu threshold requirement will be adjusted annually to reflect prior year performance and program changes planned for any given year.

The HES solution is designed as a tailored direct-install services program. Each home is treated in an individual manner to best serve the customer's and residential dwelling's energy needs. This means that the direct-install services listed below may differ between customers and is dependent on the home and the customer's needs or preferences.

## Safety and Health Inspection

Every HES solution visit begins with a visual assessment of the home by the HES Vendor. This walkthrough assessment allows the vendor to identify health and safety concerns, areas that need direct install services, and the performance and efficiencies of HVAC and DHW equipment, appliances, and lighting. This walkthrough also gives the HES Vendor an opportunity to look at the home holistically to determine the best customized home performance approach for that residential dwelling.

HES Qualified Vendors perform a variety of tests to ensure that there are no health or safety barriers (e.g., gas leaks, asbestos containing material, mold, etc.) within the home that will prevent them from delivering direct-install services. This includes testing to ensure that gas lines (natural gas or propane) are properly sealed, the home is properly ventilated, and that combustion systems are venting properly. The purpose of these tests is two-fold: (1) to ensure that the home is safe for direct install services, and (2) to ensure that the home is healthy and safe for the dwelling's occupants. Results from the Companies' health and safety barrier tracking for 2017 are provided below:

Figure 2-2: Eversource Electric (2017 HES)

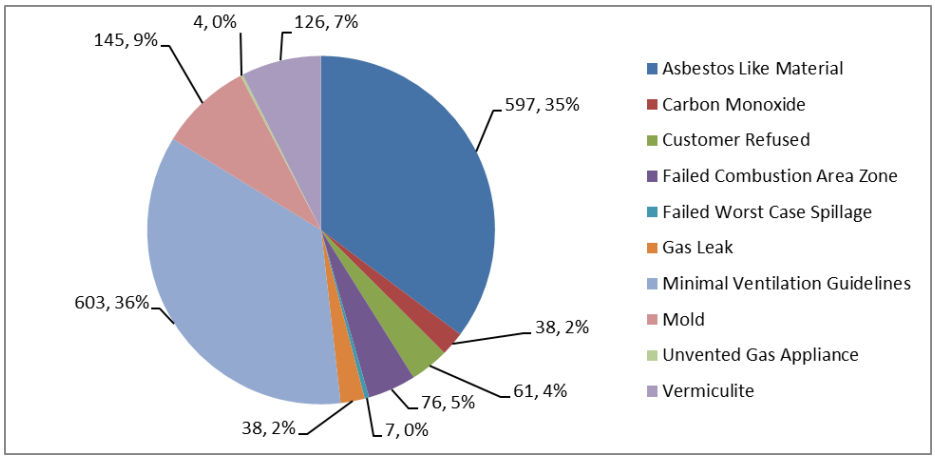
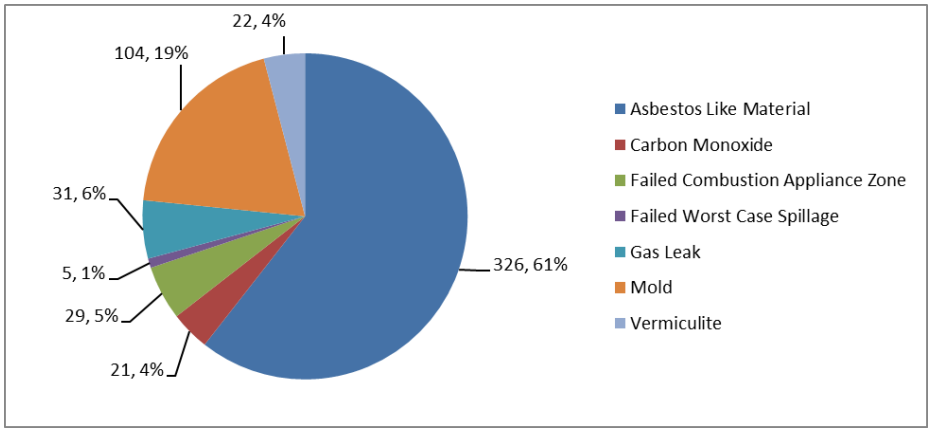



Figure 2-3: United Illuminating (2017 HES)



In the 2019-2021 Plan, the Companies will continue to promote the use of financing to remediate health and safety barriers and search for alternate funding sources that could be used to address properties where health and/or safety barriers have been identified and prevent home performance services from being implemented. The Companies will look to collaborate with stakeholders across the state to pursue exploring funding opportunities to address health and safety barriers.

### Blower Door-Guided Air Sealing

The blower door test is a diagnostic tool utilized by HES vendors to measure air infiltration in a home. The blower door test produces a partial vacuum in the home that allows contractors to measure the number of cubic feet per minute ("CFM") of air leakage. In certain instances where a health or safety barrier exists, a pressurized blower door test may be utilized. This diagnostic tool also allows HES vendors to identify where air leaks are occurring in a home and the primary areas that result in heating or cooling losses to the outside that need air-sealing services, including: caulking, spray foam, and weatherization strips. Once air sealing has occurred, a post-blower door test reading is performed to measure the home's air leakage again. The energy reductions are measured by the difference in CFMs between the initial and post-blower door tests.

### Duct Sealing

If a home has a ducted central heating or cooling system, a duct blaster test can measure the air leakage throughout a home's ductwork system. If the duct blaster test indicates air leakage, then the HES vendor will seal the ductwork on-site. In certain circumstances (e.g., inaccessible duct work), Advanced Duct Sealing may be provided during a separate customer visit. Before and after measurements are recorded by HES vendors to determine duct leakage reductions.

### Water-Saving Measures

As noted in Section 2.1, approximately 18 percent of an American home's energy consumption is used for heating water for baths, dish washing, showers, and washing clothes. For the 2019-2021 Plan, the HES solution will continue to provide direct install services of water-saving measures, including the installation of faucet aerators, hot water pipe insulation, and low-flow showerheads. These measures increase the comfortability of a home, provide water-saving benefits, and save energy.

### LED Lighting

For the 2019-2021 Plan, the Companies will continue to promote the replacement of inefficient lighting (e.g., incandescent bulbs and halogens) with high-efficiency ENERGY STAR-certified LEDs. As previously discussed in Chapters 1 and 2, there is uncertainty regarding the enforcement and implementation of EISA 2020 standards starting on January 1, 2020 and beyond. Energy savings from the direct install of LEDs are expected to decrease over the 2019-2021 Plan. This may significantly reduce the lighting installations performed through HES over the course of the 2019-2021 Plan.

The HES solution's flexible design allows the Companies to make rapid changes to address immediate market demands and regulation changes. For example, to address diminished energy savings, the Companies may quickly establish a cap on the quantity of LED bulbs that can be installed in a home. Or, the Companies may determine that to maintain the HES solution's cost-effectiveness that LED bulbs may only be installed in high-use areas, such as bathrooms, kitchens, and living areas. The Companies anticipate removing the direct install of certain LED bulbs through the HES solution during the 2019-2021 Plan.

The Companies will communicate any program changes immediately to HES vendors to ensure continuity in direct-install services statewide.

### DOE Home Energy Score (Optional Service)

In 2015, Connecticut became the first state in the nation to implement the use of the DOE Home Energy Score statewide. The DOE established the DOE Home Energy Score to help develop market demand for residential energy efficiency nationwide and to assist in the creation of a naturally-occurring home performance market. Though the DOE Home Energy Score does not generate energy savings directly, the use of this home scoring tool creates awareness, helps Connecticut residents to better understand how to value energy efficiency and identifies opportunities for additional energy savings (add-on measures). For the 2019-2021 Plan, the Companies will explore the correlations between the DOE Home Energy Score and customers implementing add-on measures.

The DOE Home Energy Score has become an integral part of the HES solution as it helps residential customers understand the value add of home performance improvements. For the 2019-2021 Plan, the Companies will continue to utilize the DOE Home Energy Score as an optional part of the HES solution and will work with DEEP to support statewide efforts designed to integrate the home labeling system into real estate listings.

The HES solution offers the DOE Home Energy Score as an option to customers in exchange for their agreement to release the data to Multiple Listing Services ("MLS") for future use and publication in real estate listings (not currently occurring in 2018). When MLS is ready to accept DOE Home Energy Scores, the Companies will be prepared to facilitate this data exchange.

### Kitchen Table Wrap-Up

The Kitchen Table Wrap-Up is the key customer educational tool utilized by the Companies to promote the value of the HES solution's direct install services. Once the HES vendor has completed the direct install services, they sit down with the customers to explain the home performance services performed. The HES vendor will review the following information with the customer: results from blower door or duct testing, add-on measures (see next section) that the customer can pursue for additional energy

savings, financing options, health and safety information, online resources, and information regarding the Companies' individual customer engagement platforms.

## ADD-ON MEASURES

In addition to direct install services, the Companies typically offer incentives or financing opportunities to encourage customers to pursue add-on energy efficiency measures. These add-on measures include: appliances, insulation, connected Wi-Fi thermostats, windows, and HVAC and DHW equipment. Information regarding add-on measures, including rebate forms, is reviewed and provided to the customer at the Kitchen Table Wrap-Up.

### HVAC Systems

During the home performance assessment, the HES vendor evaluates a home's heating system to ensure it is safely operating and running efficiently. The need for a heating system upgrade is evaluated during the HES assessment, and HES vendors will notify customers during the Kitchen Table Wrap-Up about available upstream incentives and traditional rebates and financing available for their home, including the use of ECM Pump motors for hydronic heating systems.

Heat pump systems and central air conditioning systems are also evaluated during the HES home energy performance assessment. HES vendors are trained to educate customers about any energy-efficient alternatives, available incentives, and the importance of hiring licensed quality contractors to ensure that systems are properly sized and installed, and function at the most efficient levels possible. For the 2019-2021 Plan, the Companies will explore adding an additional heat pump rebate for customers who participate in the solution. The rebate will apply to customers who: (1) heat with oil or propane, and (2) if they install a qualifying ductless or ducted system heat pump system. Controls for HVAC, where heat pumps are integrated with existing systems, will be explored for system optimization. Due to limited budgets through mid-2019, the Companies will only offer heat pump rebates to electric heat customers through the first two quarters of 2019, and then expand the incentive offering to include customers who heat with oil or propane as a pilot beginning on July 1, 2019.

### DHW Equipment

During the initial assessment of the home, the HES vendor will evaluate all the mechanical equipment, including DHW units, in a home to ensure they are operating safely and efficiently. Based on this evaluation, the HES vendor can determine if energy-efficient upgrades are needed for DHW equipment and provide the customer with a rebate (during the Kitchen Table Wrap-Up) to purchase a high-efficient replacement unit.

For the 2019-2021 Plan, the Companies will continue to promote HPWHs and tankless natural gas water heaters to eligible customers. The Companies will investigate offering enhanced DHW equipment incentives through the HES solution.

### Connected Wi-Fi Thermostats

A thermostat controls the heating and cooling systems in your home. Connected Wi-Fi thermostats are devices that when connected to a home's heating and cooling system, can remotely adjust the temperature setting or even turn the system on or off.

During the Kitchen Table Wrap-Up, a HES vendor will provide a written recommendation to the customer that they are a good candidate for a connected Wi-Fi thermostat. For the 2019-2021 Plan, the Companies will continue to offer a connected Wi-Fi thermostat rebate to customers who have received HES direct install services.

### Insulation

Insulation is the best complement to the direct install services provided through the HES solution. During the home performance assessment, HES vendors evaluate the insulation levels in the attic, walls, and basement to determine if there are energy-saving opportunities. Incentives (rebates) are provided to customers at the Kitchen Table Wrap-Up to encourage them to install high-performance insulation in critically-needed areas of the home. The HES solution also offers rebates for insulated attic hatch/stairwell covers.

### Windows

Windows allow heat gain and heat loss and are responsible for 25 to 35 percent of a home's heating and cooling energy use. During the home performance assessment, HES vendors evaluate the efficiency of a home's windows and identify if direct-install services (e.g., caulking, weather stripping, etc.) are needed. Window rebates may be provided to customers at the Kitchen Table Wrap-Up to encourage them to hire a professional contractor to replace their single-pane units with ENERGY STAR-qualified windows with a U-Factor of ≤ 0.27.

### Appliance Replacement Rebates

During the initial home assessment, the HES vendor evaluates the efficient of common household appliances to determine if there are energy efficiency opportunities. Incentives are provided to customers at the Kitchen Table Wrap-Up to encourage the replacement of inefficient units with ENERGY STAR-qualified appliances, including: clothes washers, dehumidifiers, freezers, and refrigerators.

### HES Bonus Rebate

To encourage more comprehensive energy-saving projects, HES customers may qualify for a HES bonus rebate for installing energy efficiency measures such as insulation. The HES bonus rebate amount has traditionally been designed to be equal to the HES co-pay paid at the time of the customer's HES assessment, however, the Companies reserve the right to modify this amount. For the 2019-2021 Plan, the Companies will also screen additional add-on measures, such as HVAC and domestic water heating to determine if they should also be included as part of the HES bonus rebate.

### Boiler Reset Controls

During a HES assessment, contractors will evaluate a natural gas boiler to determine whether it has an operational boiler water temperature reset control. A temperature reset control on a natural gas boiler can save about five percent of a boiler's costs annually. These devices serve as automatic water temperature controls that change the boiler water temperature based on the outdoor temperature. During the shoulder months (fall and spring), the water temperature can be a little cooler than during the cold winter months. This improves the comfortability of a home and improves boiler efficiency.

### Potential Add-On Measures

For the 2019-2021 Plan, the Companies are investigating whether to add a rebate for replacing fluorescent lighting fixtures with ENERGY STAR-certified LED products in high-use areas.

## CONTRACTOR EDUCATION, TRAINING, AND OUTREACH

The Companies require HES vendors to have the most up-to-date training regarding building science and design, high-efficiency HVAC and DHW equipment installation, lighting design, emerging technologies, and home energy performance services. In 2019-2021, the Companies will continue to coordinate with trade allies to facilitate training opportunities for HES vendors including, but not limited to: Building Performance Institute certifications (e.g., Building Analyst, Home Energy Professional), DOE Home Energy Scorecard Qualified Assessor, financing workshops, and health and safety barrier training.

For the 2019-2021 Plan, the Companies will continue to form valuable trade ally partnerships within the home performance contractor network to increase comprehensiveness and drive energy savings from non-lighting measures, specifically insulation and HVAC and DHW equipment. Education and outreach to trade allies and home performance contractors will bring more awareness regarding the value of the HES solution and to develop opportunities for more involvement from previously non-engaged trade allies.

## ZERO ENERGY HOMES RETROFIT PILOT

For the 2019-2021 Plan, the Companies, in collaboration with the Connecticut Green Bank, will continue to explore implementing a residential Zero Energy Home Retrofit pilot designed to offer a whole-building approach to achieve deep energy savings in existing Connecticut homes. This objective will be achieved through a combination of energy-efficient upgrades, building envelope improvements, high-efficiency heating sources, heat pumps, and renewable energy options.

The primary focus of the Zero Energy Homes Retrofit pilot will be to provide a hybrid energy-saving platform that homeowners can utilize to make energy efficiency improvements. Each project will undergo comprehensive energy modeling, including calculating a home's Energy Use Intensity ("EUI"). EUI is a metric utilized to benchmark the energy usage in buildings, including: appliance, cooling, domestic hot water, heating, and lighting loads.

For the Zero Energy Homes Retrofit pilot, participating homes must meet the following three criteria: (1) a percentage reduction of heating and cooling load through building envelope improvements, (2) a percentage reduction of overall energy use as measured by reduction in EUI, and (3) achieve a minimum percentage of overall energy use from renewable energy sources.

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# 2.10 HOME PERFORMANCE SERVICES (INCOME-ELIGIBLE)

## OVERVIEW AND OBJECTIVES

The HES-Income Eligible solution is a valuable part of the Residential Energy Efficiency Portfolio. The primary objective of the solution is to provide income-eligible customers with home performance assessments and direct install services that help reduce energy usage, optimize home performance, and to increase the health, safety, and comfortability of existing single-family residential dwellings across the state. The HES-Income Eligible solution helps reduce the energy cost burden for income-eligible customers.

This key objective is achieved through the implementation of direct install services, including air sealing, duct sealing, and HVAC and DHW equipment testing. The HES-Income Eligible solution provides the same home performance assessment and direct install services as HES; however, eligible customers receive these same services at no cost. Additionally, the HES-Income Eligible solution offers low-cost energy-efficient upgrades for add-on measures which typically are nominal customer or landlord co-payments.

For the 2019-2021 Plan, HES-Income Eligible and its sister solution HES, will serve as the primary drivers of the Companies' support in helping the State of Connecticut meet its legislative goal of weatherizing 80 percent of Connecticut's existing homes by 2030.[32]

### Health and Safety

An additional objective of the HES-Income Eligible solution is a focus on the health and safety of income-eligible customers. The health and safety barriers most often identified at income-eligible properties include mold, asbestos containing material. In 2017, the Companies found 1,737 homes with health or safety barriers with the most common barrier identified as asbestos like material ("ALM") found in the home (688 homes or 39.6 percent). Other barriers identified included but are not limited to: failed combustion zones (208 homes or 11.9 percent), mold (189 homes or 10.88 percent), gas leaks (107 or 6.16 percent), and vermiculite (83 homes or 4.78 percent). The existence of these health and safety barriers in a home prevent the Companies from delivering direct install services provided through the HES-Income Eligible solution.

In the 2019-2021 Plan, the Companies will continue to explore ways to address income-eligible properties where health and/or safety barriers have been identified and prevent home performance services from being implemented. The Companies will look to collaborate with stakeholders across the state to pursue exploring funding opportunities to address health and safety barriers.

[32] Public Act 11-80.

## TARGET MARKET

The HES-Income Eligible solution targets income-eligible residential customers who live in single-family buildings (1 to 4 units) across Connecticut. Customers who qualify for the HES-Income Eligible solution must meet at least one of the following criteria:

- Have income that is at or below 60 percent of the state median income;
- Customer must not have participated in HES or HES-Income Eligible in the past 36 months; and
- Customers who live in single-family dwellings or facilities that provide beneficial services to residents, including but not limited to: disabled veterans groups, group homes, halfway homes, and non-profit agencies who offer housing to disadvantaged residents.

## MANAGEMENT APPROACH

For the 2019-2021 Plan, the HES-Income Eligible solution will continue to deliver home performance assessments and direct install services to customers through a Qualified Vendor-managed program approach. HES-Income Eligible "Qualified Vendors" are selected through a competitive bidding process managed by the Companies. This managed approach ensures the delivery of the same high-quality, innovative and cost-effective home performance services throughout Connecticut. The Companies will also ensure excellence in program delivery through an established and robust quality assurance process.

### Weatherization Assistance Program Coordination

For the 2019-2021 Plan, the Companies will continue their long-term partnership with the Community Action Agencies ("CAAs") to assist in cost sharing for DOE-funded Weatherization Assistance Program ("WAP") projects. DEEP administers Connecticut WAP projects through one CAA administrator. The statewide CAA network provides leads and applications to the selected CAA administrator. The target market for WAP are single-family properties and it is designed to help income-eligible customers minimize their energy burden through retrofits and home improvement measures.

The Companies cost share some energy efficiency measures for WAP projects, including: ductless heat pumps, domestic hot water measures, administrative fees, heating system replacements, insulation, LED bulbs and fixtures, and windows. During 2019-2021, the Companies will continue to enhance their coordinated partnership to ensure that high-quality home performance services are delivered to qualified customers and that this cost-sharing program is implemented in a streamlined manner.

## DIRECT INSTALL SERVICES

During the 2019-2021 Plan, the HES-Income Eligible solution will deliver high-quality direct install services to single-family homes statewide. To ensure continuity in program delivery statewide, the Companies will continue to require the delivery of HES-Income Eligible direct-install services at the time

of a home performance assessment. Additionally, the Companies will continue to require a minimum MMBTU threshold to be considered a "Qualified Vendor" and ending the home performance visit with a kitchen table wrap-up.

The HES-Income Eligible solution is designed as a tailored direct-install services program. Each home is treated in an individual manner to best serve the customer's and residential dwelling's energy needs. This means that the direct-install services listed below may differ between customers and is dependent on the home and the customer's needs or preferences.

### Safety and Health Inspection

Every home performance services visit begins with a visual assessment of the home by the HES-Income Eligible vendor. A walkthrough assessment of the home allows the vendor to identify health and safety concerns, areas that need direct install services, and the performance and efficiencies of HVAC and DHW equipment, appliances, and lighting. This walkthrough also gives the HES-Income Eligible vendor a holistic view of the home to determine the best performance approach for that residential dwelling.

HES-Income Eligible Qualified Vendors perform a variety of tests to ensure that there are no health or safety barriers (e.g., gas leaks, asbestos containing material, mold, etc.) within the home that will prevent them from delivering direct-install services. This includes testing to ensure that gas lines (natural gas or propane) are properly sealed, the home is properly ventilated, and that combustion systems are venting properly. The purpose of these tests is two-fold: (1) to ensure that the home is safe for direct install services, and (2) to ensure that the home is healthy and safe for the dwelling's occupants.

The HES-Income Eligible solution also assists income-eligible customers in remediating some health and safety issues that are barriers to energy efficiency, such as: performing a clean, tune & test of the home's HVAC system, making furnace repairs, fixing gas (natural gas and propane) leaks on the customer side, and performing DHW tune-ups.

### Blower Door-Guided Air Sealing

The blower door test is a diagnostic tool utilized by HES-Income Eligible vendors to measure air infiltration in a home. The blower door test produces a partial vacuum in the home that allows contractors to measure the number of cubic feet per minute ("CFM") of air leakage. In certain instances where a health or safety barrier exists, a pressurized blower door test may be utilized. This diagnostic tool helps HES-Income Eligible vendors identify where air leaks are occurring in a home and the primary areas that result in heating and cooling loses to the outside that need air-sealing services, including: caulking, spray foam, and weatherization strips. Once air sealing has occurred, a post-blower door test reading is performed to measure the home's air leakage again. The energy reductions are measured by the difference in CFMs between the initial and post-blower door tests.

### Duct Sealing

If a home has a ducted central heating or cooling system, a duct blaster test can measure the air leakage throughout a home's ductwork system. If the duct blaster test indicates air leakage, then the HES-Income Eligible vendor will seal the ductwork on-site. In certain circumstances (e.g., inaccessible duct work), Advanced Duct Sealing may be provided during a separate customer visit. Before and after measurements are recorded by vendors to determine duct leakage reductions.

### Water-Saving Measures

Approximately 18 percent of an American home's energy consumption is used for heating water for baths, dish washing, showers, and washing clothes. In 2019-2021, the HES-Income Eligible solution will continue to direct install water-saving devices in homes, including: faucet aerators, hot water pipe insulation, and low-flow showerheads. These measures increase the comfortability of a home, provide water-saving benefits, and save energy.

### LED Lighting

For the 2019-2021 Plan, the Companies will continue to promote the replacement of inefficient lighting (e.g., incandescent bulbs and halogens) with ENERGY STAR-certified LEDs. There is uncertainty regarding the enforcement and implementation of EISA 2020 standards, which are scheduled to become effective January 1, 2020. Energy savings from the direct install of LEDs are expected to decrease over the 2019-2021 Plan.

As a result, during the 2019-2021 Plan, the Companies may have to establish a guideline requiring HES-Income Eligible vendors to assess all lighting in a home and to replace bulbs only when it is deemed cost-effective. For example, the Companies may determine that LED bulbs should only be installed in high-use areas (e.g., kitchens and living rooms) to increase cost-effectiveness and a cap on the quantity of LEDs installed may be put in place.

The Companies will communicate any changes immediately to vendors to ensure continuity in the delivery of the HES-Income Eligible solution statewide. The Companies anticipate removing the direct install of certain LED bulbs through the HES solution during the 2019-2021 Plan.

### Kitchen Table Wrap-Up

The Kitchen Table Wrap-Up is the key customer educational tool utilized by the Companies to promote the value of the HES-Income Eligible solution's direct install services. Once the HES-Income Eligible vendor has completed the direct install services, they sit down with the customers to explain the home performance services performed. The HES-Income Eligible vendor will review the following information with the customer: results from blower door or duct testing, the suggested add-on measures (see next section) that can be installed for additional energy savings, financing options, health and safety

information, online resources, and information regarding the Companies' individual customer engagement platforms.

## ADD-ON MEASURES

In addition to direct install services, the HES-Income Eligible solution may provide an incentive to cover the partial or full cost of installing additional energy efficiency measures. These add-on measures include: DHW equipment replacements, HVAC system upgrades, HPWH upgrades, insulation upgrades, connected Wi-Fi thermostats, and window replacements.

### HVAC Systems

During the home performance assessment, the HES-Income Eligible vendor evaluates a home's heating system to ensure it is safely operating and running efficiently. The need for a heating system upgrade is evaluated during the HES-Income Eligible assessment, and vendors will notify customers during the Kitchen Table Wrap-Up about available upstream incentives and traditional rebates and financing available for their home, including the use of ECM Pump motors for hydronic heating systems.

Heat pump systems and central air conditioning systems are also evaluated during the home energy performance assessment. HES-Income Eligible vendors are trained to educate customers about any energy-efficient alternatives, available incentives, and the importance of hiring licensed quality contractors to ensure that systems are properly sized and installed, and function at the most efficient levels possible.

### Clean, Tune, and Test

A home's heating and cooling system must be properly maintained to ensure energy efficiency within a home. Historically, the Companies have found that providing upkeep and maintenance services for HVAC systems provides both energy savings (through combustion efficiency) and extends the life of the HVAC system equipment, preventing the need for costly equipment replacements. As poorly maintained HVAC systems are often seen as a barrier to the blower door test, the HES-Income Eligible solution will continue to offer this add-on measure throughout the 2019-2021 Plan.

### DHW Equipment

During the initial assessment of the home, the HES-Income Eligible vendor will evaluate all the mechanical equipment, including DHW units, in a home to ensure they are operating safely and efficiently. Based on this evaluation, the vendor can determine if energy-efficient upgrades are needed for DHW equipment and provide the customer with a rebate (during the Kitchen Table Wrap-Up) to purchase a high-efficient replacement unit.

Throughout 2019-2021, the Companies will continue to promote HPWHs and tankless natural gas water heaters to eligible customers and may consider offering enhanced DHW equipment incentives for the HES-Income Eligible solution.

In 2018, United Illuminating conducted a HPWH pilot for the HES-Income Eligible solution. For the 2019-2021 Plan, this pilot's effort will be incorporated into the HES-Income Eligible solution where the Companies will determine if it is cost effective.

### Appliance Upgrades

Aggregate appliance electricity consumption is a significant amount of the electricity used within a home. Refrigerators use approximately 10 percent of the average American home's annual electricity consumption. As inefficient appliances increase the energy burden for income-eligible customers, the HES-Income Eligible solution provides incentives, where deemed cost-effective, for appliance replacements. Appliances eligible for replacement include: freezers and refrigerators.

### Connected Wi-Fi Thermostats

A thermostat controls the heating and cooling systems in your home. connected Wi-Fi thermostats are devices that when connected to a home's heating and cooling system, can remotely adjust the temperature setting or even turn the system on or off.

During the Kitchen Table Wrap-Up, a HES-Income Eligible vendor will provide a written recommendation to the customer stating that they are a good candidate for a connected Wi-Fi thermostat. In 2019-2021, the Companies will continue to offer a connected Wi-Fi thermostat incentive to customers who have received HES-Income Eligible direct-install services only.

### Insulation

Insulation is the best complement to the direct install services provided through the HES-Income Eligible solution. During the home performance assessment, vendors evaluate the insulation levels in the attic, walls, and basement to determine if there are energy-saving opportunities. The no-cost or low-cost incentives provided through the HES-Income Eligible solution are noted to customers at the Kitchen Table Wrap-Up. The low-cost incentive is designed to encourage them to install high-performance insulation in critically-needed areas of the home. There are additional rebates for insulated attic hatch/stairwell covers.

### Boiler Reset Controls

During a home energy performance assessment, HES-Income Eligible vendors will evaluate a natural gas boiler to determine whether it has a temperature reset control. A water temperature reset control on a natural gas boiler saves about five percent of a boiler's costs annually and serves as an automatic water temperature control that changes the boiler's water temperature based on the outdoor temperature.

During the shoulder months (fall and spring), the water temperature in the boiler can be a little cooler than during the cold winter months. This energy efficiency measure helps improve the comfortability of a home and boiler efficiency.

## CONTRACTOR EDUCATION, TRAINING, AND OUTREACH

The Companies require HES-Income Eligible vendors to have the most up-to-date training regarding building science and design, high-efficiency HVAC and DHW equipment installation, lighting design, emerging technologies, and home performance services. In 2019-2021, the Companies will continue to coordinate with trade allies to facilitate training opportunities for HES-Income Eligible contractors including, but not limited to: Building Performance Institute certifications (e.g., Building Analyst, Home Energy Professional), DOE Home Energy Scorecard Qualified Assessor, financing workshops, and health and safety barrier training.

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## 2.11 HOME PERFORMANCE SERVICES (MULTIFAMILY INITIATIVE)

### OVERVIEW

The primary objective of the Companies' Multifamily Initiative is to provide a comprehensive solution that evaluates and services all multifamily buildings (e.g., income-eligible and market-rate) for all energy efficiency opportunities. The Multifamily Initiative is a unique program that combines aspects of the Single-Family Home Performance Services solutions (HES and HES-Income Eligible) with the energy efficiency opportunities found in the Companies' C&I solutions—Energy Opportunities and Small Business Energy Advantage.

The initiative's purpose is to treat multifamily buildings holistically and to provide a complete package of solutions that address the needs of this market segment as their needs span both the Residential and C&I Energy Efficiency Portfolios. Treating a multifamily building holistically requires viewing the total energy usage, including tenant and tenant support (e.g., common areas and shared building systems).

### TARGET MARKET

The Multifamily Initiative services residential properties with five or more units. These buildings include, but are not limited to: apartment and complexes, condominiums and co-operatives, congregate and senior housing, mixed-use residential and commercial properties, assisted living facilities, and dormitories. Typically, these buildings are managed by property management companies or a condominium association. In most cases, the person(s) who occupy the housing units cannot make decisions regarding changes to the four walls, the roof, and fixed appliances. This falls under the purview of the property owner, property management company, or condominium association.

The unique hybrid platform of the Multifamily Initiative allows the solution to service market-rate and income-eligible residential customers throughout Connecticut, while helping residential property owners become energy efficient at the same time. For each multifamily property, there are multiple solutions through the Residential and C&I Energy Efficiency Portfolios that the Companies' staff and the customer's implementation contractors can work with to provide a customized solution.

### PROGRAM OFFERINGS

The challenge in addressing a multifamily property's unique energy needs is to offer a package of energy-efficient measures that benefits both the tenants in the living/tenant spaces, and the owners with capital property improvements to the common and exterior areas. Since each multifamily property is unique, the Multifamily Initiative takes the approach to address the appropriate energy savings needs of the property based on evaluating the energy savings potential and working with decision makers to

implement an effective plan. Customers have seen the value of the technical assistance and financial incentives that the Multifamily Initiative offers.

The Multifamily Initiative's incentive mechanisms mimic established incentive structures developed for home performance services solutions (HES and HES-Income Eligible) and C&I solutions. For the Multifamily Initiative, there is no co-pay for either market-rate or income-eligible customers to receive direct-install services (detailed below). For market-rate projects, the Multifamily Initiative offers incentives for building owners to install add-on measures (i.e., insulation, HVAC systems, DHW equipment, windows, and appliances). For tenant areas and/or multifamily buildings that qualify for HES-Income Eligible services, the Companies offer incentives for add-on measures that provide a greater percentage of reimbursement than what is offered for market-rate projects.

Common area measures and central HVAC equipment incentives typically follow those used by C&I Energy Efficiency Solutions. The Multifamily Initiative utilizes tiered incentives to encourage comprehensiveness in energy efficiency projects. These tiered incentives help customers capture energy savings from all identified energy-saving measures within a planned implementation.

### Direct-Install Services (Tenant Areas)

The Multifamily Initiative provides comprehensive direct-install services in tenant areas of multifamily buildings. The tenant areas (i.e., apartments and condominium living spaces) receive similar services that are offered through the HES and HES-Income Eligible single-family home performance services solutions, including: air sealing, duct sealing, LED bulbs, and domestic hot water-saving measures (e.g., low-flow faucet aerators and showerheads). For the Multifamily Initiative, there is no co-pay for either market-rate or income-eligible customers to receive these direct-install services.

*Air Sealing*

The blower door test is a diagnostic tool used to measure air infiltration in a tenant area. The test produces a partial vacuum in the tenant area that allows a home energy performance technician to measure the number of CFM of air leakage. When a health or safety barrier exists, a pressurized blower door test may be utilized.

This diagnostic tool identifies where air leaks are occurring in the tenant area and also reveals the primary areas that result in heating or cooling losses to the outside. These primary areas need air-sealing services, such as: caulking, spray foam, and weatherization strips. Once air sealing has occurred, a post-blower door test reading is performed to measure the tenant area's air leakage again. Energy reductions are measured by the difference in CFMs between the initial and post-blower door tests.

*Duct Sealing*

If individual tenant areas have a ducted central heating or cooling system, a duct blaster test can measure the air leakage throughout the ductwork system. If the duct blaster test indicates air leakage, then the home energy performance contractor will seal the ductwork on-site. In certain circumstances (e.g., inaccessible duct work), Advanced Duct Sealing may be provided during a separate customer visit. Once the duct sealing is performed, before and after measurements are recorded in order to determine duct leakage reductions within the tenant area.

*LED Lighting*

For the 2019-2021 Plan, the Companies will continue to promote the replacement of inefficient lighting (e.g., incandescent bulbs and halogens) with high-efficiency ENERGY STAR-certified LEDs. There is uncertainty regarding the enforcement and implementation of EISA 2020 standards beginning on January 1, 2020 and beyond. For the 2019-2021 Plan, energy savings from the direct install of LEDs are expected to decrease. This may significantly reduce the lighting installations performed through the Multifamily Initiative throughout 2019-2021.

The Multifamily Initiative has a flexible design that allows the Companies to make rapid changes to address immediate market demands and regulation changes. For example, to address diminished energy savings, the Companies may quickly establish a cap on the quantity of LED bulbs that can be installed in a tenant area. Or, the Companies may determine that to maintain the initiative's cost-effectiveness that LED bulbs may only be installed in high-use areas, such as bathrooms, kitchens, and living areas. During the implementation of the 2019-2021 Plan, the Companies anticipate removing the direct install of certain LED bulbs through the Multifamily Initiative.

The Companies will communicate any program changes immediately to ensure continuity in Multifamily Initiative direct-install services statewide.

*Domestic Hot Water-Saving Measures*

For the 2019-2021 Plan, the Multifamily Initiative will continue to provide direct install services of water-saving measures, including the installation of faucet aerators, hot water pipe insulation, and low-flow showerheads. These measures increase the comfortability of each dwelling unit, generate water-saving benefits, and also save energy.

### Add-on Measures (Tenant Areas and Common/Exterior Areas)

In addition to the direct-install services in tenant areas, the Multifamily Initiative focuses on the rest of a multifamily building, including the common and exterior areas (e.g., hallways, laundry rooms, parking lots, and walkways). The Multifamily Initiative offers add-on measures for tenant areas that need additional energy efficiency services. These include, but are not limited to: appliances, insulation, HVAC

equipment and controls, DHW equipment and controls, windows, and lighting fixtures in dwelling units, common areas, and on the building's exteriors.

For market-rate projects, the Multifamily Initiative offers incentives for building owners to install high-efficiency equipment. For tenant areas and/or multifamily buildings that qualify for HES-Income Eligible services, the Companies offer incentives for add-on measures (i.e., insulation, HVAC systems, DHW equipment, windows, and appliances) that provide a greater percentage of reimbursement than what is offered for market-rate projects.

*Insulation*

High-performance insulation is one of the most cost-effective complements to the direct-install services provided by the Multifamily Initiative. During the home energy performance assessment, the multifamily building's insulation levels in the attic, roof, exterior walls, garage ceilings, and basement walls/ceilings are evaluated to determine if there are energy-saving opportunities. In addition to insulation, the Multifamily Initiative also encourages multifamily building owners to install insulated attic hatches and stairwell covers.

*HVAC Systems & Controls*

During the energy performance assessment of the tenant area(s) and common areas, the building's heating system is evaluated to ensure it is safely operating and running efficiently. Additionally, the multifamily building's heating systems, heat pump systems, HVAC controls (e.g. ECM pumps and variable frequency drives), and central air conditioning systems are also evaluated to determine if they need to be upgraded.

The Companies offer incentives for heat pumps that displace electric resistance heating and will explore, as an initial pilot, offering incentives for heat pumps installed in multifamily properties where the primary heating fuel is not electric to provide reductions in heating energy through higher efficiency. The Companies anticipate support for both ducted heat pumps and ductless heat pumps as part of this effort. Controls for HVAC, where heat pumps are integrated with existing systems, will be explored for system optimization. Due to limited budgets through mid-2019, the Companies will only offer heat pump rebates to electric heat customers through the first two quarters of 2019, and then expand the offering to include customers who heat with oil or propane as a pilot beginning on July 1, 2019.

*DHW Equipment*

During the initial assessment of the home, the multifamily building's mechanical equipment is evaluated, including DHW units, to ensure they are operating safely and efficiently. Based on this evaluation, the home energy performance technician can determine if energy-efficient upgrades are needed for the building's DHW equipment. For the 2019-2021 Plan, the Companies will continue to promote HPWHs and tankless natural gas water heaters to eligible customers.

*Windows*

Windows allow heat gain and heat loss and are responsible for 25 to 35 percent of a multifamily building's heating and cooling energy use. During the home performance assessment, a technician evaluates the efficiency of the multifamily building's windows and identifies if direct-install services (e.g., caulking, weather stripping, etc.) are needed. Window incentives are offered to multifamily building owners who replace their single-pane units with ENERGY STAR-qualified windows with a U-Factor of ≤ 0.27.

*Refrigerator Replacement*

During the initial energy performance assessment, the tenant areas are evaluated to determine if there are energy efficiency opportunities to replace inefficient refrigerators with ENERGY STAR-qualified units.

*LED Lighting*

For the 2019-2021 Plan, the Companies will continue to promote the replacement of inefficient lighting (e.g., incandescent bulbs and halogens) with high-efficiency ENERGY STAR-certified LEDs in the common and exterior areas of multifamily buildings.

*Connected Wi-Fi Thermostats*

A thermostat controls the heating and cooling systems in your home. connected Wi-Fi thermostats are devices that when connected to a home's heating and cooling system, can remotely adjust the temperature setting or even turn the system on or off. For the 2019-2021 Plan, the Companies will continue to only offer a connected Wi-Fi thermostat incentive to customers who have received direct-install services through the Multifamily Initiative.

### New Construction or Major Renovation Projects

If the project is for a new construction or major renovation project, the building owner must coordinate their efforts with the Companies' New Construction, Additions & Major Renovations solution's Multifamily WBP initiative (found in Section 2.8 of the 2019-2021 Plan).

## LEVERAGING PARTNERSHIPS

The Multifamily Initiative allows a customer to work with any implementation contractor of their choice. There are a variety of contractors in a number of trades and disciplines (e.g. lighting, HVAC, weatherization, insulation, windows, etc.) currently participating in the Multifamily Initiative in the Residential and C&I Energy Efficiency Portfolios. Throughout the 2019-2021 Plan, the Companies will continue to develop relationships with various contractors through roundtables, networking events, and contractor meetings. This engagement channel is critical in keeping key industry contractors up-to-date

and understanding of the nuances needed to navigate the tricky path of combining Residential and C&I Energy Efficiency Solutions into one building.

This networking also assists the Companies in understanding new techniques, energy-efficient equipment, and barriers to participation so that the Multifamily Initiative solution can continue to evolve. In 2019-2021, the Companies will continue to promote relationship building amongst implementation contractors and to develop trade ally relationships with equipment and material distributors/manufacturers, and design professional contractors (e.g., architects, engineers, and housing consultants), and lighting contractors. Establishing strong professional relationships with these trade allies will open channels to customers where the Companies may not have otherwise been involved.

One unique delivery approach of the Multifamily Initiative is through a partnership with the DOH and the CHFA. These state agencies provide various rounds of state-approved financing for housing renovations for affordable housing each year. Since 2015, the Companies have enabled project teams involved in these housing renovation projects to integrate energy efficiency plans into their overall project. This in turn, has caused these project teams to think outside-the-box by incorporating unique energy-saving upgrades and by leveraging energy efficiency incentives to do more than what their original funding would have allowed. The Multifamily Initiative will continue this partnership throughout the 2019-2021 Plan.

## FINANCING

As the Multifamily Initiative has developed, the Companies have formed successful relationships with various financing agencies and entities to further diversify financing options for multifamily property owners. This includes agencies that provide public housing financing—the Connecticut Housing Finance Authority (“CHFA”), Connecticut Department of Housing (“DOH”), and the US Department of Housing and Urban Development (“HUD”).

For the 2019-2021 Plan, the Companies will continue to work with the Energy Efficiency Board and the Connecticut Green Bank on optimizing the mix of financing and incentives to make the best use of customer funds. Leveraging Energize Connecticut incentives with low-interest financing can help a property owner afford the capital improvement costs associated with an energy efficiency project. In 2019-2021, the Companies will continue to create collaborative relationships and develop joint collateral with the following entities: Connecticut Green Bank, C4C, DOH, HUD, and CHFA.

Table 2-5: 2019-2021 Residential Energy Efficiency Multifamily Financing Solutions*

| Financing Product | Loan Limits | Terms | Interest Rate | Funding Source |
|---|---|---|---|---|
| Pre-Development Energy Loan | None | Max. 24 months (or upon financing and installation) | 1.99% (for properties* serving limited-income/moderate-income residents)<br>3.99% (for Market-Rate projects) | Energize CT (administered by Connecticut Green Bank) |
| Low-Income Multifamily Energy ("LIME") Loan | None | Up to 20 years, fully amortizing | 300 basis points over C4C's blended cost of funds (currently ~6.00% - 6.99%)* | Energize CT (administered by C4C) |
| Catalyst Financing | None | Up to 15 years | Project dependent* | Energize CT (administered by Connecticut Green Bank) |
| Health and Safety Revolving Fund | $10,000 - $300,000 (waivers for larger loans are possible) | Up to 20 years (plus construction period) | 2.99%* | Energize CT (administered by Connecticut Green Bank) |
| Municipal Loan for Public Housing Authorities (Eversource only) | 0.5% (can be amortized into a loan) | Up to 4 years | 0% financing for Public Housing Authorities | Eversource |
| Multifamily Commercial Loan | $2,000 - $1,000,000 | Up to 5 years | 2.99% up to $100,000 for comprehensive** projects.<br>4.99% up to $100,000 for projects not meeting the comprehensive criteria listed above<br>Market rate interest rates on amounts above $100,000 | Funded by the Companies (administered by Eversource and United Illuminating) |
| C-PACE | No maximum. Loan minimum of $150,000 | 5-25 years | Depends on term | Energize CT (administered by Connecticut Green Bank) |
| Solar Power Purchase Agreement | None | Up to 20 years | No interest rate. A PPA is a service contract. The price per kWh under the PPA can be fixed or escalating | Energize CT (administered by Connecticut Green Bank) |

* To qualify for this loan, at least 60 percent of units must serve tenants at 80 percent of area median income or below.
**Projects implementing more than one measure from a different energy end use, i.e. lighting, heating, cooling).

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## 2.12 BEHAVIORAL-BASED STRATEGIES

### OVERVIEW

The concept behind behavioral-based strategies is that most customers are disengaged from their energy consumption and how much energy their home's equipment (e.g., appliances, electronics, HVAC systems, lighting, etc.) consumes. Behavioral-based strategies are premised on the idea that if a customer is educated regarding how much energy they consume, then they can be encouraged to make a behavior change that will result in energy efficiency.

The Companies' Behavioral-Based Strategies solution is designed to make customers aware of how much energy they consume and empowers them to adopt energy-efficient technologies and behaviors. The primary information channel to residential customers is a behavioral-based communication, printed or electronic, that details: how much energy an individual customer consumes, how they compare to other customers, and what steps they can take to become more energy efficient.

Commonly called a "Home Energy Report," this behavioral-based communication provides easy-to-understand information and graphics to engage customers regarding their energy consumption. Targeted energy efficiency tips are also included in the printed or electronic Home Energy Report to help guide a customer toward engaging in energy conservation, the Companies' Residential Energy Efficiency Portfolios, or the Companies' Customer Engagement Platforms.

Since 2011, the Electric Companies have offered a Behavioral-Based Strategies solution for electric customers. In 2016, the Natural Gas Companies followed suit with the introduction of a natural gas behavioral solution. Currently, the solution accounts for 2 to 3 percent of the overall residential energy savings (electric and natural gas) in the Companies' Residential Energy Efficiency Portfolio.

For the 2019-2021 Plan, the Electric and Natural Gas Companies will continue to implement a Behavioral-Based Strategies solution for their customers. The Companies continue to monitor the marketplace for continued enhancements to behavioral-based strategies and remain focused on providing individualized customer communications in 2019-2021.

### TARGET MARKET

The primary target market for the Behavioral-Based Strategies solution are residential electric and natural gas customers of the Electric and Natural Gas Companies. A target sub-segment of these customers are high energy users, both electric and natural gas customers.

As budgets allow during the 2019-2021 Plan, the Companies may explore targeting additional target customer sub-segments, such as limited-income and hard-to-reach customers who are medium and low

energy users. To maintain the program's cost-effectiveness, the Companies would first target high energy users within these customer market sub-segments who are currently not enrolled and would then target medium and low energy users.

## SOLUTIONS OFFERINGS

For the 2019-2021 Plan, the Companies will continue to target electric and natural gas customers with average and high energy usage throughout the state. To retain as many cost-effective savings as possible considering decreased budgets (due to the legislative diversion) in 2018, the Companies maximized the number of existing report recipients receiving only electronic Home Energy Report. As the budgets increase again in 2019-2021, the Companies may reinitiate sending out more printed reports, as deemed cost-effective, to high and average energy users who have been proven to save more energy because of receiving additional printed communications. The Companies will continue to send electronic reports to low energy usage customers and "engaged customers." Engaged customers are identified as having previously participated in the Companies' Residential Energy Efficiency Solutions or who have active accounts with the Companies' Customer Engagement Platforms.

Due to the legislative diversion of Energy Efficiency Fund budgets affecting 2017-2018 program budgets, the Companies had to reduce the number of participants in their behavioral-based solutions. In 2018, Eversource (electric) reduced the number of customers receiving Home Energy Reports from 300,000 to 100,000 customers, and reduced Eversource (natural gas) participants from 100,000 to 30,000. United Illuminating ceased conducting its Behavioral-Based Strategies solution for electric customers in 2018 due to the budget reductions. In 2018, CNG and SCG had to reduce their number of participants to only 20,000 natural gas customers.

As budgets increase again for the 2019-2021 Plan, the Companies will look to reengage previous and new participants by delivering behavioral-based communications (printed or electronic) where deemed cost-effective.

### 2019-2021 Enhancements

*Delivering Customized Communications*

As noted in Section 2.1, the primary focus of the Companies' Residential Energy Efficiency Portfolio is the customer. Residential customers want more personal and custom-tailored reports, tips, and communications that address how they (as individuals or households) specifically consume energy and what energy-efficient improvements are needed for their home.

To address customer demand, the Companies will look to refine the Behavioral-Based Strategies solution to actively target customers with specific-to-them suggested behaviors and actions that are linked to measurable energy savings. For example, a single-family homeowner living in the suburbs with

three children consumes energy very differently from a single person living in an urban apartment. Having the same communication sent to both homes does not provide either customer with a custom-tailored solution that addresses their individualized energy needs.

*Customer Engagement Platforms*

Behavioral-based communications must be relevant to the individual customer. During the 2019-2021 Plan, the Companies' Behavioral-Based Strategies solution will look to gather and utilize more targeted demographic customer data from their Customer Engagement Platforms and other third-parties to address individual customer's energy needs. Please see Chapter Six: Customer Engagement Platforms for more information.

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## 2.13 ACTIVE DEMAND REDUCTION STRATEGIES (RESIDENTIAL)

### Eversource Demand Reduction Strategies

Eversource has dedicated resources throughout 2017 and 2018 toward testing and evaluating active demand reduction technologies and demand response initiatives for the Residential marketplace. During the 2019-2021 Plan, Eversource will use the knowledge gained from its 2018 Demand Response pilots to construct permanent offerings that incentivize active demand reduction strategies and measures that enable them. These offerings could include but are not limited to: traditional demand response direct-load management, software, and controls. Eversource would expand its efforts through new customers and emerging controllable equipment and manage these demand reduction assets through the use of innovative control structures that will allow Eversource to coordinate dispatches.

### United Illuminating Demand Reduction Strategies

During the 2019-2021 Plan, United Illuminating will transition its active demand response pilots into full-fledged solutions, while adding new customers and additional controllable demand reduction technologies. The continuation of the existing pilots as programs during the 2019-2021 Plan is a critical step in understanding local demand response markets and in starting the logical process of integrating demand response and energy efficiency tactics into one comprehensive offering to increase the value to customers and decrease costs to United Illuminating. These demand response programs will allow United Illuminating to gather additional event data to better assess and to quantify the potential active demand reductions associated with each demand response technology and/or strategy and any associated energy savings.

### Common to Eversource and United Illuminating

Not limited solely to summer peak demand reductions, the Companies' Active Demand Response ("ADR") solutions can be useful for ramping (ISO-NE dispatch only), load curtailment, operational needs and shortage events, as well as winter demand reduction needs. Automation and advances in technology make it possible to manage customer loads in new ways with strategies that bring additional values to the Companies and the customer.

Where possible, all Demand Response solutions will be integrated and co-delivered with the Companies' existing Residential Energy Efficiency Portfolio offerings to increase the value to customers and decrease costs to Eversource and United Illuminating. During the implementation of these solutions, the Companies understand that customer education regarding Demand Reduction solutions is imperative. Throughout the 2019-2021 Plan, Eversource and United Illuminating will look to educate customers

regarding the benefits of Demand Response solutions, the demand reduction technologies used, and the financial incentives and rebates that will be offered.

## 2019-2021 Residential Demand Response Solutions

For the 2019-2021 Plan, the Electric Companies will use their Demand Response solutions to assess active demand reduction (kW) of each program, customer participation rates vs. opt-outs, and customer satisfaction and engagement with the solution(s). For the 2019-2021 Plan, the Companies will implement the following Residential Demand Response solutions:

- **Connected Wi-Fi Thermostats & HVAC Systems**

  This "Bring Your Own Thermostat" initiative will incorporate the next generation of connected Wi-Fi thermostats in order to empower and engage customers with demand response programs. The Companies will have remote controllability of customers' HVAC system temperature set points and schedules, and customers will have a better understanding and control of their energy usage.

  The target market is all residential electric customers who have central HVAC systems that provide air conditioning in their homes. The Companies will offer their program to: (1) any existing customers with a qualifying connected Wi-Fi thermostat, and (2) HES and HES-Income Eligible participants as an add-on measure. To encourage participation, the Companies will host educational sessions for HES and HES-Income Eligible contractors regarding the benefits of the technology, who qualifies, and how a customer can take advantage of the incentive offering.

  Qualifying customers will receive a one-time enrollment incentive and an annual demand response participation incentive (per qualified thermostat). This is in addition to an Energize Connecticut rebate that will continue to be offered through the HES solution for qualified thermostats. The demand response enrollment incentive will be tied to confirmation of successful enrollment in Eversource's or United Illuminating's program; rather than tied to the purchase of a connected Wi-Fi thermostat itself. This validates that the customer has properly installed the device and enrolled in the program, thereby minimizing the risk of leakage to other utility service territories.

- Wi-Fi-Enabled Room Air Conditioners

  This is an additional demand response initiative for the Companies to pursue during the 2019-2021 Plan. The Companies will follow manufacturers' advances in Wi-Fi-enabled window air conditioners units. As the costs for these units go down, the Companies could cost-effectively provide window air conditioner units at little or no cost to qualifying limited-income customers.

During the 2016-2018 Plan, United Illuminating collected data and analyzed the results and cost-effectiveness of its Room A/C Smart Plug pilot. This pilot tested the effectiveness of a smart plug utilized between a customer's window Room A/C unit and the wall plug. In the fall of 2018 (after third summer of calling events), United Illuminating's benefit-cost analysis determined that the pilot was not cost-effective. The key factor was the low installation and reinstallation rates of the smart plug with the window Room A/C unit and the cost of continual customer engagement to reinstall the smart plug with the Room A/C in subsequent cooling seasons. Wi-Fi-enabled window Room A/Cs would resolve the issue where the current smart plug and window Room A/C units are separated at the end of each season, thus increasing the chances that they will not be re-installed together at the start of the next cooling season.

- Wi-Fi-Enabled Heat Pump Water Heaters

Similar to connected Wi-Fi thermostats, manufacturers are beginning to offer new models of HPWHs that have the option of being Wi-Fi-enabled. These new HPWH models would allow for easy pairing with the Companies' residential Demand Response portals and can offer the Companies the ability to pursue additional demand reduction opportunities.

For the 2019-2021 Plan, United Illuminating will look to expand upon its current pilot marketed through the HES-Income Eligible solution by adding additional customers to its population of controlled HPWHs. Qualifying customers will receive a free installed Wi-Fi-enabled HPWH and be enrolled in the initiative. In 2019-2021, United Illuminating will also explore the potential of a market-rate Wi-Fi-enabled HPWH offering with point-of-purchase rebates and automatic enrollment (customer and HPWH unit) into the Demand Response initiative. For the 2019-2021 Plan, Eversource will explore introducing a similar promotion through the home energy performance solutions—HES and HES-Income Eligible.

During the 2019-2021 Plan, the Companies will also explore other market entry points, such as instant rebates for specific Wi-Fi HPWHs at big-box retail stores. The integration of these additional market-rate Wi-Fi HPWHs into the Demand Response portals is the next logical step in supporting the continued growth of new smart appliances. The Wi-Fi HPWH is the first smart appliance that was added to the Companies' existing Demand Response portals other than Wi-Fi thermostats. The Companies hope this portal and network of smart and connected devices will continue to enable quick and successful launches of future demand response efforts for smart appliances and connected equipment.

- Peak Time Rebate Pilot (United Illuminating)

United Illuminating's Peak Time Rebate ("PTR") two-year pilot will end in the spring of 2020. The PTR pilot rewards customers based on the amount of energy that they reduce in their homes

during peak events, which are typically during the summer and winter seasons when the local electric distribution systems may be under stress due to high electrical usage.

The pilot will provide 10,000 United Illuminating customers with messaging and a PTR to encourage customer participation and additional reductions beyond that of a standard behavioral demand response ("BDR") program. Incentives per event are based on event reductions and rebates will be paid to customers at the end of each summer and/or winter season. Customers can choose their level of participation, including: simply turning off lights, increasing their air conditioner temperature settings by several degrees, shifting load to a later time of the day to turn off all loads, and/or going outside with the family for a hike.

Event days will be called at United Illuminating's discretion based on ISO-NE Seasonal Peak Hours and/or predicted high loads on United Illuminating's electrical distribution systems. It is anticipated that approximately six (two summer events and four winter events) will be called on average. Baseline usage is simply calculated using 15-minute interval data and is the mean ten-of-ten or the average of the past 10 days (non-weekend and holidays). For each hour that they achieve their goal, the customer's incentive earned will increase.

### Additional Demand Reduction Opportunities

During the 2019-2021 Plan, the Companies will also explore the demand reduction opportunities and potential associated with EV chargers, as well as the integrated operation and value of all controllable demand response loads to their distribution systems.

For the 2019-2021 Residential Energy Efficiency Portfolio, United Illuminating will also evaluate additional demand reduction strategies, including but not limited to: online energy marketplaces and online platforms for competitive demand response program participation. Online energy marketplaces are becoming increasingly commonplace in the utility industry and offer personalized retail centers for customers to buy rebate-eligible and discounted efficiency products from a utility-branded site. Additionally, these marketplaces provide the functionality for customers to enroll in demand response programs simultaneously while purchasing connected Wi-Fi thermostats or other demand response products. Products such as connected Wi-Fi thermostats are typically discounted, can decrease free ridership, and can increase demand response program participation with auto enrollment at the time of check out.

During the 2019-2021 Plan, United Illuminating will explore online platforms that encourage competitive demand response participation. These social media feedback systems for behavioral demand reduction strategies, such as PTR programs, allow customers to compete with their friends online to reduce their energy use during peak demand days, while sharing their results daily on a social gaming application. Online platforms that promote competitive demand response program participation (i.e., games or

competitions) hold the potential for increased demand reductions; compared to those programs where customers install a demand response device but did not participate in a social media or competitive game aspect.

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## 2.14 WORKFORCE DEVELOPMENT & TRAINING

For the 2019-2021 Plan, the Companies will continue to provide and support workforce development for its Residential Energy Efficiency Portfolio vendors, contractors, trade allies, and stakeholders. The Companies recognize the importance of workforce development to drive energy efficiency savings and successes in the Residential Energy Efficiency Portfolio. Professional development and trainings will be coordinated through the Companies' Workforce Development efforts (see Chapter Four) and the Companies will encourage the use of the Energize Connecticut Center, located in North Haven, Conn., as a training location for 2019 workforce development efforts.

The Companies require HES and HES-Income Eligible vendors to have the most up-to-date training regarding building science and design, high-efficiency HVAC and DHW equipment installation, lighting design, emerging technologies, and home performance services. In 2019-2021, the Companies will continue to coordinate with trade allies to facilitate training opportunities for HES and HES-Income Eligible contractors including, but not limited to: Building Performance Institute certifications (e.g., Building Analyst, Home Energy Professional), DOE Home Energy Scorecard Qualified Assessor, financing workshops, and health and safety barrier training.

For the 2019-2021 Plan, the Companies will promote health and safety training for home performance services contractors, particularly regarding the proper steps to weatherize a home after a health and/or safety barrier has been identified. For the 2019-2021 Plan, the Companies will also explore offering the BPI Healthy Homes Evaluator certification in coordination with trade allies or community colleges, and potentially promote this certification to contractors providing initial home performance services to customers or other contractors involved in providing weatherization services to customers. This promotion would be designed to demonstrate the Companies' support of the state-managed, DOE-funded WAP program's new policies regarding contractor training requirements while balancing the recognition that not all home performance services contractors need to be certified BPI Healthy Homes Evaluators.

For the New Construction, Additions & Major Renovations marketplace is continuously evolving and adopting new building standards and practices. As such, for the 2019-2021 Plan, the Companies will continue to offer trainings, including code compliance (for 2015 IECC) and HERS Ratings, to builders and the construction community. The Companies will extend educational opportunities and trainings regarding high-efficiency building standards and practices beyond the new construction marketplace to the real estate, home inspection, and appraisal communities. This educates additional Connecticut communities about the benefits of energy efficiency and about energy ratings (e.g., HERS), building certifications, and code standards.

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## 2.15 TIME-OF-USE ADOPTION PILOT (UNITED ILLUMINATING)

During the 2019-2021 Plan, United Illuminating will work with a third-party company to develop a Time-of-Use ("TOU") Adoption pilot to assist customers regarding how to use electricity rates that will vary by time of day, in an attempt to shift energy use to off-peak hours when the electric grid is less stressed. On February 6, 2019, AVANGRID Networks companies (which includes United Illuminating, CNG, and SCG) issued an RFP seeking proposals to provide residential and C&I customers with an online Energy Manager customer portal to view customer usage reports, comparisons, savings tips, and other related services. This RFP included United Illuminating. This Energy Manager Application will provide a web portal for electric and natural gas customers to understand and manage their energy usage.

Currently, each of AVANGRID's Operating Companies ("OpCos") works with separate vendors to provide an Energy Manager portal. This Request for Proposal is to select a vendor that will provide an Energy Manager portal consistent for customers across all OpCos. Specifically, the Energy Manager application will manage Smart Rates presented to customers to encourage them to make behavioral changes to manage their energy consumption. United Illuminating is requesting that the launch of the proposed TOU pilot be delayed until after the awarded bid is granted in August 2019, in an effort to offer a turn-key solution to our customers. In 2020, this TOU Adoption pilot will be made available to all *Rate R* customers who are identified as customers with a high potential to save by switching rates and to all existing *Rate RT* customers.

The pilot will look to identify the best Rate R customers for targeting Rate RT adoption messages while also assisting existing Rate RT customers in maximizing their TOU rate. The TOU Adoption pilot will leverage the data that is captured from smart meters to: (1) increase TOU adoption rates for a certain segment of United Illuminating's customers, (2) maximize load shifting potential of customers on the existing TOU rate plan, and (3) increase customer satisfaction and engagement with new offerings and tools.

The marketing and outreach campaign will focus on customer engagement messaging that highlights the benefits of participating in the pilot, including these messages:

1. Take advantage of lower rates during off peak hours;
2. Take control of your electricity costs;
3. Manage your energy use; and
4. Contribute to a cleaner environment.

The marketing strategy will include behavioral messaging and will look to leverage multiple channels of communication with customers.

### Features of the Pilot

- Identifying the best customers for TOU rates;
- Targeted marketing to maximize TOU rate enrollments;
- Maximize load shifting to off-peak for residential customers already on TOU;
- Provide proactive and personalized insights for customers on an existing TOU rate plan to help them shift loads; and
- Designed for the residential customers with interval meter reads.

### Functionality

United Illuminating is still developing and finalizing the details of the pilot; however, the pilot will feature a "*Wait till Eight*" style campaign so that customers shift their use of energy intensive appliances (e.g., washing machines, dishwashers, and other larger appliances) and their charging of electric vehicles from peak to off-peak times and see the benefits of lower-priced energy.

### Customer Selection and Recruitment Considerations

United Illuminating will utilize the following recruitment strategies to encourage customers to sign-up for the TOU Adoption pilot: direct mail, bill inserts, e-mail solicitation, brochures, print ads, and web-based marketing. Other considerations for recruitment may include opt-in and default enrollment processes.

United Illuminating will also consider a battery storage component within the TOU Adoption pilot to provide customers with additional opportunities to shift load and reduce costs. United Illuminating will look to provide pilot participants with an incentive per kW of installed battery capacity to encourage the installation and use of this energy storage technology. In addition to maximizing the value of the TOU rate by charging the battery during off-peak hours and using its capacity during peak hours, batteries will give customers the additional security of backup power during times of power outages.

United Illuminating will work with its demand response vendors to develop the ability to control battery customers as part of its current Demand Response programs. Customers would then have the ability to reduce load on the local electric grid during times of high system stress, while earning additional incentives based on the load reduced or shifted during the summer and winter demand response events.

## 2.16 MARKETING COMMUNICATIONS

### SITUATIONAL ANALYSIS

In response to the diversion of funding announced in October 2017, broadcast and large-scale digital advertising promotions for in-home services were curtailed or limited in the 4th quarter of 2017 and throughout 2018 to extend the length of time programs could stay active. The Companies transitioned to more geographically-targeted advertising and continued to pursue public relations and social media opportunities. The diversion of funding created a messaging challenge. It was necessary to let customers and trade allies know that limited resources were still available, but ongoing media stories about the State budget and the impact on the Energy Efficiency Fund created public uncertainty initially, decreasing over time.

### MARKETING COMMUNICATIONS PRIORITIES

The overarching communications theme for the residential sector focuses on how customers use energy and the benefits of energy efficiency expressed through messaging around improved technology, lifestyle and the value of investing in your home.

a. Home Performance Services (HES and HES-Income Eligible). The increase in the HES co-pay in 2016 and 2017, and again in 2018 for oil and propane customers, necessitated a stronger emphasis on the tangible services provided during the in-home visit (i.e., "it's not just an assessment"). That messaging strategy will continue in 2019-2021, stressing the value of those services, which far exceeds the co-pay and includes non-energy benefits such as comfort, health, safety, reliability, performance, convenience, and improved air quality. Additionally, the messaging will have a stronger emphasis on performance, expressed through the benefits of a "connected," "smart-energy" home.

   In support of the transition to an open-market program for HES with more business partners providing the services, the Companies' marketing teams will continue to make customizable materials available to those partners via the on-line Distribution platform.

b. Consumer Products. As described earlier in this chapter, more products are moving "upstream" or are available via an online platform (lighting, controls, natural gas HVAC, air and ground-source heat pumps). While this makes energy-efficient products much more accessible at the point-of-purchase (at stores, at a distribution level, and at the electronic shopping cart), marketing communications needs to drive the demand for these products through a two-prong approach (push-pull) to two separate audiences.

i. *Channel marketing to the design-build community and installers:* Both before the purchase decision is made, or after the contractor arrives at the distribution pick-up counter (pull marketing), and at the point-of-purchase (push marketing).

ii. *Consumer marketing to residential end users:* To make them aware and asking for the products via education and awareness before they need to purchase (pull marketing) and at the point-of-purchase (push marketing – at retail locations or by having the contractor recommend).

c. Multifamily Initiative. The messaging will support the go-to-market strategy that leverages partnerships with contractors, developers, and property managers. These partnerships are both the Companies' primary audience and the means to deliver value messaging to tenants. In other words, marketing is primarily addressed to the trades allies to make them aware of the resources that will improve their capital investment, reduce their operations and maintenance expenses, and facilitate improvements that will attract and retain tenants.

d. New Construction, Additions & Major Renovations. The messaging for this solution is also primarily directed toward contractors, as the design-build community typically has the most touch points with customers building new homes. The messaging over the years has evolved from mostly inspirational ("look what's coming") to aspirational ("you can do this too"), and the promotion of the CT Zero Energy Challenge has been the primary vehicle to convey that message. Working with organizations such as the Connecticut Green Building Council, marketing will continue to focus on the ZEC to highlight technology to the design-build community and directly to potential residential end-use customers via public relations and publication of case studies.

## MARKETING COMMUNICATIONS MIX (2019-2021)

Table 2-6 on the next page shows the potential marketing communications mediums that may be employed during the 2019-2021 Plan timeframe, along with the appropriate audience, the measures promoted, and the high-level objective of the tactic. The extent that these mediums will be used is dependent on what is needed at any given time to achieve the Companies' energy-saving and participation goals.

Table 2-6: 2019-2021 Marketing Communications Mix for Residential Energy Efficiency Portfolio

| Medium | Audience | Objective | Measures and Activities Promoted (potential) |
|---|---|---|---|
| Radio Advertising | Mass Residential Market, minimal audience differentiation | Value of energy efficiency ("EE"), measure/solution-specific: General awareness focus on the value proposition | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services |
| Print Advertising | English and Non-English speaking residential, contractors, and architects | Value of EE, measure/solution-specific: General awareness focus on the value proposition | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services |
| Digital Display Advertising (Advertising on Websites) | Targeted residential | Value of EE, measure/solution-specific: Lead generators | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services |
| Paid Online Search | Targeted residential | Solution-specific, increase user ability to connect with energy-saving resources | Keyword bid terms include: technology, equipment, behavior, environmental, save money, and home improvement |
| Public Relations | Targeted residential, legislative, trade allies, and associations | Value of EE, measure/solution-specific: focus on the value proposition. Tell the energy efficiency story via real-life examples | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services, Multifamily Initiative, events, awards/recognition, and new construction |
| Direct Response | Targeted residential, trade allies, and associations | Solution Specific, utilizing traditional mail, email, and Customer Engagement Platform tools: lead generators | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services, Multifamily Initiative, events, awards/recognition, and new construction |
| Paid Social Media Advertising | Mass Residential Market | Value of EE, measure/solution-specific: focus on the value proposition. Foster dialogue, interest, and community | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services, Multifamily Initiative, events, awards/recognition, and new construction |
| Events | Targeted residential, associations and trade allies | Value of EE, measure/solution-specific: focus on the value proposition. Lead generation when possible. Foster dialogue, interest, and community | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, HES direct-install and income-eligible services, Multifamily Initiative, events, awards/recognition, and new construction |
| Co-op | Targeted residential via Preferred Contractors | Value of EE, measure/solution-specific: lead generators | Insulation, natural gas HVAC and low-carbon heating technology, LED lighting, Controls, and Home Energy Solutions direct-install services |
| Point-of-Purchase | End-use customers, trade allies, facilities, property managers | Awareness of product features, discounts and availability | Eligible Equipment |

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# CHAPTER THREE: COMMERCIAL & INDUSTRIAL ENERGY EFFICIENCY PORTFOLIO

## 3.1 OVERVIEW

For more than 20 years, the Companies have delivered innovative and cost-effective energy efficiency programs to commercial and industrial ("C&I") customers across Connecticut. The Companies' C&I Energy Efficiency Portfolio is nationally-recognized by the EPA and DOE for its tailored customer solutions, comprehensive outreach to targeted C&I market sectors, and for significantly reducing GHG emissions in the state. Additionally, for the past decade, the ACEEE has consistently ranked Connecticut as a top 10 state for its energy efficiency policies and programs.

During the 2016-2018 Plan, the Companies laid the groundwork to begin a paradigm shift in the way they address C&I customers; making the C&I Energy Efficiency Portfolio customer-centric rather than program-oriented. This shift involves significant market research by the Companies to not only identify C&I customer market segments that needed targeted energy efficiency assistance but to also understand what market actions, technical support, energy-efficient equipment, process improvements, and financing mechanisms best suit that customer's business needs and market segment.

The Companies plan to continue utilizing market segmentation to tailor solutions and efficiency efforts throughout the 2019-2021 Plan. The Companies will also introduce several new market segments for the 2019-2021 Plan, including: (1) Aerospace and Defense, (2) Information, Communications, and Technology, (3) Distribution, Fulfillment Centers & Warehousing, and (4) Utilities and Transportation.

Additionally, during the 2016-2018 Plan, the Companies recognized that to better understand how a market segment operated, and what its energy needs were, that they would need expertise from associations, organizations, and groups that worked with, or represented, the market segment. From 2016-2018, the Companies made significant strides in establishing trade ally networks by recruiting, training, qualifying, and managing networks of trade allies (distributors, contractors, and installers) and partnering them with trade and professional associations to encourage comprehensiveness in energy efficiency projects.

For the 2019-2021 Plan, the Companies will focus their Trade Ally Networks strategy on quality and effectiveness and will deepen partnerships that they *need* to stimulate comprehensive energy efficiency projects. The Companies will also focus on promoting networking events between Trade Ally Networks, such as solutions-based roundtables, to drive comprehensive energy savings. The rest of Chapter Three details the key themes and designs for C&I Energy Efficiency Solutions that will drive customer

engagement, reduce GHG emissions, and optimize energy savings in the 2019-2021 C&I Energy Efficiency Portfolio.

## 3.2 KEY C&I THEMES OF 2019-2021 Plan

For the 2019-2021 Plan, the Companies remain focused on delivering a comprehensive C&I Energy Efficiency Portfolio to all market segments, including the priority markets identified in Section 3.16 (Commercial) and Section 3.17 (Industrial).

The 2019-2021 Plan for C&I Solutions has four broad themes:

1. Conducting granular market segmentation research to aid in the development of effective market-segmented and comprehensive approaches to service delivery.
2. Offering packaged marketing and tailored comprehensive solutions that meet the energy needs of the individual customer or market segment.
3. Developing a C&I Advanced Lighting Strategy that uses connected lighting systems, advanced lighting controls, and emerging LED technologies as a ubiquitous platform for advanced services and analytics.
4. Establishing the Companies as the primary informational conduit for any C&I customer or market segment interested in pursuing energy efficiency, renewables, and sustainability projects.

## 3.3 PROCESS FOR CONTINUED IMPROVEMENT

The Companies are continuously seeking ways to improve the design and delivery of the C&I Energy Efficiency Portfolio and to engage customers with innovative and tailored solutions, emerging technologies, and offerings. As active members of local, state, and national boards and organizations, the Companies actively participate in reviewing industry best practices, reviewing conference proceedings and papers from energy efficiency organizations (e.g., ACEEE or AESP), staying up-to-date on emerging technologies, and learning about new program improvements. This involvement is due to the Companies' commitment to continued improvement in delivering cost-effective and innovative energy efficiency programs to Connecticut's C&I customers.

Additionally, during the 2019-2021 Plan, the Companies will look to engage more marketing of the state's energy efficiency programs and financing opportunities through their Customer Engagement Platforms.

In addition to their involvement in the energy efficiency industry, the Companies have developed extensive Trade Ally Networks and close trade ally partnerships with contractors, distributors,

manufacturers, retailers, and stakeholders. These working partnerships help the Companies to effectively develop and implement cost-effective strategies and to adjust the design of energy-saving solutions to proactively respond to the ever-evolving C&I energy efficiency marketplace.

A critical aspect to the Companies' commitment to continued improvement is the independent third-party evaluation process for Connecticut's energy efficiency programs. Managed by the Energy Efficiency Board, this independent evaluation process determines the efficacy of the Companies' C&I Energy Efficiency Portfolio. Once completed, evaluation findings and recommendations assist the Companies in determining the "lessons learned" and the process modifications needed to improve the delivery of a C&I Energy Efficiency solution.

In addition to these third-party evaluations, the Companies periodically review other states' ongoing energy efficiency activities to determine if some of these efforts can be integrated into Connecticut's C&I Energy Efficiency Portfolio. These states include, but are not limited to: California, Massachusetts, New York, Oregon, Rhode Island, and Vermont. The programs in these states are very similar in design to Connecticut's programs, and the market dynamics of the C&I marketplace have many more commonalities than differences.

## 3.4 C&I ADVANCED LIGHTING STRATEGY

### Overview: Rapidly Changing Market Conditions & Technology Improvements

The Companies recognize that LEDs are rapidly becoming the default lighting technology for energy efficiency projects and that at some point in the near term will not provide the C&I Energy Efficiency Portfolio with sustained energy savings. Additionally, lighting codes and standards may be changed through federal or state legislation and/or regulatory processes that could significantly change and impact the Companies' baseline assumptions for lighting technologies and watts per square foot of lighting. To meet this pending challenge, the Companies have designed a C&I advanced lighting strategy for the 2019-2021 Plan that uses connected lighting systems, advanced lighting controls, and emerging LED technologies (e.g., organic LEDs) as a ubiquitous platform for advanced services and analytics.

Connected lighting systems ("CLS") are advanced lighting systems that may be enabled to track energy and demand consumption, provide real-time status updates, support Wi-Fi-enabled remote-control capabilities (through devices such as smart phones and tablets), and estimate cost savings. These advanced technologies could become data-collection platforms that enable greater energy savings for internal and external lighting energy savings in buildings and cities. CLS utilize five control strategies: (1) time scheduling, (2) task tuning, (3) daylight harvesting, (4) programmed occupancy sensing, and (5)

demand response.[33] CLS offer real insight into the "after the meter" energy use in a C&I building and the Companies recognize their potential for providing significant energy savings, demand management, and mechanical system integration (e.g., occupancy demand control ventilation using CLS occupancy sensors).

These systems still provide efficient lighting that saves energy; however, these "smart" technologies also optimize lighting intensity to the real-time needs of a space as decided by a building's occupants, or by other monitored variables such as available daylight, the occupancy/vacancy status, and patterns within a space. For example, a CLS may detect that certain areas of a building are unoccupied during early morning hours and establish an automated lighting schedule based around recorded data that observes workers in those building areas arriving for the day between 9:00 am and 9:05 am. The CLS will schedule the LEDs to turn on at approximately 9:00 every morning. If the CLS "senses" an occupant's early arrival at 8:00am, it will adjust to meet the real-time use.

Advanced lighting control systems ("ALCS") are networked controlled lighting devices (e.g., daylight harvesting, dimming, occupancy sensing, and schedules) that allow facility managers to monitor data and determine effectively how to integrate stand-alone lighting components (e.g., bulbs and fixtures) to enable deep lighting energy savings. Over the past few years, the Companies have worked with the Design Lights Consortium ("DLC"), a non-profit organization whose mission is to drive efficient lighting, and their Efficiency Forward initiative to address market barriers and enable widespread adoption of ALCS technologies in C&I buildings. A majority of manufacturers have opted to comply with DLC-recommended standards set for both LED luminaires and ALCS.

### Market Potential of ALCS and Challenges for Realizing ALCS Energy Savings at Scale

In September 2017, the DLC and Energy Solutions issued a report titled "*Energy Savings from Networked Lighting Control Systems*" ("NLC Report"). The Companies will utilize the NLC' Report's relevant observations, findings, and/or recommendations to help them develop and deploy an effective lighting strategy in 2019 and beyond. The integration of the NLC Report's finding will helpfully help promote and achieve successful customer implementation of ALCS as a more frequent element of energy efficiency projects undertaken through the Companies' C&I Energy Efficiency Solutions.

The discussion which follows relies heavily upon a collection of many excerpted observations, conclusions, and recommendations from the aforementioned DLC Report. For discussion purposes, the terms—NLC, ALCS, and CLS may be used interchangeably herein.

[33] E-Source. *Advanced Lighting for the C&I Facility of the Future*. Dec. 20, 2015. Available at: https://www.esource.com/es-blog-12-20-15-ci-lighting/advanced-lighting-ci-facility-future.

CLS currently comprises less than one percent of all luminaires in the United States; however, the DOE estimates that it represents up to 45 percent of total lighting energy savings potential.[34] By 2035, the DOE estimates more than a third of installed luminaires in C&I buildings will have network connectivity.[35] These estimates make it clear that CLS is a large addressable market from which to obtain energy savings; yet the pace of adoption of luminaires with network connectivity is not projected to move very quickly without some market stimulating intervention. The Companies may be able to offer some such effective market invention through their C&I Energy Efficiency Solutions' design and implementation.

The DLC Report was a research project that collected, aggregated, and analyzed zone- and fixture-level energy monitoring interval data from NLC systems installed in 114 buildings across a variety of building types in North America, represented over 1,200 zones, and had an average of 60 days of monitoring data per building. Overall, the DLC Report found average energy savings from NLCs to be 47 percent, although values are highly site-specific and space-type dependent.

Table 3-1: Energy Savings from Networked Lighting Control Systems [36]

| Building Type | Total Buildings | Unique Manufacturers | Control Factor (% savings) | |
|---|---|---|---|---|
| | | | Average | 25th – 75th Percentile |
| Assembly | 5 | 1 | 0.23 | 0.10 – 0.29 |
| School | 7 | 1 | 0.28 | 0.09 – 0.57 |
| Manufacturing | 28 | 3 | 0.30 | 0.09 – 0.43 |
| Retail | 29 | 1 | 0.44 | 0.39 – 0.49 |
| Restaurant | 2 | 1 | 0.47 | 0.41 – 0.53 |
| Office | 39 | 3 | 0.63 | 0.43 – 0.82 |
| Warehouse | 4 | 2 | 0.82 | 0.78 – 0.85 |
| Overall | 114 | 5 | 0.47 | 0.28 – 0.76 |

[34] DOE, 2017.
[35] DOE, 2016.
[36] DLC Report. "Energy Savings from Networked Lighting Control (NLC) Systems," DesignLights Consortium and Energy Solutions; September 21, 2017)

Figure 3-1: Energy Savings from Networked Lighting Control Systems[37]

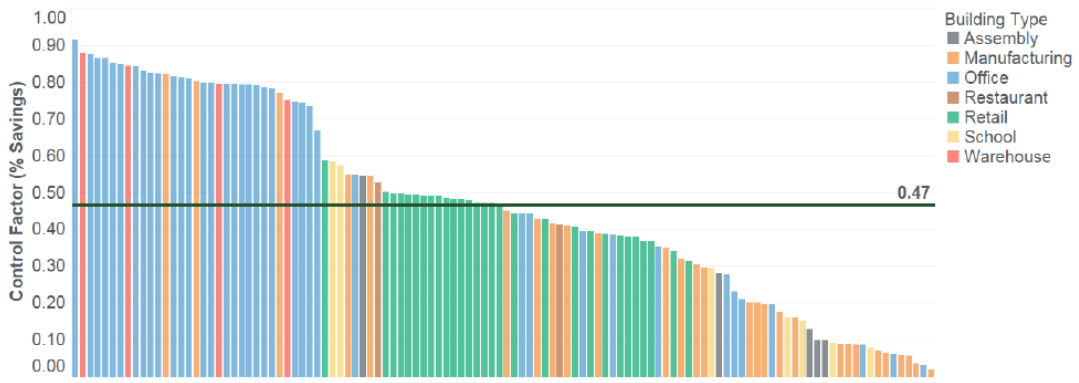



Table 3-2: Energy Savings from Networked Lighting Control Systems[38]

| Building Type | Space Type | Total Buildings | Unique Manufacturers | Control Factor (% savings) | |
|---|---|---|---|---|---|
| | | | | Average | 25th – 75th Percentile |
| Office | Open Office | 5 | 2 | 0.63 | 0.38 – 0.81 |
| | Entrance | 1 | 1 | 0.73 | - |
| | Private Office | 11 | 2 | 0.75 | 0.74 – 0.85 |
| | Hallway | 11 | 2 | 0.76 | 0.77 – 0.85 |
| | Break | 5 | 1 | 0.82 | 0.79 – 0.84 |
| | Storage | 9 | 1 | 0.86 | 0.81 – 0.91 |
| | Restroom | 10 | 1 | 0.86 | 0.84 – 0.87 |
| | Conference | 1 | 1 | 0.90 | - |
| Warehouse | Office | 1 | 1 | 0.59 | - |
| | Warehouse | 1 | 1 | 0.79 | - |
| Manufacturing | Break | 1 | 1 | 0.36 | - |
| | Work | 1 | 1 | 0.38 | - |
| Retail | Office | 1 | 1 | 0.46 | - |
| | Stock Room | 1 | 1 | 0.53 | - |
| | Rest Room | 1 | 1 | 0.76 | - |
| | Stock Room | 29 | 1 | 0.28 | 0.27 – 0.30 |
| | Retail Sales | 29 | 1 | 0.36 | 0.31 – 0.43 |

[37] Design Lights Consortium and Energy Solutions. NLC Report: "Energy Savings from Networked Lighting Control (NLC) Systems," Sep. 21, 2017.
[38] Design Lights Consortium and Energy Solutions. NLC Report: "Energy Savings from Networked Lighting Control (NLC) Systems," Sep. 21, 2017.

Although this analysis of a portfolio of ALCS projects in different commercial building types suggests that energy savings of 47 percent are achievable, the results vary highly by the building and space types involved in the ALCS project application. This high variance challenges program design and implementation because wide differences in energy savings potential (and concomitant variability in project economics) for a given ALCS/NLC system due to dependence upon the building and/or space type of the application leads to a need for highly-focused efforts in marketing communications and customer engagement to facilitate implementation of energy-saving projects.

As the DLC Report notes, there are two major drivers of NLC energy savings within a building, both of which are often relatively independent of building or space type: [39]

- Site Characteristics and Occupancy Patterns. While there is generally some degree of similarity within building types, actual site characteristics are one of the greatest drivers of NLC energy savings, as they interact with settings for the enabled features. NLC systems produce the greatest savings at sites with long-operating hours, large swings in occupancy throughout the day, and that are less than 100 percent occupied, resulting in lower overall traffic. Daylighting has an important but often secondary influence on energy savings.
- Control Strategies Enablement and Control Settings. Energy savings are highly dependent on which control strategies are enabled and the specific settings to which each control strategy is set. For example, enabling and implementing high-end trim has a tremendous impact on energy savings. Similarly, one-minute occupancy timeouts deliver significantly greater savings than 15-minute timeouts. However, proper commissioning is critical to achieving energy savings. If configured improperly, NLCs can have minimal impact and even increase energy use in some cases.

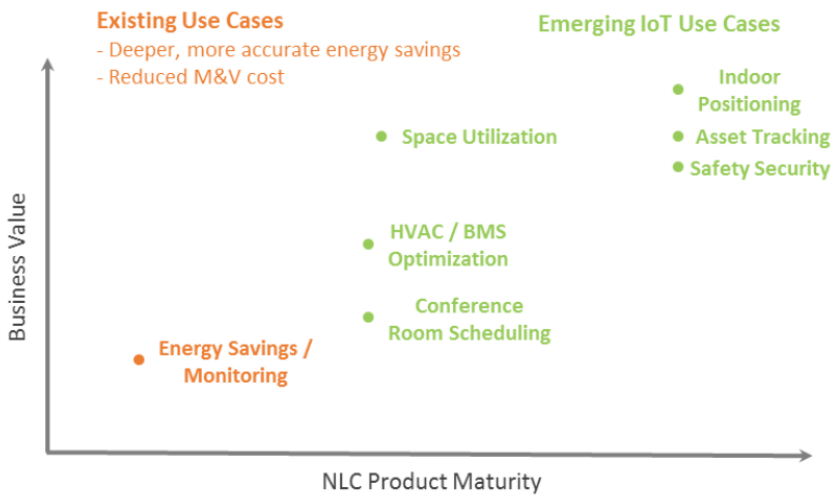
  Although NLCs are expected to be a major driver of future energy savings, historically, the impact of lighting controls has been difficult to measure at scale. The foregoing observations highlight the large degree of variability that tends to be a characteristic factor of the ability to realize energy savings potential from NLC/ALCS in a specific project. Among the most notable factors impacting the realization of energy savings are:

  - Fixed site characteristics such as building type and space type;
  - Flexible site characteristics related to usage of the site in terms of hours of occupancy and patterns of occupancy; and

[39] Williams et al. 2011; Asif ul Haq et al. 2014.

- Choice of which control settings are present and enabled as a control strategy using various input variables in the NLC/ALCS implemented at a site.

Figure 3-2: Energy Savings from Networked Lighting Control Systems[40]




Lighting systems as an installed technology base are ubiquitous in C&I buildings with electric service provided to a vast array of discrete locations within a space. This feature enables the lighting infrastructure of the short-term future to evolve into a distributed platform base for other value-added systems and services to be added to and integrated into; thereby making the package of features more robust in its appeal to C&I customers since it encompasses more than energy savings.

The Companies recognize and accept that many C&I customers assess value in their investment returns beyond energy savings. The non-energy benefits to a customer from an ALCS project can be leveraged to enable its installation while simultaneously realizing energy savings. Under the category of *Emerging Internet of Things* ("IoT") *Use Cases*, some of these non-energy value-added capabilities and services are graphically shown in Figure 3-2. Some of the emerging IoT use cases cited in Figure 3-2 include: space utilization, HVAC/Building Management System optimization, conference room scheduling, indoor positioning (related to navigational 'way-finding' for people within a large building like an airport or hospital), asset tracking, and safety and security.

The Companies are aware that customer decision making related to implementation of ALCS/NLC may in some cases be driven to a significant degree by value provide by features other than the direct energy savings. Economic value derived from such features can supplement the economic value of the energy

[40] Design Lights Consortium and Energy Solutions. NLC Report: "Energy Savings from Networked Lighting Control (NLC) Systems," Sep. 21, 2017.

savings alone (which may be low or moderate relative to the installed cost of the ALCS/NLC) to make the overall project economics acceptable to the customer.

### Understanding the Slow Pace of ALCS/NLC Adoption with LED Luminaires

The adoption of ALCS technologies has been slow in C&I buildings. The core reasons why the pace of ALCS/NLC adoption in the marketplace is slow are primarily as follows:

1. Knowledge and Experience;
2. Complexity;
3. Value Proposition;
4. Lack of Standardization; and
5. High Costs.

### Strategy

In an effort to address these market barriers, the Companies have developed an advanced lighting strategy comprised of customer engagement and education, workforce development, and tiered incentives.

The Companies will serve as the primary information conduit for customers, providing expert guidance and advice on lighting strategies in customer facilities. Company staff will be supported with a tiered incentive model for lighting technologies. This model scales incentives into tiers, and assigns lower incentives to simple, low-cost devices, while progressively increasing incentives for more advanced technologies and complex and sophisticated lighting designs with exterior, integrated, and networked lighting controls.

This incentive strategy also implements provisions for lighting designer assistance; thereby ensuring one-for-one retrofits are not implemented when a better design is needed. The assignment of incentives across a defined spectrum is critical in allowing the Companies to drive the Connecticut marketplace at a faster rate beyond low-cost technologies and toward truly comprehensive, high-quality lighting designs that deliver maximum savings. Additionally, as new ALCS, CLS, and LED technologies emerge, an agile incentive strategy affords the Companies flexibility in rapidly responding to customer demand and marketplace trends by providing higher incentives to beta users.

During the 2019-2021 Plan, the Companies will work to enable the deployment of CLS, ALCS, and emerging LED technologies through workforce development. It is important to work with Connecticut's

existing lighting installers to provide the necessary training to support CLS, emerging LED technologies, and advanced lighting controls deployment.

## 3.5 HVAC STRATEGY

Historically, the Companies have aggressively pursued improving efficiencies in HVAC equipment. In addition to pursuing energy savings (both kWh and ccf), the Companies also try to realize the benefits of System (ISO-NE) peak reduction. Unfortunately, accomplishing the former does not necessarily guarantee a relevant equivalent reduction in the latter pursuit. While all C&I Energy Efficiency Solutions offer incentives for HVAC equipment replacement, for the 2019-2021 Plan, the Companies propose the following strategies to target the HVAC replacement market:

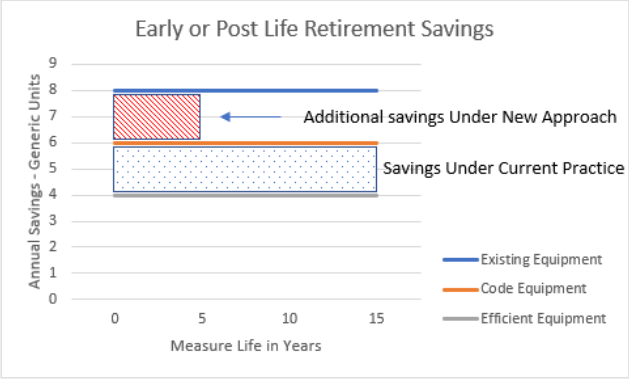
- Upstream HVAC Program. In late 2018, the Companies introduced electric HVAC energy-saving equipment into their existing Upstream Gas Heating & Water Heating program; thus, re-branding the prescriptive initiative as the Upstream HVAC & Water Heating program. For the 2019-2021 Plan, the Companies will look to build upon their current prescriptive HVAC offerings by partnering with the established distributor network and will look to expand participation for small and medium-sized businesses to encourage early retirement of HVAC equipment in the network.
- Demand Control Ventilation. One ECM that is currently a winning proposition for a myriad of reasons is Demand Control Ventilation ("DCV"). DCV monitors levels in the building space to modulate and reduce outside air introduction; thus, saving natural gas in the winter and electricity in the summer. For the 2019-2021 Plan, the Companies plan to continue to support DCV through the Energy Opportunities solution's initiatives currently in existence.
- Fault Detection Diagnostics. A relatively new measure, Fault Detection Diagnostics ("FDD") is sometimes referred to as a monitoring-based commissioning system that utilizes a building's energy management system to anticipate inefficiencies in HVAC equipment. Currently, the Companies are participating in a study initiated by the University of New Haven, funded through a DOE grant, that is analyzing several types of HVAC systems across Connecticut. The Companies plan to support ongoing efforts to help determine FDD's effectiveness as an energy conservation measure ("ECM") or electric system benefit. For more information regarding the Companies' FDD projects, please see Section 3.20.
- Air Source Heat Pumps. New air-source heat pumps are now even more efficient over a broader range of temperatures than their traditional counterparts. Additionally, these units' price adder over conventional roof top packaged units ("RTUs") continues to narrow. Air-source heat pumps are currently incentivized through the Energy Opportunities, Small Business Energy Advantage,

and Energy Conscious Blueprint solutions. For the 2019-2021 Plan, the Companies will continue to support the installation of air source heat pumps via incentives and educational programs.

- HVAC Modernization Demonstration: For the 2019-2021 Plan, the Companies plan to offer a demonstration incentivizing customers to replace equipment that is operating beyond its useful life. Equipment that has reached its useful life expectancy based on industry and financial depreciation models will be evaluated for increased financial incentives beyond the difference between standard and hi-efficiency. Many companies continue to operate equipment such as air compressors, HVAC, and production equipment that has exceeded its useful life. Often the costs to replace the obsolete piece of equipment depletes internal capital funding allocated by C&I customers. The cost to the C&I customer to repair and operate the obsolete piece of equipment is far below that of replacement. Whereas this situation is beneficial to the C&I customer it is detrimental to the utility infrastructure supporting the equipment as increased infrastructure needs to be maintained to support the inefficiency. Feedback from customers has indicated that expensive HVAC equipment is repaired beyond its useful life because the capital cost of new equipment is prohibitive.

  The Companies will work with potential customers to determine whether equipment replacement (early retirement and/or post-useful life) will benefit the electric and natural gas distribution systems (savings and demand savings) by first taking into consideration the actual total savings (based on total change in usage) of the new equipment versus existing conditions for the first five years of equipment replacement (more savings than current practice), then considering savings for the remaining useful life of the new equipment as compared to code or industry standard practice (current practice). This new approach provides both additional savings to the electric and natural gas systems and additional incentives to the customer to make the investment in early retirement and/or post-useful life replacement.

Figure 3-3: Early or Post-Life Retirement Savings




- Non-Traditional Heat Sources. The Companies plan to explore incentives for non-traditional, underutilized heat sources, such as heat recovery loops.

## 3.6 CORE C&I ENERGY EFFICIENCY SOLUTIONS

For more than 20 years, the Companies have developed and implemented cost-effective energy efficiency programs for C&I buildings across the state. Though many of the program names remain, the Companies remain focused on addressing each customer's primary energy needs rather than promoting one solution or initiative in a one-size-fits-all approach. In the development of the 2019-2021 Plan, the Companies have established five C&I Energy Efficiency Solutions to help C&I customers that are listed in Figure 3-4.

Figure 3-4: C&I Energy Efficiency Solutions for the 2019-2021 Plan

- Small Business Energy Advantage. This is the Companies' turnkey energy efficiency services solution for small C&I customers who do not have the in-house experience, financial resources, and time necessary to analyze and reduce their energy consumption.
- New Construction and New Equipment. This solution targets all commercial new construction, remodeling, renovation, and expansion projects in Connecticut, as well as end-of-life equipment replacement purchases. The New Construction & New Equipment solution is the Companies' primary marketing channel to push the C&I new construction marketplace toward Zero Net Energy buildings.
- Retrofit Services. This umbrella initiative encompasses the Companies' retrofit and major renovations' solutions. This C&I solution provides extensive retrofit measures, a variety of energy-efficient incentives, and some ancillary technical services to encourage C&I building owners to replace functioning, yet out-of-date and inefficient equipment with premium-efficiency equipment.
- Business and Energy Sustainability. This solution focuses on integrating energy efficiency into day-to-day operations of C&I customers through an innovative services platform, including Strategic

Energy Management, Business Sustainability Challenge, Retro-commissioning, PRIME, and Energy Utilization Assessments.

- Demand Reduction Strategies. This solution focuses on meeting the demand management-related needs of C&I customers through active demand reduction controls, demand response, and passive demand reduction measures (traditional energy efficiency measures that enable demand controls, such as lighting controls and variable frequency drives) strategies.

## 3.7 CONNECTICUT ENERGY CODE (C&I)

The current Connecticut Energy Code is the 2015 International Energy Conservation Code ("2015 IECC"). In 2017, the Office of the State Building Inspector and the Codes and Standards Committee began preparing a draft Connecticut Supplement for the 2018 State Building Code. On January 2, 2018, the Connecticut Department of Administrative Services issued a Draft for Public Comment.[41] The Connecticut Supplement adopted the 2015 family of codes developed by the International Code Council (this includes the 2015 IECC) and is also aligned with the State Fire Safety Code. The 2018 Connecticut State Building Code was adopted on October 1, 2018.[42]

The commercial requirements in the 2015 IECC are even more stringent, with more specificity, than the 2012 IECC, and include equipment and systems not previously covered in previous IECCs. The 2015 IECC also has options in the building envelope section, which if used, impose requirements on the lighting system design. Since the requirements for equipment are approaching the limits of technology, more and better-defined control requirements are included in the code. There are more additional efficiency options in the 2015 IECC that are better defined than they were in the 2012 IECC.

Lighting Power Density ("LPD"), is a screening measure that indicates whether a space offers opportunities for energy savings. With the 2018 Connecticut State Building Code, LPD requirements for most C&I building types have been reduced which will potentially reduce overall C&I Energy Efficiency Portfolio program savings by over 10 percent. These more stringent lighting requirements will decrease energy usage for all new C&I buildings; however, they will potentially decrease claimed program savings. Cooling full load energy efficiency requirements remain largely unchanged; however, integrated efficiency requirements have increased. The Companies will review program savings calculations to determine if they need to be adjusted to better reflect the HVAC industry's improvements to cooling equipment. Heating efficiencies remain largely unchanged with the 2018 Connecticut State Building

[41]Connecticut Department of Administrative Services. Final2018 Connecticut State Building Code, January 2, 2018. Available at: http://portal.ct.gov/-/media/DAS/Office-of-State-Building-Inspector/2018-CSBC---Code-Packet.pdf?la=en, 2015 IECC, pp. 99-106.

[42] Connecticut Department of Administrative Services, Building and Fire Code Adoption Process, Available at: http://portal.ct.gov/DAS/Office-of-State-Building-Inspector/Building-and-Fire-Code-Adoption-Process/What-Next.

Code, yet insulation requirements have increased, which should increase energy savings in new construction C&I buildings but may reflect lower program savings.

During the 2019-2021 Plan, the 2018 IECC will be incorporated into the 2020 Connecticut State Building Code. The Companies will monitor and adjust program guidelines accordingly.

## 3.8 C&I INCENTIVES

Incentives for installing energy-efficient equipment are designed to motivate customers to pursue comprehensive energy-saving solutions when they are replacing failed equipment, constructing a new facility, renovating an existing building, or fine-tuning their business operations in a sustainable manner. Incentives play an integral part of the Companies' C&I Energy Efficiency Solutions. A well-designed incentive should be attractive to induce a customer to perform an energy-saving action or install energy-efficient equipment, yet it should not reduce program cost-effectiveness.

The Companies must design incentives to reflect the customer's purchasing decisions. For example, the Companies can design smaller incentives for new construction, renovations, or for when an existing piece of equipment fails, because the customer has already made their purchasing decision, independent of the energy efficiency benefits. A reasonable incentive that covers the incremental cost of installing an efficient unit rather than a standard piece of equipment should be sufficient.

### C&I INCENTIVE TYPES

The Companies utilize an array of incentives to motivate customers to purchase energy-efficient equipment. Some common incentive types used include:

- Upstream Incentives. Upstream rebates are incentives given to distributors to encourage the stocking and promotion of high volume, standard energy-efficient equipment, such as LEDs in their warehouses. Contractors will be motivated to purchase the energy-efficient equipment as it is fully stocked and similarly priced to standard equipment. The Companies' goal in establishing upstream incentives is to eliminate the price barrier between standard and highly-efficient equipment. The Companies are constantly reviewing the need to add new products and whether revisions are needed due to market conditions. Additionally, stocking behaviors and workforce development opportunities must be maximized in order to continue to aid the market in its evolution to best uses.
- Unit Incentives and Rebates. These are pre-determined prescriptive incentives for common energy-efficient technologies where energy savings are easily quantified in a variety of standard applications and circumstances. Unit incentives and rebates are meant primarily for smaller projects where a customer can quickly and easily identify a piece of standard equipment (e.g., HVAC units or lighting fixtures) and compare it to a high-efficiency alternative.

- Incremental Cost Incentives. This incentive is designed to pay some of the incremental costs associated with upgrading from standard-efficiency to premium-efficiency equipment. This incentive is designed to entice the customer away from standard-efficiency; defined as the minimum efficiency needed to meet building code requirements. Typically, incremental cost incentives are used in new construction or "lost opportunity" equipment placement projects where a customer's older equipment fails and is being replaced, or when existing equipment is near the end of its useful lifetime and the customer is planning for a replacement.
- Whole Building Incentives. These incentives are typically used for new construction and major renovation projects to reward high-performance energy-efficient designs. The Companies use a tiered-incentive approach where the incentive increases the more a design is relative to building code.
- Design Incentives. These incentives are available for design teams to compensate them for some of the additional costs associated with running multiple building simulations. Building simulations, or energy models, are used by design teams to systematically evaluate multiple energy-efficient measures and designs. The energy models assist builders and designers in evaluating a new construction or major renovation project holistically and in determining the interactive effects of various pieces of energy-efficient equipment together. Design incentives are used to motivate design teams to maximize energy efficiency in new buildings and to ensure that energy-efficient design and equipment survive the value-engineering process.
- Technical Study Costs. This incentive covers the partial costs of performing studies to evaluate energy efficiency opportunities, such as compressed-air system evaluations, and focused studies on high-consumption electrical or natural gas equipment. Typically, the C&I customer and the Companies (through a C&I solution) will agree that a study would help explore and identify opportunities for cost-effective energy efficiency measures.
- Tiered Incentives. Incentives will be structured to encourage comprehensiveness in energy efficiency projects. The goal of providing a tiered incentive is to help customers capture energy savings from all identified energy-saving measures within a phased implementation. The Companies plan to continue to encourage comprehensiveness throughout the C&I Energy Efficiency Portfolio with the use of tiered incentive structures to promote multi-measure and multi-end use comprehensive projects.
  On a periodic and ongoing basis, the Companies evaluate their tiered incentive structure for effectiveness. During the 2019-2021 Plan, the Companies will evaluate the comprehensiveness of their tailored solutions for target market segments.
- Multi-Year Energy-Saving Agreements. For the 2019-2021 Plan, the Companies will continue to support select customers in multi-year energy saving agreements. As these agreements involve

all implementable and cost-effective energy projects over the agreement period, the Companies structure their commitments in a manner that helps that customer overcome its barriers.

## 3.9 FINANCING

The Companies, in collaboration with the Connecticut Green Bank, utilize financing tools and mechanisms to increase customer interest and participation in the C&I Energy Efficiency Portfolio. With budget levels returning to normal levels over the 2019-2021 Plan, the Companies will continue to utilize energy efficiency financing tools and mechanisms to drive customer engagement and participation.

A particularly effective financing mechanism has been the Electric Companies' zero percent, on-bill financing for the Small Business Energy Advantage solution. This funding model has been recognized as an extremely successful financing model as it is very simple and easy to explain to customers and is sold directly to small business customers through the program's contractors. In fact, the Small Business Energy Advantage solution's on-bill financing has been emulated by other utilities. This financing model is also utilized with Connecticut municipalities to facilitate energy efficiency project implementation, especially when town funds are scarce.

During the 2019-2021 Plan, Eversource will initiate a new financing mechanism to assist medium-sized businesses participating in the Business Energy Advantage program (part of the Energy Retrofits solution) gain access to low-interest financing.

For the 2019-2021 Plan, the Companies will continue to work with the Connecticut Green Bank to introduce new recapitalization strategies that will help leverage energy efficiency funds with private capital. Additionally, the Companies and the Connecticut Green Bank will work together to offer a variety of third-party financing programs that offer low-interest financing. In 2019-2021, the Companies will continue to work with DEEP, the Energy Efficiency Board's consultants, and the Connecticut Green Bank to identify program improvements, increase program participation, and reduce ratepayer costs. The Companies are also considering offering five-year loan terms to encourage comprehensiveness in energy efficiency projects. The goals of the Joint Committee, made-up of the Companies, DEEP, the Connecticut Green Bank, and the Energy Efficiency Board are detailed in Appendix C: Financing.

Table 3-3: 2019-2021 C&I Energy Efficiency Financing Solutions

| Financing Product | Loan Limits | Terms | Interest Rate | Funding Source |
|---|---|---|---|---|
| Small Business & Municipal Loan | $500 to $100,000 (on-bill repayment for electric and natural gas measures)<br>$500,000 per municipality/Eversource<br>$100,000 per municipality/United Illuminating | Max. 48 months | 0% | Energy Efficiency Fund, Utility Capital, and Third-Party Providers |
| Medium-Sized Government Loan | TBD | TBD | TBD | TBD |
| Commercial & Industrial Loan | $2,000 to $1,000,000 | Max. 60 months | Up to $100,000 (2.99% or 4.99%)<br>Greater than $100,000 (market interest rates) | Third-Party Provider |
| C-PACE | Over $150,000 for capital improvements<br>Under $150,000 for boiler upgrades/natural gas conversions | Typically, 10 years or longer | Low-interest financing with loan repayment on your property bill | Third-Party Provider |
| PURA Loan | $1,000,000 and over | Max. 120 months | 1% below customer's eligible rate or prime rate | Electric Ratepayers (funding through Federally Mandated Congestion Charges) |
| CT Hospital Association Trust, Inc. | Varies | 5 to 7 years | 0% | Eversource Grant (Self-Funding) |

## 3.10 MARKET ACTIONS FOR ALL C&I CUSTOMERS

### TRADE ALLY NETWORKS

In addition to their involvement in the energy efficiency industry, the Companies have close trade ally partnerships with contractors, distributors, manufacturers, retailers, and stakeholders. These working partnerships help the Companies to effectively develop and implement cost-effective strategies and to adjust the design of energy-saving solutions to proactively respond to the ever-evolving C&I energy efficiency marketplace. The Companies have defined three broad categories for trade allies that include:

- Contractors who already have established relationships with the Companies through their participation in C&I Energy Efficiency Solutions projects;

- Companies who sell or distribute energy-efficient products and services, such as distributors and manufacturers; and
- Entities who design and specify energy-efficient equipment and designs, including: architects, design/build contractors, and engineers.

These three groups of trade allies offer different communication channels to reach C&I customers. However, the Companies need to manage messaging so that offerings are effectively marketed to target C&I market segments. This is the reason the Companies have formalized a Trade Ally Network process to effectively target C&I market segments.

From 2016-2018, the Companies made significant strides in establishing Trade Ally Networks by recruiting, training, qualifying, and managing networks of trade allies (distributors, contractors, and installers) and partnering them with trade and professional associations to encourage comprehensiveness in energy efficiency projects. For the 2019-2021 Plan, the Companies will focus their Trade Ally Networks strategy on deepening existing partnerships needed to stimulate comprehensive projects. The Companies have identified several Trade Ally Networks they will strengthen and/or establish for the 2019-2021 Plan, including, but not limited to:

- Energy Management System Contractor Trade Ally Network;
- Compressed Air System Trade Ally Network;
- Lighting Control Design Trade Ally Network;
- Kitchen Equipment Trade Ally Network;
- HVAC Trade Ally Network; and the
- Thermal Management Trade Ally Network.

## ALLIANCES AND ASSOCIATION PARTNERSHIPS

Throughout the 2019-2021 Plan, the Companies will continue to strengthen and deepen their relationships with professional and trade associations that serve as respected and trusted sources of information for customers and trade allies. Examples of these partnership alliances include the: Northeast Energy Efficiency Council, American Institute of Architects, American Society of Heating Refrigeration and Air Conditioning Engineers, and the Connecticut Green Building Council.

During the 2019-2021 Plan, the Companies' Alliances and Association Partnerships will be centered on target market segments, specific energy-efficient technologies being promoted by the Companies, and the Companies' continuous push toward comprehensive energy efficiency projects.

## ROUNDTABLES, CONFERENCES & EVENTS

For the 2019-2021 Plan, the Companies will also focus on promoting networking events between C&I customers, Trade Ally Networks, Alliances and Association Partnerships, such as solutions-based roundtables, to drive comprehensive energy efficiency projects and focus on customer needs. The Companies have seen significant success in hosting roundtables as they share opportunities for C&I customers to share best practices and network. A perfect example of this success is within the manufacturing community, where businesses have come together at Business Sustainability Challenge Roundtables to share best practices.

## CONDUIT TO SUSTAINABLE PROJECTS

For the 2019-2021 Plan, the Companies will serve as a primary informational conduit for any C&I customer or market segment that is interested in pursuing energy efficiency, renewables, and sustainability projects. The Companies recognize that when a customer is addressing the energy efficiency of their building or facility that this is also the opportune time to have proactively packaged information regarding other sustainable opportunities, such as installing on-site renewable technologies or reducing water consumption for an industrial process. Though the Companies cannot serve as the provider of all sustainable opportunities; they can connect C&I customers to an assemblage of other sustainability solutions and processes while they are making energy-efficient improvements to their building or facility.

Serving as the main conduit to sustainable initiatives enables the Companies to better serve C&I market segments and individual customers with tailored solutions and packaged marketing.

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## 3.11 C&I SOLUTION: SMALL BUSINESS ENERGY ADVANTAGE

### OVERVIEW

The Small Business Energy Advantage ("SBEA") program is one of the more well-known and recognized solutions in the C&I Energy Efficiency Portfolio. SBEA is designed as a cost-effective, turnkey energy efficiency service for small C&I customers who do not have the financial resources, in-house expertise, or time necessary to analyze and reduce their energy consumption.

The SBEA solution has also aligned with the Companies' customer-centric approach by emphasizing additional actions and solutions that small C&I customers can utilize to reduce energy use. These pathways for additional energy efficiency opportunities include but are not limited to: the state's Lead by Example initiative (under a SBEA Master Agreement), the National Accounts initiative, the Grocery initiative, and the Companies' midstream and upstream incentive offerings.

### TARGET MARKET AND ELIGIBILITY

The target market for the SBEA solution is all C&I electric customers with less than 200 kW peak load, and for natural gas measures, customers must be on a firm rate. For the 2019-2021 Plan, the Companies will explore converting the 200 kW requirement to a kilowatt-hour threshold to target customers. More than 100,000 customers are eligible to participate in the SBEA solution with the greatest customer populations failing within these market segments: Retail (32 percent), Professional Services (23 percent), Other-Agriculture (16 percent), and Manufacturing (11 percent).

The Companies also work with Trade Allies and Associations to reach several subsectors below that need additional support in energy efficiency projects, including: Agriculture, Dry Cleaners, and Food Service.

### PROGRAM THEORY AND DESCRIPTION

The SBEA solution was designed to engage small C&I customers in energy efficiency programs by providing the resources they need through a packaged solution tailored to them. As noted, small C&I customers generally do not have the in-house expertise, financing, or technical expertise (i.e., on-site energy and facility managers) needed to make informative energy efficiency decisions.

For the 2019-2021 Plan, the SBEA solution will continue to offer a financial platform that combines incentives for relevant energy efficiency measures within cost-effective restraints and a zero-percent financing option to credit-qualifying customers to cover the balance of the energy efficiency project costs in a cash positive scenario (this is the goal but is not always possible). While simultaneously increasing the hurdles necessary to reach true comprehensiveness through the tiered incentive structure. The financed contract amount appears as a line item on the SBEA customer's electric bill. The

loan repayment term is typically determined by the simple payback of the project and set at a level which typically provides the customer with a positive or at least neutral annual cash flow based on the estimated energy savings of the installed measures. Like electric measures, the cost of natural gas energy-saving measures is also financed as part of the on-bill repayment on a customer's electric bill. When the simple payback of measures or amounts to be financed exceed maximums established by the Companies, SBEA customers are given access to the same types of third-party financing offered through the EO solution.

### Customer Engagement Channels

With the large SBEA-eligible population within the state (100,000 customers), the Companies have developed three customer engagement channels to effectively reach different subsectors, including these:

- Customers with 100-200 kW electrical demand (and/or kWh equivalent). For customers with 100 to 200 kW peak electrical demand, the Companies have developed a comprehensive approach to engage customers not reached by SBEA implementation contractors and to drive participation in the SBEA solution. This approach integrates these customer engagement channels: Trade Ally Networks, Association Partnerships, internet-provided information regarding the SBEA solution, and the Companies' Customer Engagement Platforms.
- Mid-sized SBEA-eligible participants with 10-100 kW electrical demand (and/or kWh equivalent). For most of this population, the turnkey services platform provided by SBEA implementation contractors is the main engagement channel to drive customer participation.
- Micro-businesses with less than 10 kW electrical demand (and/or kWh equivalent). For these customers, the primary customer engagement channels are the Companies' Customer Engagement Platforms and the EnergizeCT.com and Company-specific websites.

### Solution Offerings

The SBEA solution offers several innovative services, incentives, and finance offerings to increase participation of small C&I customers in energy efficiency programs. These include:

- The traditional SBEA turnkey services solution, including installation of energy-efficient measures and on-bill financing;
- Tailored services for end-use equipment and processes identified through the Companies' market segmentation analysis. In September 2018, the Companies rolled out a marketing communications plan to Small Business Energy Advantage vendors with bundled measures and market-specific communications, including case studies and offerings; and

- Leveraged participation by state entities through the Lead by Example initiative utilizing the SBEA Master Agreement.

## HEAT PUMP TECHNOLOGIES

Through 2019, the Companies will provide support to the 2018 CES and expand their efforts to promote the installation and use of heat pump technologies, specifically targeting small business customers who use electric resistance heat or are seeking to add air conditioning. This broad promotional and outreach effort will include training SBEA contractors on the benefits of heat pumps and how to best identify businesses that could benefit the most from the installation of heat pump technologies. The Companies see these trainings as imperative to the increased adoption of heat pump technologies by small businesses customers. In the second half of 2019, similar to the Residential Energy Efficiency Portfolio, the Companies will offer and pilot heat pump technologies to customers that result in reductions in heating energy through higher efficiency.

In 2020 and 2021, the programs may support energy optimization to help meet the state's energy, environmental, and climate goals by installing a larger volume of heat pump technologies. For 2020 and 2021, the Companies will work with DEEP to analyze benefit-cost methodologies used to calculate savings for the C&I Energy Efficiency Portfolio. The proposed revisions to the programs will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP.

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## 3.12 C&I SOLUTION: RETROFIT SOLUTIONS

### OVERVIEW

Energy Opportunities ("EO") is an umbrella retrofit initiative that provides incentives and ancillary technical services to encourage existing C&I building owners to replace functioning, but outdated and inefficient equipment with premium-efficiency units. A majority of the C&I Energy Efficiency Portfolio's energy savings comes from the EO solution. As a result, the Companies continuously review incentive levels and delivery approaches to reflect emerging technologies, the changing marketplace, and economic conditions. A continued focus remains on structuring incentives to encourage comprehensive projects as opposed to prescriptive single measure projects.

### TARGET MARKET AND ELIGIBILITY

The EO solution targets all non-residential electric customers, as well as all non-residential natural gas customers on a firm rate. In addition to commercial buildings, the EO solution can provide energy-saving opportunities for other buildings, including:

- Schools (e.g., K-12 colleges and universities);
- Public and Institutional Buildings and Facilities (e.g., state and municipal buildings, water and wastewater facilities, hospitals, and non-profit enterprises);
- Industrial Facilities (e.g., agriculture, factories, storage and processing, and warehouse); and
- Common space areas within multifamily buildings.

The Companies service approximately 70,000 electric and 35,000 natural gas C&I customers. With the Companies' targeted market segment approach, the EO solution's incentive pathways are used by the Companies behind the scenes to make each energy efficiency project customer-centric. For example, if a manufacturing customer needs to replace certain equipment, the Companies will focus on the customer's market segment and package energy-efficient equipment and incentives from the EO solution (and perhaps other C&I solutions) that target their energy needs. The EO solution has three delivery approaches:

1) For large C&I customers with electric loads greater than 300 to 350 kW, the Companies primarily use their internal staff of technical experts and account managers, supplemented with external technical support as required, to work directly with customers to identify and deliver energy efficiency solutions.
2) For the 2019-2021 Plan, Eversource will deliver a new market-based initiative, Business Energy Advantage, for mid-size businesses that utilize 200-500 kW of peak demand. This vendor-driven

solution will utilize a preferred vendor structure, incentives, and solutions similar to the SBEA solution. The Business Energy Advantage solution is being developed to bridge the current gap for providing customized solutions and services to mid-size businesses consuming either too little or too much energy, to be considered managed commercial accounts or small businesses, respectively. There are currently 2,600 Eversource C&I customers that are eligible to participate in the Business Energy Advantage initiative.

3) For smaller customers with electric peak loads of 200 kW or less or who are eligible for the SBEA solution (see Section 3.11), the Companies will employ the use of their Customer Engagement Platforms, work closely with trade allies and associations, and employ market actions designed for an individual customer's market segment.

## PROGRAM THEORY AND DESCRIPTION

The core elements of the EO solution are three custom approaches: (1) the system-specific approach, (2) the prescriptive approach, and (3) custom approach. These approaches utilize both prescriptive and custom incentives to provide customer-centric solutions to energy efficiency projects.

### System Specific Approach

The EO solution's System Specific Approach focuses on one or two aspects of a C&I building's energy systems. Customers are encouraged to explore the life-cycle cost and the business and environmental attributes of replacing old, inefficient equipment with premium-efficient units. The System Specific Approach utilizes a combination of prescriptive rebates (for standard equipment replacements) and custom incentives for site or specific-use energy efficiency measures. The System Specific Approach is typically addressed through a focused analysis that utilizes a technical study to determine the best approach toward energy efficiency, and the Companies provide the technical support and encouragement to C&I customers.

### Prescriptive Approach

The EO solution offers a standardized, streamlined approach for incentive delivery through its Prescriptive Approach by providing prescriptive rebates for a variety of common electric and natural gas equipment. Prescriptive incentives are offered at both the customer level (instant rebate) and at the wholesale level (upstream) for energy-efficient technologies that have predictable energy savings in most applications where they replace an inefficient piece of equipment.

Prescriptive measures are available for those technologies where the EO program has enough data to predict savings with reasonable accuracy across all applications. These technologies include: chillers, commercial kitchen equipment, HVAC equipment, lighting equipment and controls, motors and drives, and water heaters. The prescriptive approach is often the first pathway that C&I customers are exposed to the EO solution's energy-saving opportunities.

Incentive strategies include per unit rebates and upstream incentives to distributors. For example, the Companies will offer an upstream incentive for a distributor or manufacturer for the stocking and sale of commercial kitchen equipment.

### Custom Approach

The Custom Approach is designed for retrofit projects that rely on engineering calculations to determine energy savings to determine cost-effectiveness, and thus determine the incentive amount given to the customer. Through the Custom Approach, the Companies' staff work one-on-one with C&I customers to develop a tailored and customized approach for each customer that is site-specific. C&I customers receive technical assistance from the Companies' technical staff and market segment experts, as well as a pool of prequalified expert private sector engineers to identify and quantify energy-saving opportunities.

Project viability, incentives, and eligibility are assessed on a case-by-case basis, and are determined by a technical study, which details project costs and energy and demand savings. Studies must follow program-specified procedures and are subject to review and approval by the Companies' staff. Custom retrofit measures can include, but are not limited to: building shell measures, HVAC equipment and controls, industrial process-end measures, lighting equipment and controls, refrigeration measures, and water heating.

The Companies offer financial incentives through the Custom Approach that are designed to encourage C&I customers toward energy efficiency. The purpose of the Custom Approach is to instill C&I customer confidence in the estimated project energy savings and the reliability of energy-efficient equipment, while delivering incentives and custom technical support.

## EARLY RETIREMENT/POST-USEFUL LIFE

In order to encourage C&I customers to replace large equipment in advance of end-of-life reasons, the Companies will develop an early retirement program to structure incentives to hasten equipment replacement in 21$^{st}$ century manufacturing facilities and state buildings, and large industrials. The Companies will work with potential customers to determine whether equipment replacement (early retirement and/or post-useful life) will benefit the electric and natural gas distribution systems (savings and demand savings) by first taking into consideration the actual total savings (based on total change in usage) of the new equipment versus existing conditions for the first five years of equipment replacement (more savings than current practice), then considering savings for the remaining useful life of the new equipment as compared to code or industry standard practice (current practice). This new approach provides both additional savings to the electric and natural gas systems and additional incentives to the customer to make the investment in early retirement and/or post-useful life replacement.

The Companies have allocated approximately $250 million toward large C&I Energy Efficiency Portfolio budgets for the 2019-2021 Plan. Within these budgets, the Companies have allocated approximately $4.5 million over the three-year plan that will be targeted to cover early retirement of equipment (includes post- useful life replacement) in certain market sectors and for Customized Solution Partnerships/Strategic Energy Management Demonstrations.

## THIRD-PARTY VENDOR RELATIONSHIPS

The Companies have developed several third-party vendor relationships to serve as sector specialists for the EO solution. These include, but are not limited to:

- National Accounts. National Accounts are important for the Companies to target the Retail and Restaurant market sectors. As identified within the market segmentation section, nationally-recognized customers bring unique challenges to the decision-making process; however, they provide substantial opportunities for large volumes of savings that can be replicated across multiple facilities.
- Property Management. The Companies have implemented the use of "remote audit" tools and services to develop a process of conducting initial building-specific audits remotely. Remote audit applications are utilized for certain large, managed office and professional buildings (e.g., corporate headquarters, hospitals, and colleges and universities). These remote audits do not require the investment of human and time resources that are typically required for a physical on-site audit and can provide an alternative pathway for customer participation in the EO solution.
- Grocery. As noted in the market segment descriptions, the Grocery sector is a very specialized market with many special end-use equipment needs, including: drivers and systems, refrigeration and cooling loads, as well as lighting equipment and controls. For the 2019-2021 Plan, the Companies will utilize a grocery-specific audit methodology to determine energy-saving opportunities.

## 3.13 C&I SOLUTION: NEW CONSTRUCTION, RENOVATIONS & NEW EQUIPMENT

### OVERVIEW

For more than 20 years, the Energy Conscious Blueprint ("ECB") solution has helped drive energy efficiency in the new construction, major renovations, and new equipment marketplace. The objective of the ECB solution is to capture a market-driven window of opportunity to achieve energy efficiency and transform design and equipment specifications at a minimal cost. This opportunity is when new commercial buildings and industrial facilities are being designed and constructed, and when existing buildings are being renovated or expanded.

The ECB solution provides incentives and services to designers and developers of new C&I buildings and to the owners of existing buildings that are undergoing major renovations or additions. Like the other C&I Energy Efficiency Solutions, ECB offers tailored solutions designed to complement an owner/builder's project objectives and investment criteria. The ECB solution offers two approaches for customers: (1) a comprehensive approach and (2) a prescriptive approach (includes failed equipment replacement).

### TARGET MARKET AND ELIGIBILITY

The target market for the ECB solution is all "time-dependent" electrical and natural gas energy efficiency opportunities in the non-residential building sector, which includes commercial, industrial, government, and institutional customers. Time-dependent opportunities, or lost opportunities, exist when new buildings are being designed and constructed, or when existing buildings are being renovated or expanded. Time-dependent opportunities also exist when existing equipment fails and must be replaced quickly to restore the building back to full functionality in end-of-life or failed equipment situations.

For the new construction market, the target market includes: architects, designers, distributors, engineers, equipment specifiers, manufacturers, suppliers, commissioning agents, and the owners or developers of new buildings. In the replacement market, key decision-makers include: building owners or managers, equipment supply houses, and facility staff.

#### Development Process

The process for developing a non-residential building is complex and makes it difficult for the Companies to act as outside influencers. First, the design process for most C&I new construction projects is developed outside of the public view, except for large governmental or institutional projects, or projects that involve some form of public body approval. The decisions regarding property development often

remain private when property owners are trying to arrange for investor buy-ins, financing, and keeping competitors away.

### Barriers

There is no set timeline for real estate developments to occur. Often, they can be stalled at certain points (e.g., zoning and permitting applications) and then suddenly restart once a barrier to the development process has been lifted. It is at this concept design phase that the ECB solution can help ensure energy efficiency is integrated into a project. Once a C&I new construction project is deemed "shovel ready," the building plans have already been finalized. Introducing energy efficiency into the development process will only mean delay and additional developmental costs so energy-saving equipment or design are not included or removed from the final project design. This is a lost opportunity for energy savings.

Another barrier to the Companies' involvement in major renovations is that 40 to 50 percent of small commercial buildings are built for tenant occupancy. A tenant typically pays for all operating costs, including utilities through a "triple net" lease. This does not incentivize a tenant to participate in purchasing energy-efficient equipment as it is an investment in the owner's building and not the tenant's space. Thus, the opportunity to make the building energy efficient comes at the time it is built. The designer and developer of the property will typically oversize HVAC equipment and install plenty of lighting in commercial buildings to entice new tenants.

For time-dependent projects involving replacement of failed or end-of-life equipment, the Companies focus on customers and their facility managers, and on equipment vendors, through extensive one-on-one communications. These communications are supported by case studies, Trade Ally Networks, outreach at trade shows and industry conferences, breakfast meetings, and contractor training seminars. The Companies engage equipment distributors and installers to help them promote energy-efficient equipment through coordinated trainings and upstream incentives.

These challenges to energy efficiency require the Companies to target and consider other market actors in the new construction marketplace, including:

- Owners and Occupants. These market actors expect to be long-term tenants in their own building and are more receptive to longer payback measures and to life-cycle design. The opportunity exists to educate these customers about how energy-efficient buildings can exceed their corporate profitability metrics while also meeting their corporate, sustainability, and responsibility ("CSR") goals.
- Public Sector Owners. These market actors are often required to meet regulations or legislative mandates for life cycle costing and energy efficiency. The Companies provide coordination and leverage to the Lead by Example and Energy Services Performances Contracting initiatives.

- Chain and Franchise Owners. These market actors often use one design template for all buildings and often use in-house architects and designers. The Companies leverage their National Accounts association to reach this market actor. An additional opportunity is to work through their CSR staffs, along with national level real estate and operations personnel, to educate them about the operational and profitability advantages of energy-efficient buildings.
- Environmentally Conscious Owners. These market actors promote their buildings as an extension of their global environmental and corporate ethics. The Companies' Alliance with the US Green Building Council is a key market channel to this market actor.
- Speculative Developers. These developers must be convinced that energy-efficient buildings are a positive feature for future tenants or building owners. This can be accomplished by working with and educating developer and banking organizations, such as Building Owners and Management Association ("BOMA") and the Connecticut Real Estate Finance Association ("REFA") about the increased values of energy-efficient buildings over standard buildings.
- Larger Architectural and Engineering Firms. These market actors typically design buildings from a library of typical building or template designs that are utilized repeatedly for different building owners and developers. The Companies will continue their work with the American Institute for Architects ("AIA") to integrate energy-efficient design and equipment into these building template designs. The AIA has set a goal that by 2030, all new construction designs be for zero net energy buildings. Additionally, the proposed ASHRAE Standard 90.1 for 2030 (the basis for the IECC) will require zero net energy buildings be designed for the C&I markets.
- "Leading" Design Firms. These market actors are the leaders in the design industry and other firms follow their lead. The Companies will continue to work with leading design firms through Trade Ally Networks and Alliances, including the New Building Institute, CT Green Building Council, and Passive House Alliance.
- Equipment Manufacturers and Suppliers. These market actors supply equipment to the building and renovation marketplace and must be incentivized to stock energy-efficient equipment. Market actions, such as Trade Ally Networks and upstream incentives, serve as main engagement channels used by the Companies for this market actor.

## PROGRAM THEORY AND DESCRIPTION

### Solution Offerings

The core elements of the ECB solution are four custom approaches: (1) the whole building approach, (2) the performance-based procurement approach, (3) the system specific approach, and (4) the custom

approach. These approaches utilize both prescriptive and custom incentives to provide customer-centric solutions to energy efficiency projects.

- Whole Building Approach. This approach allows the design team, program-supported experts, and the customer to work together from the conceptual design stage of a new construction or renovation project to consider holistic design and energy-efficient equipment options that will improve the overall efficiency of an entire building and its operating systems. Incentives are available through the Whole Building Approach for customers who take advantage of ECB-solution technical assistance as well as the design team for performing additional design or analysis to accommodate ECB recommendations.

  In the near term, the Connecticut Office of Policy and Management will begin updating the state's high-performance building standards.[43] The Companies will look for ways to synchronize their Whole Building Approach with the revised standards during the 2019-2021 Plan.

- Prescriptive Approach. This is a streamlined solution for delivering incentives. Customers can choose equipment from a pre-qualified list of measures and receive an incentive that covers a significant portion of the incremental cost of the premium-efficiency equipment. This is a viable solution for customers who have projects that are beyond the design phase and perhaps already in actual construction as it allows simple equipment substitutions. The Prescriptive Approach can be used in new construction, equipment replacement, remodeling, and renovation projects.

  Prescriptive incentives are available, but not limited to, for these technologies: chillers, motors, variable speed drives, unitary HVAC equipment, water heating equipment, and commercial kitchen equipment. Prescriptive incentives can range from per unit rebates to tiered incentives based on the size and efficiency of the installed equipment (e.g., SEER rating for HVAC system). In 2019, the Companies will provide upstream incentives for commercial kitchen equipment, including: fryers, griddles, freezers, and refrigerators, and some HVAC systems. In 2018, the Companies introduced eligible electric HVAC measures to the existing Upstream Heating program and plan to expand these upstream offerings during the 2019-2021 Plan.

- Performance-Based Procurement Approach. This approach provides a method for building owners to specify energy efficiency as a value-add during the design team selection process. For the ECB solution to support this process, owner outreach and engagement must occur before a design team is procured. The ECB solution can provide guidance regarding performance-based procurement and help owners establish appropriate energy performance targets for their specific project.

[43] DEEP. *Connecticut Building Standard Guidelines Compliance Manual for High-Performance Buildings*. September 2011. Available at: http://www.ct.gov/deep/lib/deep/energy/buildingstandards/compliancemanualhighperformancebuildings.pdf.

The Companies must educate new construction stakeholders regarding performance-based procurement, including: architects, builders, design firms, and private and public building owners. In addition to outreach and education, the Companies offer incentives to owners and builders to encourage innovation in high-efficiency performance by the design community. As the concept of performance-based procurement is a new concept that involves significant risk to building owners, the Companies have adopted and will need to continue to evolve developed this innovative approach to incentivize owners, design teams, and construction managers to establish the energy-saving goals early in the design and building process to ensure comprehensive energy efficiency projects.

- System Specific Approach. Like the EO solution, the ECB's System Specific Approach focuses one or two components of a building's energy system during a new construction, major renovation, or addition project. As building systems are interrelated, the Companies encourage customers to think broadly about energy efficiency before the walls go up or large equipment is installed. Typical incentives are given for control options for buildings systems, including: building management, lighting, refrigeration, and industrial processes or specialized equipment. Customers who select the System Specific Approach will receive prescriptive incentives for each measure for which one exists, or custom incentives for site or use-specific measures.
- Custom Approach. This approach is designed to generate comprehensiveness in new construction and major renovation projects. Custom Approach projects rely on engineering calculations to estimate savings, to determine whether a project is cost-effective, and if as a result, is eligible to receive incentives. The Custom Approach is designed to encourage non-standard and innovative energy efficiency measures. Customers are even allowed to request a technical assessment of measures for energy efficiency that are not on the prescriptive list.

  The energy savings generated by innovative measures are site and end use-specific and require a detailed analysis to qualify for incentives. A project's eligibility, viability, and incentives are assessed on a case-by-case basis for the Custom Approach. The study is conducted according to program-specified procedures and is subject to the review and approval by the Companies. The Companies use a baseline standard practice to analyze each proposal, which is developed using technical resources (e.g., building energy codes, current baseline studies, other market research, etc.)

  Eligible measures for the Custom Approach include but are not limited to: lighting and lighting systems, shell measures, HVAC systems, water heating, motor systems, building envelope and refrigeration measures, and a variety of industrial process end uses. Incentives are related to several site or use-specific variables, total project costs, and associated savings.

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## 3.14 C&I SOLUTION: BUSINESS AND ENERGY SUSTAINABILITY

### OVERVIEW

The Companies offer several Business and Energy Sustainability solutions that seek to integrate energy efficiency into day-to-day operations of C&I customers through services and innovative products. A collection of energy efficiency and sustainability initiatives, the Business and Energy Sustainability solution's primary objective is to help C&I customers make continuous improvements in their business and facility operations that lead to sustainability and competitive business advantages.

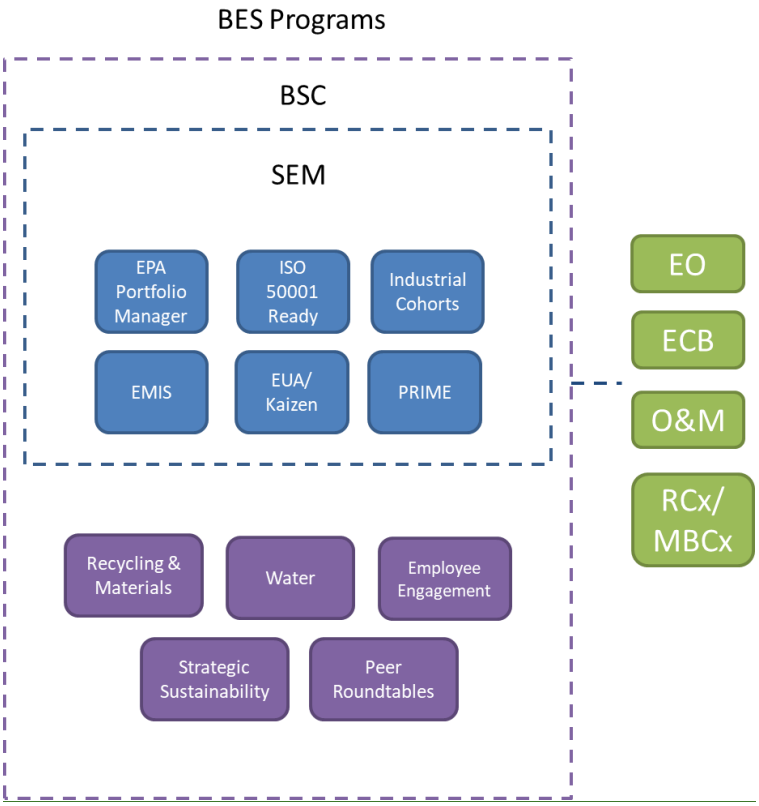
Each Business and Energy Sustainability offering may be used as a stand-alone solution, but customers are encouraged to view the Business and Energy Sustainability solution's offerings as a Strategic Energy Management umbrella approach that is offered through the Business Sustainability Challenge and the new Customized Solutions Partnerships Strategic Energy Management Demonstration. Elements of the Business and Energy Sustainability's offerings serve as "feeders" to the incentive-oriented ECB and EO solutions, although the solution maintains separate services and incentives that provide substantial benefits of their own. The Business and Energy Sustainability's initiatives are listed below and shown in Figure 3-5 (on the following page):

- Business Sustainability Challenge:
    - Strategic Energy Management
        - Energy Utilization Assessments; and
        - Process Reengineering for Increased Manufacturing Efficiency; and
- Customized Solutions Partnerships Strategic Energy Management Demonstration;
- Retro-commissioning & Monitoring-Based Commissioning; and
- Operations and Maintenance Services.

### TARGET MARKET AND ELIGIBILITY

Due to its highly-specialized initiative offerings, the Business and Energy Sustainability solution can help all C&I target markets make continuous energy efficiency improvements to their commercial buildings and industrial facilities. There are certain Business and Energy Sustainability initiatives that can be more effectively utilized by C&I customers with peak electrical loads greater than 200 kW and for natural gas customers on a firm rate.

Figure 3-5: Business and Energy Sustainability Solution Diagram




## BUSINESS SUSTAINABILITY CHALLENGE

The Business Sustainability Challenge is the hallmark initiative of the Business and Energy Sustainability solution. This initiative highlights the Companies' continued focus on delivering customer-centric solutions to target markets through innovative engagement channels. The Business Sustainability Challenge's primary objective is to offer a customer-centric approach and achieve deep energy savings with C&I customers by providing energy efficiency solutions in the context of sustainability and business competitiveness. Participation in the Business Sustainability Challenge delivers both energy and non-energy benefits to customers and maximizes the positive impact to their bottom and top lines, the environment, and the Connecticut C&I economy.

The Business Sustainability Challenge accomplishes this objective through support that focuses on comprehensive assistance with Strategic Energy Management and Strategic Sustainability plans as well as peer roundtables where customers with similar business operations can share ideas, successes, and challenges. It offers a long-term approach to working with customers that drives behavior change at a management level and transforms the heart of decision-making; moving from reactive incentives to ongoing flexible engagement. The Business Sustainability Challenge creates win-win solutions where C&I

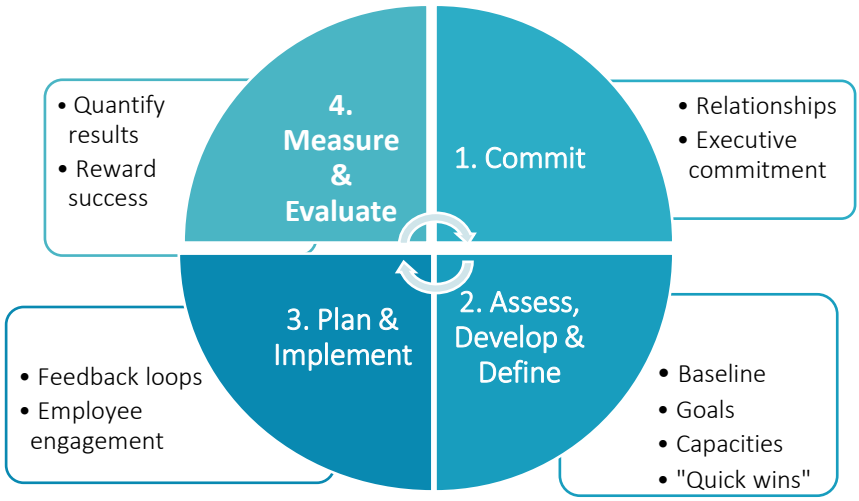
customers can be proactive about addressing environmental issues (e.g., climate change and water pollution) and engage their employees, customers, and stakeholders in original and innovative channels.

The Business Sustainability Challenge is an umbrella approach that weaves together each of the Industrial Solutions offerings into a coherent package that make it easy for customers to navigate and capitalize on the wide variety of C&I incentives. The initiative provides third-party technical sustainability strategy consultants to work with management teams regarding long-term strategy and planning for all business operations, while the Energy Utilization Assessments initiative focuses more on sustainability and efficiency efforts at a facility level, and the Process Reengineering for Increased Manufacturing Efficiency initiative addresses operational efficiencies. Business Sustainability Challenge engagements result in the development and execution of long-term plans that bring together the action steps needed for C&I customers to realize deep energy savings and make substantial improvements in other key aspects of sustainability.

### Strategic Energy Management

Strategic Energy Management ("SEM") is a long-term approach to pursue energy efficiency that focuses on setting goals, tracking progress, and reporting results. The Business Sustainability Challenge serves as the Companies' main SEM approach to establish long-term relationships with energy users and to target persistent energy savings. Though the Business Sustainability Challenge contains all of the value of a traditional SEM program that other states' energy efficiency portfolios present to customers, the offering provides many additional aspects of sustainability that help define it as a cutting-edge program. Figure 3-6 describes the Companies' SEM approach and how the Business Sustainability Challenge functions as a structured process to implement SEM.

Figure 3-6: SEM as Facilitated by the Business Sustainability Challenge



- Step One: Commit. The Business Sustainability Challenge's SEM approach begins by establishing relationships between the customer and the Companies. The Business Sustainability Challenge is built around a multi-year, executive-level management commitment by the customer to target persistent energy savings.
- Step Two: Assess, Develop and Define. Once an executive commitment has been made, the Companies can move to the second step of the SEM approach. First, an assessment of the baseline energy and sustainability conditions of the subject facility is performed, and then energy-saving and sustainable goals are established. Then, the internal capacities of the customer are developed and to maintain momentum some "quick win" actions are identified and implemented.
- Step Three: Plan and Implement. Over the long-term, as internal capacities are utilized to establish energy and sustainability goals, the customer builds in feedback loops and actively engages its workforce with the Business Sustainability Challenge. This engagement makes the established goals "everyone's."
- Step Four: Measure and Evaluate. Finally, results are quantified by measurement and evaluation against both the customer's metrics and the Companies' evaluation, measurement, and verification ("EM&V") protocols, and successes are rewarded.

The Business Sustainability Challenge is the only initiative that the Companies provide that pulls together all the pieces of the SEM approach; however, all the Companies' offerings and services are always available (as appropriate) to customers on an a la carte basis.

*Benefits of the Business Sustainability Challenge*

The Business Sustainability Challenge addresses the energy needs of a customer by making continuous improvements in business and facility operations that lead to sustainability and competitive business advantage. The Companies have long recognized the importance of educating customers about the value (energy and non-energy) of participating in the C&I Energy Efficiency Portfolio. The Business Sustainability Challenge's innovative solutions help businesses see where energy efficiency provides a foundation for their key business goals such as improving their bottom line, management, sales, or innovation, and eventually move into sustainable industry leadership through net-zero and net-positive operations. Initially customers develop and implement strategic carbon and energy management plans and choose if they want to also tackle other common sustainability aspects, such as water and wastewater, materials, and employee engagement and product innovation.

At each of the four steps, the Business Sustainability Challenge connects businesses with the resources they need to blaze a path of continuous improvement and to achieve both energy savings and comprehensive non-energy benefits. The Business Sustainability Challenge is successful because it

addresses energy efficiency needs in tandem with the other most pressing issues in the Connecticut business community such as productivity, overall competitiveness, regulatory pressures, workforce development, and sales growth. Improvements in each of these areas are often multiple times more valuable than just energy efficiency savings, so combining them all is a compelling package to many customers.

*Initiative Offerings*

The Business Sustainability Challenge moves beyond fundamental energy efficiency programming. The BSC provides participating large and medium-sized customers with individual assistance via technical and strategy consultants. Smaller-sized customers receive access to online tools and calculators to help them obtain their energy and sustainability goals via the Companies' Customer Engagement Platforms.

The Business Sustainability Challenge facilitates peer roundtables, organized by market segments, which provide customers with the ability to share best practices and opportunities for collaboration. At the roundtables, C&I customers can share ideas, discuss how to best engage their workforce around energy and sustainability, and begin to develop collaborations that help them tackle harder issues that may have slower paybacks than energy efficiency, but have similarly important social and environmental benefits to Connecticut residents (e.g., renewable energy, cost-effective recycling, material recovery, purchasing, etc.).

For the 2019-2021 Plan, the Companies plan to offer a pilot of SEM cohorts. Cohorts are where a group of customers work together to adopt a more strategic approach in energy management in their facilities. Through the Business Sustainability Challenge, the Companies will explore offering an optional SEM cohort pilot to determine the benefits of working with six to twelve C&I customers whose business operations and/or industries are similar but non-competing (so there are no concerns regarding customer confidentiality). The SEM cohort approach, although not mandatory, should improve the cost-effectiveness and scalability of the Business Sustainability Challenge, allowing practitioners to work with larger groups of customers to deliver trainings, provide roundtables of positive reinforcement, and facilitate peer feedback loops where best practices are shared and to help maintain forward momentum. The SEM cohort pilot will be consistent with that laid out by the Consortium for Energy Efficiency's Strategic Energy Management Minimum Elements."[44]

## Energy Utilization Assessments

The Energy Utilization Assessment ("EUA") initiative is a tool in the Business and Energy Sustainability portfolio that focuses on delivering a standardized approach to facility audits. This approach is action-oriented and geared toward finding holistic energy efficiency solutions for C&I customers focusing on low and no-cost upgrades that can generate substantial energy and financial savings as well as quick

[44] Consortium for Energy Efficiency. *Strategic Energy Management Minimum Elements,* 2014.

paybacks. Through a competitive solicitation process, the Companies have a select group of vendors that provide audit services that are cost-shared with the participating C&I customer. This cost-sharing model filters customer participation to those who are truly serious about investing in greater competitiveness and sustainability solutions than other Business and Energy Sustainability initiatives provide.

The EUA identifies measures and business operations that will generate additional energy efficiency opportunities through the Companies' C&I Energy Efficiency Portfolio. At a minimum, it results in a report that contains a project register that focuses on low to no-cost Energy Conservation Measures ("ECMs") that typically save 10+ percent of a customer's total energy consumption and have under three-year combined payback when conducted under a comprehensive incentive. This project register serves as the initial technical detail used to initiate a SEM with the customer's management team. To emphasize the action-oriented nature of the EUA, the Companies provide reimbursement (incentives) up to the full customer contribution. The Companies calculate this incentive based on energy savings from participation in other C&I Energy Efficiency Solutions, and in addition to the services and incentives provided to them through the EUA initiative.

The Companies will work to claim savings from operational behavioral savings through the Customized Solutions Partnership's SEM Demonstration (detailed later in Section 3.14).

### Process Reengineering for Increased Manufacturing Efficiency

The Process Reengineering for Increased Manufacturing Efficiency ("PRIME") initiative specifically targets Connecticut's manufacturing sector. PRIME engages manufacturers in a systematic approach to identifying inefficiencies and waste in their business operations. Through the PRIME initiative, manufacturers receive training in lean manufacturing techniques to eliminate or reduce waste, improve product efficiency, reduce operating inefficiencies, minimize environmental impacts (reduced GHG emissions), reduce electrical energy consumption, and to streamline manufacturing processes.

Through the PRIME initiative, the Companies conduct a competitive solicitation process for highly-qualified lean manufacturing vendors. These vendors conduct a site-survey to determine what site-specific and market segment-oriented lean manufacturing techniques should be implemented. The Companies offer incentives for energy-efficient equipment through their ECB and EO solutions and provide funding for lean manufacturing training that is based on the energy savings associated with the training.

## CUSTOMIZED SOLUTIONS PARTNERSHIP SEM DEMONSTRATION

The primary objective of the Companies' Customized Solutions Partnership ("CSP") SEM Demonstration ("CSP/SEM Demonstration") is to provide the largest C&I customers, primarily large manufacturers, with the opportunity for strategic, customized energy management solutions that offer electric and natural

gas incentives, analytical services to assist with achieving high levels of energy, and operational efficiencies within their facilities.

For the 2019-2021 Plan, the CSP/SEM Demonstration's other objectives follow:

- Test an enhanced approach for the Companies' current offering based on the ISO 50001 framework for SEM;
- Establish a SEM savings verification protocol for use in Connecticut;
- Test baseline development for whole plant and process boundaries;
- Evaluate impacts on program costs, savings, cost-effectiveness, and cost-ratios; and
- Develop custom, negotiated savings baselines based on whole plant, process line, or major system boundaries.

## Target Market

The target market for the CSP/SEM Demonstration is any C&I customer within the Companies' service territories that have approximately 3 MW of aggregate demand or larger and demonstrates a willingness to sign and commit to a CSP that establishes a multi-year (generally three years in duration) energy efficiency target mutually established upon between the customer and the appropriate utility. A direct sales market strategy will be used for large C&I customers that satisfy the large customer requirement. Throughout the 2019-2021 Plan, the Companies will work with Connecticut Industrial Energy Consumers to ensure their membership is aware of the CSP/SEM Demonstration.

## Background

*Key Customized Solutions Partnership Elements*

Through the CSP, the CSP/SEM Demonstration will facilitate multi-year SEM plans, annual savings targets, and provide streamlined access to the C&I Energy Efficiency Portfolio's incentives and offerings (i.e., technical services and financing on an-as-needed basis). Additionally, the CSP may include other allied services as an integrated and strategic efficiency package, including but not limited to the Connecticut Green Bank's financial offerings.

A typical CSP will include the following attributes and features:

- A non-binding Strategic Partnership Agreement between the customer and the Companies (signed at the officer level);
- A three-year term (typically);

- Established annual electric and natural gas energy savings targets, with at least two percent of historical annual consumption or equivalent process improvements;
- Customer-specific with the necessary flexibility to accommodate issues such as the capital planning process, financial hurdle rates, focus on manufacturing processes (if applicable), and the inclusion of outside engineering and technical services;
- The CSP should be the result of multiple strategic engagements between the customer, the Companies, and any other relevant party requested by the customer to address all relevant areas of the customer's organization; and
- A mutually agreed upon model (e.g., engineering, linear regression, spreadsheet based, DOE 2) developed by the Companies and/or the customer that will be used to estimate savings.

*ISO 50001 & the DOE 50001 Ready Navigator (Optional)*

ISO 50001[45] is an international standard focusing on energy management and is based on the same management principles of continual improvement as ISO 9001 (focusing on quality) and ISO 140001 (focusing on sustainability). The current 2018 ISO 50001 model provides a framework for organizations to:

- Develop a policy for more efficient use of energy;
- Establish targets and objectives to meet the policy;
- Use data to better understand and make decisions regarding energy procurement and use;
- Measure the results;
- Review how well the policy works; and
- Continually improve energy management.

The DOE 50001 Ready Navigator[46] ("Ready Navigator Tool") is an energy management tool designed to walk C&I customers through a step-by-step process of establishing a compliant energy management system ("EnMS"). The Ready Navigator Tool identifies 25 tasks that fall within four sections: (1) Planning, (2) Energy Use Review, (3) Continual Improvement, and (4) System Management and aligns with the Business Sustainability Challenge approach.

The intent of the CSP/SEM Demonstration is to ensure more effective program and solution customization for larger C&I customers. All incentives offered through the CSP/SEM Demonstration will be subject to benefit-to-cost screening to ensure continued cost-effectiveness of the Business and

[45] ISO 50001. Available at: https://www.iso.org/iso-50001-energy-management.html.
[46] ISO 50001 Ready Navigator Tool. Available at: https://navigator.industrialenergytools.com/.

Energy Sustainability solution's initiatives and will be subject to the Companies' current incentive structures and caps. The CSP should be designed to align and integrate with any established sustainability program or goals of the customer. Like the Business Sustainability Challenge, the CSP/SEM Demonstration will track non-energy benefits, such as carbon reductions, increase in productivity, or quality improvements.

*CSP/SEM Demonstration Model*

The CSP/SEM Demonstration will utilize the Business and Energy Sustainability solution's designs, primarily the Business Sustainability Challenge, to help C&I customers design and implement capital retrofit projects, control strategies, and operational and behavioral changes that save energy and reduce energy intensity. A key requirement of the CSP/SEM Demonstration is that the customer must put an EnMS into practice. The structure of the EnMS may be based on the Ready Navigator Tool; however, the Companies will not require ISO 50001 certification. A customer's existing EnMS and practices may be sufficient to meet some or all of the requirements established by the Ready Navigator Tool.

The key difference for the CSP/SEM Demonstration is that retrofit capital projects, end-of-equipment life projects, and operational changes can be incentivized through SEM measurement and verification practices, instead of the traditional ways, such as engineering estimates or deemed savings. Savings will be determined as follows:

- New construction and retrofit project savings and incentives shall continue to be claimed and budgeted through the ECB or the EO solutions (unless claimed through the Business Sustainability Challenge/SEM method); and
- Operational and behavioral SEM savings and incentives shall be determined by means of a mutually agreeable mathematical or software model, after subtracting new construction savings; and
- Savings from equipment purchase through the upstream programs will be subtracted from the SEM savings.

In order to encourage C&I customers (i.e., Connecticut Industrial Energy Consumers) to replace large equipment in advance of end-of-life reasons, the Companies have developed an early retirement program (through the EO solution) to structure incentives to hasten equipment replacement in 21st century manufacturing facilities and state buildings, and large industrials. The Companies will establish incentive budgets based on savings methodologies where the Companies will count the savings from the first five years based on existing conditions; whereas the remaining years of the new equipment's useful life will be compared to code (similar to current practice).

As an initial step, the CSP will be a partnership between the customer and the Companies establishing a commitment to work together to achieve mutually-stated goals tailored to the customer's specific facilities over a multi-year period. The CSP will include customer-specific savings and sustainability goals, the senior management's[47] commitment to provide the resources needed to achieve those goals, the technical assistance to be provided, and the potential achievable incentive funding to assist the customer in achieving such energy goals. This multi-year commitment will set the stage for achieving deeper and more comprehensive energy efficiency savings than a "single measure" or "single year" approach.

*Incentive Strategy*

The CSP/SEM Demonstration's incentive structure is designed to promote a large degree of customer flexibility while focusing on achieving large-scale implementation at modest program cost rates. The basic annual incentive will be calculated in accordance with the Companies' current caps, and the existing C&I Energy Efficiency Portfolio's incentive structures and cost rates in exchange for a stated value of savings to support the customer's internal processes.

CSP/SEM Demonstration energy savings will be based on a predetermined $/kWh (electric) and/or $/ccf (natural gas) incentive[48], as well as process efficiency improvements that result in reduced energy use per unit of production or process. The boundaries and baselines will be negotiated as part of the multi-year CSP development. The CSP will establish the specific savings goals, incentive structures, and commitments of each respective customer. For new construction, facility additions, or end-of-life/retrofit equipment replacement, the incentives will reflect the existing ECB or EO solutions' published incentive structures.

The Companies have allocated approximately $250 million toward large C&I Energy Efficiency Portfolio budgets for the 2019-2021 Plan. Within these budgets, the Companies have allocated approximately $4.5 million over the three-year plan that will be targeted to cover early retirement of equipment (includes post-useful life replacement) in certain market sectors and for Customized Solution Partnerships/Strategic Energy Management Demonstrations.

*Technical Assistance & Strategies*

The CSP will incorporate, where appropriate, additional technical services available to customers, including: operational training, operator certification and energy management support services, employee engagement, and other continuous improvements elements into the CSP through the Business and Energy Sustainability solution. The Companies will work with customers to provide account

[47] A company's "senior management" will be defined as personnel deemed appropriate by the respective parties through the CSP.

[48] The predetermined $/kWh and $/ccf rates will be published alongside other C&I incentive offerings, which are found in marketing collateral, utility websites, and C&I contractor and customer meetings.

management (e.g., training on program offerings, explanation of incentives, etc.) to maximize opportunities to receive energy efficiency incentives. Technical assistance and strategies will include:

- SEM Ready Navigator Tool assistance and training, including: benchmarking, monitoring and tracking, employee engagement, and other continuous improvement elements; and
- High-performance system operations and optimization through:
    - Application of best practices for system operations and optimization for refrigeration, HVAC, compressed air, pumping, motor drive, HVAC, and other process-related systems;
    - Targeted technical training and relevant operator certification for efficient systems operations, such as: Compressed Air Challenge, Pump Systems Matter, Green Motor Management, Certified Refrigeration Energy Specialists, and Building Operator Certification;
    - System commissioning and operator training;
    - Kaizen events and "sleeping plant" audits to identify opportunities; and
    - Support and cost sharing for the establishment of Energy Management Information Systems ("EMIS") to provide key performance indicators and feedback loops to system operators and management.

*Financing*

The CSP provides customers with a flexible framework to explore financing service options, and where appropriate, to leverage Energy Efficiency Fund financing and funds with customer resources. The CSP/SEM Demonstration's financing options will include, but not be limited to:

- Companies' C&I Energy Efficiency Portfolio financing offerings;
- Connecticut Green Bank financing offerings;
- Third-party offerings, such as energy service performance contracts, leasing, energy service agreements, etc.;
- Innovative use of customers' internal funding; and
- Project development support and brokering services.

### Retro-commissioning and Monitoring-Based Commissioning

As buildings age and the occupancy and building use changes, it is important to maintain a building's energy management systems to reduce operational inefficiencies and energy use. The Retro-

commissioning initiative ("RCx") is designed to identify energy-saving opportunities in existing C&I buildings by improving the operation of a building's management system. The RCx initiative helps C&I customers identify low-cost and no-cost non-capital energy-efficient measures that can result in energy savings for the building or facility owner. According to a study by Lawrence Berkeley Laboratory, RCx projects often have simple payback periods of one to two years;[49] therefore, investments in RCx usually have attractive financial returns.

The Companies have conducted a competitive solicitation process for RCx engineering firms. These vendors conduct initial site assessments of a building which is funded partially or in whole by the Companies. If warranted and approved by the customer, the RCx engineering firm will utilize a structured process to create a detailed RCx implementation plan that documents how the facility should be operated to maximize energy efficiency opportunities and improve the facility's overall performance. The Companies provide co-funding for the development of the RCx implementation plan.

The Companies also support monitoring-based commissioning ("MBCx"), which is a continuous optimization process that utilizes sensors and software to keep existing building performing at optimal levels. Additional incentives for additional EEMs are available through the ECB and EO solutions. The Companies also provide custom incentives for measures implemented on a custom basis and that are not addressed by other C&I Energy Efficiency Solutions.

### Operations and Maintenance Services

The Operations and Maintenance Services ("O&M Services") initiative enables C&I customers to "tune-up" or improve the electrical and thermal efficiencies of their operations by making changes and repairs to equipment, and by fixing compressed air leaks and existing infrastructure. Either the Companies' staff or an O&M Services contracted vendor will partner with a participating customer to identify energy efficiency opportunities and support their implementation.

O&M Services provides a number of improvements that maximize operational efficiency and optimize performance, including: compressed-air system leak studies and repairs, modifications and/or repairs to building management system control components and software programming, and stream trap repairs and upgrades. The Companies have designed custom incentives that are based on the associated costs and energy savings resulting from the energy efficiency improvements.

[49] Evan Mills. Lawrence Berkley National Laboratory. *Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse-gas Emissions,* 2009. Available at: http://cx.lbl.gov/documents/2009-assessment/lbnl-cx-cost-benefit.pdf.

## 3.15 C&I DEMAND REDUCTION STRATEGIES

Throughout 2017 and 2018, the Companies have dedicated resources toward testing active demand reduction technologies and initiatives for the C&I marketplace.

### EVERSOURCE DEMAND REDUCTION STRATEGIES

Throughout 2017 and 2018, Eversource has dedicated resources toward testing active demand reduction technologies and demand response initiatives for the C&I marketplace. During the 2019-2021 Plan, Eversource will use the knowledge gained from the 2018 Demand Response pilots to construct offerings that incentivize active demand reduction strategies and measures that enable them. These offerings could include but are not limited to: traditional demand response direct-load controls and software and controls, and storage. Eversource would manage these demand reduction assets through the use of innovative control structures that will allow Eversource to coordinate dispatches.

### UNITED ILLUMINATING DEMAND REDUCTION STRATEGIES

During the 2019-2021 Plan, United Illuminating will transition its active demand response pilots into full-fledged solutions, while adding new customers and additional controllable demand reduction technologies. The continuation of the existing pilots as programs during the 2019-2021 Plan is a critical step in understanding the local demand response markets and in starting the logical process of integrating demand response and energy efficiency tactics into one comprehensive offering to increase the value to customers and decrease costs to United Illuminating. These demand response programs will allow United Illuminating to gather additional event data to better assess and quantify the potential active demand reductions associated with each demand response technology and/or strategy and any associated energy savings.

### COMMON TO EVERSOURCE AND UNITED ILLUMINATING

Not limited solely to summer peak demand reductions, the Companies' Active Demand Response ("ADR") programs can also be useful for ramping (ISO-NE dispatch only), load curtailment, distribution system operational needs and shortage events, as well as winter demand reduction needs. Automation and advances in technology make it possible to manage customer loads in new ways with strategies that bring additional values to Eversource, United Illuminating, and the customer.

After the three-year 2019–2021 Plan period, Eversource, United Illuminating, and their respective active Demand Response program vendor(s) will assess the:

- Demand reduction (kW) associated with the active demand response component of each program;

- Customer participation rates vs. opt-outs; and
- Customer satisfaction and engagement with the programs.

Where possible, all of the Demand Response programs will be integrated and co-delivered with the Companies' existing C&I Energy Efficiency Portfolio offerings to increase the value to customers and decrease costs to Eversource and United Illuminating. Eversource and United Illuminating will look to integrate Demand Response program offerings with other C&I Energy Efficiency Solutions. During program implementation, the Companies understand that customer education regarding Demand Reduction initiatives is imperative. During the 2019-2021 Plan, Eversource and United Illuminating will look to educate customers regarding the benefits of Demand Response programs, the technologies used in the Companies' pilots, and the financial incentives and rebates that will be offered.

### Eversource: 2019-2021 C&I Demand Response Solutions

Eversource envisions developing a C&I curtailment active demand reduction offering that is *technology agnostic* and provides an incentive for verifiable shedding of load in response to a signal or communication. Typical technologies or strategies used to curtail load include energy management systems, building management systems, software and controls, HVAC controls, lighting with controls (manual, networked system or integrated), process offsets, any open ADR compliant technology, startup sequencing, among other customer facility specific approaches. Since the offering is technology agnostic, Eversource will be able to incent the performance of customers adopting innovative and emerging demand reduction technologies, including storage technologies. Customers can use any technology or strategy at their disposal and be incentivized based on the performance of their curtailment.

This approach would use Curtailment Service Providers to assess curtailment opportunities at a facility and deliver curtailment services to enrolled customers. Curtailment Service Providers would identify curtailment opportunities, as well as demand charge and Installed Capacity ("ICAP") tag management opportunities and present a complete curtailment proposal to the customer. The demand charge and ICAP tag management aspects provide opportunities for direct bill savings to customers.

Customers and Curtailment Service Providers respond to dispatch signals or any number of criteria specified by Eversource, generally using a system peak trigger. Events will be called the day before curtailment is needed. The core model remains focused on reducing demand during summer and winter peak events typically targeting fewer than 20 hours per summer. The goal of the offering is to call events at times of peak energy use. For customers participating in ISO-NE demand response markets, ISO-NE event days will be excluded from baseline calculations. This approach would be structured to avoid interfering with the ISO-NE programs or penalizing customers for participating in both programs.

This approach would constitute a new service offering to the C&I Energy Efficiency Portfolio and would provide value to large C&I customers and generate claimable benefits, primarily avoided capacity, transmission and distribution ("T&D"), and capacity DRIPE.

## United Illuminating: 2019-2021 C&I Demand Response Solutions

*Commercial & Industrial - Targeted Auto Demand Response*

Targeted demand response used to defer investments in distribution systems can be a valuable tool to solve localized load growth issues. Targeted demand response programs, such as United Illuminating's C&I Auto Demand Response pilot can often defer distribution system investments for multiple years.

For the 2019-2021 Plan, United Illuminating will look to grow its C&I Auto Demand Response pilot by adding additional customers. Initial customers targeted are those that are served by the Woodmont and Ash Creek substations in southwest Connecticut and who are able to commit a minimum of 50 kW in demand reductions. These two substations have been identified by United Illuminating and ISO-NE as critical peak demand reduction areas, particularly for the FCM. Geo-targeting could potentially increase the cost-effectiveness of this C&I demand response pilot, and increase the benefits attributed to demand response programs.

C&I demand response programs tend to require a high degree of customization around specific customer capabilities and will often only target non-process or critical loads. Besides the typical HVAC loads associated with typical C&I demand response programs, the C&I Auto Demand Response pilot is also looking to identify new and advanced demand response technologies and practices, including connected equipment, and energy management and analytic systems. These new demand response technologies include advanced thermostat controls for HVAC systems, and advanced/smart energy management systems that through sensing, feedback, and the use of algorithms, can control a building's performance holistically for minimized energy use and cost

Customers within this pilot will receive a base $/kW for committed load reductions plus a $/kWh performance incentive based on actual energy reduced during an event.

*Small Business: Direct Load Control –Smart Wi-Fi Thermostat (HVAC)*

Very similar to the residential Room A/C Smart Plug program, United Illuminating's Small Business "Bring Your Own Thermostat ("BYOT")" program will continue to target small C&I customers with installed connected Wi-Fi thermostats. The thermostats used for these small businesses are the exact same connected Wi-Fi thermostats utilized in residential households. Therefore, the participating small businesses are treated as a subset of customers controlled through the utility portal for the United Illuminating's Residential Direct Load Control Wi-Fi Thermostat program.

For the 2019–2021 Plan, United Illuminating will look to expand its existing program customer base with additional customers beyond the original pilot's targeted 50 customers. United Illuminating will experiment with different marketing approaches to reach more customers and try to better understand the incentives required to motivate and sign up customers.

## 3.16 MARKET SEGMENTATION

For the 2019-2021 Plan, the Companies will once again utilize usage-driven market segmentation to determine where C&I priorities should be focused and ensure that these priorities are balanced for both magnitude (energy savings) and equity (number of participants). The Companies further refine their market segmentation through customer interest, their own experiences, Trade Ally Networks, and stakeholder input.

The Companies reviewed additional sources of market intelligence information to determine the 2019-2021 C&I priority market segments including: efficiency industry research (i.e., ACEEE, Consortium for Energy Efficiency, E Source), industry experts, industry trade organizations and their staff, industry trade publications, and national, regional, and state databases.

The 2016-2018 Plan was the first three-year plan where the Companies used market segmentation analysis and research to focus their efforts on priority C&I market segments. The Companies' endeavor proved successful in transforming the C&I customer's approach strategy from program-oriented to customer-centric. This paradigm shift required the Companies to conduct granular market segmentation research to aid in the development of more and effective market-segmented approaches to service delivery.

The Companies' significant market research not only identified the priority C&I customer market segments that should be targeted for efficiency assistance, but also helped the Companies to understand what market actions, energy-efficient equipment, process improvements, and financing mechanisms would best suit a customer's business needs and market segment. Sections 3.17 and 3.18 include market segment summaries for the priority C&I market segments targeted for the 2019-2021 Plan. The intent of these summaries is to highlight at a distilled level:

- Definition and description of the market segment to be targeted;
- Listing of the significant electric and natural gas end uses, systems, and equipment;
- Barriers to efficiency investment that are unique or particularly pronounced in the market segment; and
- The Market Actions (i.e., Trade Ally Networks, C&I Energy Efficiency Solutions, Alliances & Associations, and Conduit to Sustainability) that the Companies will package together to offer effective market-segmented approaches in delivering energy efficiency.

The Companies will continue their market segmentation research and targeted solutions efforts for the 2019-2021 Plan. Additionally, the Companies will further expand their focus on several new priority

market segments, including: (1) Aerospace and Defense, (2) Information, Communications, and Technology, (3) Distribution, Fulfillment Centers &Warehousing, and (4) Utilities and Transportation.

The initial target markets identified for priority focus during the 2019-2021 Plan include[50]:

Commercial Market Segments

1. Commercial Real Estate (office buildings and office spaces);
2. Retail Stores;
3. Restaurants;
4. Hospitality (Lodging);
5. State and Municipal Government;
6. Hospitals and Healthcare Facilities;
7. Higher Education (state colleges, community colleges, and technical high schools);
8. Information, Communications & Technology;

Industrial Market Segments

9. Distribution, Fulfillment Centers & Warehousing;
10. Utilities and Transportation;
11. Manufacturing; and
12. Aerospace and Defense.

[50] No priority implied within this listing.

# 3.17 COMMERCIAL MARKET SEGMENTS

## COMMERCIAL REAL ESTATE

### Definition and Description

A Commercial Real Estate building or complex is defined as any office or retail property that can be bought or sold in a real estate market. According to ENERGY STAR, energy use is the single largest operating expense in commercial office buildings, accounting for one-third of typical operating budgets and almost 20 percent of the nation's GHG emissions.[51]

Connecticut has a significant amount of commercial and professional office space, including the target markets of Professional Services and Real Estate Management, which account for approximately 60,000 electric customers. Additionally, Connecticut serves as the financial and insurance industry hub of the nation, and firms like Aetna, The Hartford Financial Services Group, Traveler's Property Casualty Group, and Phoenix have headquarters and regional facilities located throughout the state. These large firms conduct their business operations in large complex buildings and facilities that fall under the Commercial Real Estate market sector. Typically, these buildings are owner-occupied, and the Companies can work directly with the insurance/financial firm to implement energy-saving improvements. For smaller firms, the building typically falls into a tenant-occupied scenario.

Commercial office building space can be segmented into two types: (1) owner-occupied or (2) tenant-occupied, and are also categorized into the Class types listed below:

- Class A Office Buildings. These building are known for their high-quality construction and features. They are relatively new and located in desirable locations; allowing the building owners to command higher rents and attract high-quality tenants.
- Class B Office Buildings. Typically, a little older than Class A, these buildings still have quality infrastructure, property management, and tenants. Investors typically see Class B buildings as "good investment opportunities" for implementing renovations and common area improvements that can restore the building's status to a Class A property.
- Class C Office Buildings. These are older buildings with outdated building equipment, technologies, and infrastructure that need extensive renovations are typically located in less desirable locations.

[51] EPA. *Commercial Real Estate: An Overview of Energy Use and Energy Efficiency Opportunities*. Available at: https://www.energystar.gov/sites/default/files/buildings/tools/CommercialRealEstate.pdf.

The local real estate market determines the Class type rating of a commercial real estate building. So, a building located in downtown New Haven may be rated a Class B office building, while the same building located in a smaller suburb would be considered a Class A. For purposes of energy efficiency, the Companies will typically see energy-saving opportunities arise from real estate improvements made to Class B and Class C buildings.

Institutional office spaces, often occupied by government agencies, non-profits, and educational institutions, constitute another subcategory of the Commercial Real Estate market segment. Office spaces are further defined by size; from the large multi-story buildings found in urban centers to the small low-rise units found in the suburbs.

The Commercial Retail Estate segment represents 32 percent of the Small Business sector. These office spaces operate during typical business hours on non-holiday weekdays. This results in limited energy consumption during the evening, nighttime, and weekend periods.

### End-Uses, Systems & Equipment

The end-uses, systems, and equipment found in office environments share commonalities across all types of Commercial Real Estate sector's subcategories, such as facility sizes, classes, and ownership structures. Major sources of energy use include, but are not limited to: elevators, employee kitchens and lunchrooms, HVAC equipment and systems, lighting and controls, and plug loads (e.g., office equipment, televisions, etc.). Specifically, for HVAC equipment and systems, these are often the responsibility of the building owner and tenants cannot control or upgrade them without the building owner's consent.

### Barriers to Participation

Commercial office space decision makers are primarily concerned with occupant comfort and return on investment. While the logic behind installing energy efficiency upgrades is understood, there is often reluctance by decision makers to move forward with energy-saving improvements due to concerns that tenants will be unhappy with the changes. Additionally, many commercial real estate owners are not aware of the Companies' C&I Energy Efficiency Solutions and how efficiency upgrades can help their bottom line. The perception is that efficiency measures are a sunk cost. To overcome these barriers, the commercial real estate owners must be persuaded through case studies highlighting survey data indicating that tenants support green buildings through paying higher rents, and that efficient HVAC equipment and lighting systems do increase occupant comfort and health, as well as drive productivity.

Additionally, for most commercial real estate leasing transactions, utility costs are often a pass through to the tenant as part of monthly lease costs. The perception of the commercial real estate property owner is that this means there is no benefit in moving forward with an energy efficiency project as it is

the tenant's issue. A way to overcome this barrier is to speak to a Commercial Real Estate property owner's business interests—financial—to convince them that energy efficiency improvements will improve their net operating income and asset value. Additionally, metering also plays a role in creating barriers to energy efficiency. Some buildings are master metered and divided, while others are sub-metered, and the utilities are paid by the tenants. Therefore, it is a harder sell to convince a tenant in a master-metered building to implement an energy-saving project as they won't see the benefits on their utility bills.

### Market Actions

The Companies will employ several Market Actions throughout the 2019-2021 Plan to drive this market sector's participation in the C&I Energy Efficiency Portfolio. These will include:

- Specialized Retrofit Contractors. In the small to mid-market office spaces, the Companies rely on the use of specialized retrofit contractors to manage and deliver efficiency services to office markets in a quick and effective manner. The Companies have delegated authority to these contractors to manage each project comprehensively. While the Companies recognize that the primary retrofit opportunities in occupied small and mid-market office spaces is in lighting and plug load, the retrofit contractors will be incentivized to perform more comprehensive projects that address more complex building systems, such as HVAC equipment and controls. Additionally, behavioral energy efficiency measures could result in energy savings.
- Tailored Approaches for Real Estate Management Companies. The Companies have a small number of accounts held by real estate management companies that own and/or manage larger buildings or portfolios of buildings. Ownership of these buildings is through individual companies, institutional investors, and Real Estate Investment Trusts ("REITs"). REITs have different investment objectives and ownership horizons than their smaller peers and the buildings they own tend to use more energy in total. REITs tend to have in-house financial resources and technical expertise allowing the Companies to offer packaged marketing and tailored approaches to energy efficiency projects.

  The Companies will look to initiate Multi-Year Energy Planning Agreements to implement energy efficiency upgrades over a long-term period.
- Intervention in the Early Design Phase. The objective of this initiative is to offer building owners and designers a menu of efficiency services and incentives tailored to complement each customer's ownership objectives and investment criteria.
- Whole Building Design Solutions. For larger C&I buildings, services can range from a packaged solution of expert design and engineering assistance and incentives at the level of the whole building design (project is still in concept stage), to similar assistance with one or two

components where the project is more advanced, to prescriptive incentives for pre-selected energy-efficient equipment—or a mix of all these options. This allows the Companies to deliver a tailored solution to the individual customer's energy needs.

- Tenant Improvement Process. When an office space is vacated by one tenant and refitted for occupancy by a new one (the tenant improvement process), there is a market-based opportunity to capture the energy savings potential during this time. This opportunity also arises in new office building during the initial leasing phase (tenant fit-out). During the tenant improvement/tenant fit-out process, the office space is typically vacant, and decisions are made regarding space design and lighting fixtures selection to fit the needs of the new occupants.

  This is the opportune moment for energy efficiency; as both the tenant and owner are actively thinking about the space and their individual business needs and are already prepared for renovations. The Companies can also play a pivotal role in providing information regarding other sustainable solutions beyond energy efficiency, such as renewables and electric vehicle charging stations, which can be easily included with the ongoing energy efficiency project.

- Sustainable Office Design Package. This sustainable office design initiative will provide enhanced services to building owners and prospective tenants that aligns with the market-based tenant improvement/tenant fit-out process opportunity to integrate energy efficiency into open office concepts. This Market Action encourages both the owners and tenants to consider function-based integrated lighting and controls solutions that are specifically designed for the future occupant and their business needs. This is another opportune moment for the Companies to serve as the conduit to other sustainability initiatives, such as electric vehicle charging stations and the integration of renewable energy technologies.

## RETAIL STORES

### Definition and Description

There are almost 5 million commercial buildings in the United States and retail buildings account for the largest energy costs with nearly $20 billion each year and are responsible for the second largest percentage of GHG emissions, contributing to global climate change.[52] According to the Connecticut Retail Merchants Association, the 41,900 retail establishments across the state employ more than 470,000 people and contribute more than $34 billion to the state's economy.[53]

[52] EPA ENERGY STAR. *Retail: An Overview of Energy Use and Energy Efficiency Opportunities.* Available at: https://www.energystar.gov/sites/default/files/buildings/tools/SPP%20Sales%20Flyer%20for%20Retail_1.pdf.
[53] Connecticut Retail Merchants Association. Available at: https://crmaonline.com/what-we-do/.

Ninety-five percent of retail establishments are small businesses that employ less than 50 people.[54] There are many types of retail establishments[55] that deliver varied services and goods to the state's consumers and they include:

- Motor Vehicle and Parts Dealers. There are 2,389 retail establishments that sell motor vehicles and auto parts in Connecticut and employ 22,057 people.
- Furniture and Home Furnishings Stores. There are 1,223 furniture and home furnishing stores in Connecticut that support 6,993 jobs.
- Electronics and Appliances Stores. Approximately 990 retail establishments sell appliances and electronics across the state that generate 6,846 jobs.
- Building Material, Garden Equipment, and Suppliers Dealers. More than 1,500 retail stores sell garden equipment and building materials across Connecticut, supporting 15,587 jobs.
- Food and Beverage Stores. There are 3,875 grocery, convenience, and liquor retail stores in Connecticut that support 47,838 jobs. These include small markets, franchised operations, small in-state chains (Stew Leonard's), regional chains (Stop & Shop and Big Y), and national operators (Walmart and Costco).
- Health and Personal Care Stores. Approximately 2,200 retail establishments sell health and personal care products across Connecticut employing 14,594 people. These include beauty salons, barber shops, professional beauty salons and supply stores, and nail salons.
- Gasoline Stations. There are 1,148 gasoline stations across Connecticut that employ 6,695 people.
- Clothing and Clothing Accessories Stores. Approximately 3,170 retail establishments sell clothing and clothing accessories (e.g., hats, shoes) in Connecticut that support 21,121 jobs.
- Sporting Goods, Hobby, Book, and Music Stores. More than 1,500 retail establishments sell books, music, arts and craft supplies, and sporting goods across Connecticut. These stores employ 9,262 people.
- General Merchandise Stores. There are 678 general merchandise retail stores in Connecticut that sell a variety of merchandise, including grocery, clothing, shoes, and home décor. General Merchandise stores employ 28,418 people.

[54] Price Waterhouse Coopers. *The Economic Impact of the U.S. Retail Industry*. Report cited on the National Retail Federation's website: https://nrf.com/advocacy/retails-impact.
[55] National Retail Federation. Retail's Impact on Connecticut. Available at: https://nrf.com/advocacy/retails-impact/ct#explore-data.

- Miscellaneous Retailers. There are 4,280 miscellaneous retail establishments in Connecticut that support 18,865 jobs.
- Non-Store Retailers. These establishments include professional services, such as doctors, dentists, orthodontists, veterinarians, and tax preparation advisors. There are 8,688 non-store retail establishments in the state that employ 21,281 people.
- Restaurants. For the 2019-2021 Plan, the Companies will continue to treat this sub-segment of Retail Stores as its own Market Segment. Please see the next Commercial Market segment for more information.

### End-Uses, Systems & Equipment

The retail store environment is generally consistent in the end-uses, systems, and equipment found within it across facility sizes, classes, and ownership structures. Major energy users include: HVAC equipment, lighting, motors, refrigeration, and plug loads (e.g., office equipment, cash registers, and televisions, etc.).

### Barriers to Participation

The primary focus of a retail store is ensuring that the customer receives great customer service and is satisfied with their purchase and experience. A retailer may be hesitant to make any building upgrades that could be perceived as reducing convenience, comfort, or the brand.

Product quality, cleanliness, and presentation are the primary focuses of retail store operations. Retail store operators are unwilling to risk any action that compromises these priorities, or that affects the presentation and/or the general retail shopping experience. Energy efficiency is perceived to connote dimmer lighting and more temperature and humidity discomfort for shoppers. For food and beverage retail stores, grocery operators are concerned about product safety and quality and that energy efficiency measures will result in “warmer” refrigerated and frozen products in coolers and freezers.

Another barrier to energy efficiency is that retail stores have many and varied priorities for capital investments and efficiency efforts must compete aggressively for funding. The Companies can overcome this barrier by properly conveying the economic benefits of investing in energy efficiency. For example, with a 2 percent profit margin, a retail store that saves $1 in energy expenses through some efficiency investments provides a bottom line equivalent to generating $50 in product sales. Reducing an operations and maintenance expense (energy) by $1 is easier than receiving, handling, displaying, and then selling $50 in products to equal the bottom line effect of “earning” $1 in energy savings.

### Market Actions

There is significant potential to obtain comprehensive energy savings within the retail store market segment, both in aggregate across all retail store operators, and at each individual location, with the

installation of lighting, refrigeration, ventilation, cooling, motor, and heating saving measures. HVAC and lighting energy efficiency measures, such as LED cooler lighting and HVAC retro-commissioning and controls, improve both product presentation and the retail environment. In a low margin and highly competitive environment, energy efficiency represents a quick and effective opportunity for a retail store operator's competitive position.

*Comprehensive Solutions*

Through the Companies' Business Energy Advantage (Retrofit) and Small Business Energy Advantage solutions, the Companies will offer packaged marketing and tailored solutions to the energy needs of the retail sales market segment. These packages involve turn-key analysis, design, and implementation solutions to serve the energy-saving needs of retailers. Retrofit implementation contractors are skilled in delivering these services without compromising the quality of the products for sale or the shopping experience.

Comprehensive energy-saving packages for retailers can include:

*Lighting*

- Integrate advanced LED products and systems with advanced lighting controls for several modes of varying lighting system operations in response to a variety of control inputs; and
- For this industry sector, the installation of LED lighting and controls throughout the retail environment and in storage/warehouse areas can reduce energy use significantly, as well as initially tuning light levels and daylight sensors. This includes the task tuning and use of motion sensors and timers.

*Heating, Ventilation, and Air Conditioning and Refrigeration ("HVAC-R")*

- Re-commissioning HVAC-R;
- Adjusting condenser fan speeds to regulate condenser capacity based on actual heat rejection load rather than solely on system operating pressure;
- Adjust HVAC unit supply air fan speeds to the level required to meet air volume requirements of current operating modes (e.g., cool, dehumidify, heat, ventilate);
- Ensure all major energy-consuming systems are operating correctly and using optimal and specifically-configured control systems and set points for key input variables, such as flow, pressure, temperature, time, etc.
- Upgrade and specify variable speed control of major HVAC rooftop unit supply air fans, with programming to optimally address heating, ventilate-only, and cooling modes.

- Install communications modules, input and output boards, and related equipment to control the condenser fan variable frequency drives ("VFDs") and rooftop unit supply air fans, including: temperature and humidity sensors, and pressure transducers to facilitate condenser fan temperature difference control;
- Install variable speed and temperature difference controls for refrigeration condenser fans;
- Adjust low and medium temperature commercial refrigeration system racks to an optimal and specific minimum condensing set point temperature, and install associated temperature difference controls; and
- Replace conventional motors with ECMs or Q-Sync motors, as they become more well-known and understood.[56]

## RESTAURANTS

### Definition and Description

Restaurants are a driving force of Connecticut's economy and workforce. According to the Connecticut Restaurant Association, in 2017 there were 7,877 eating and drink locations in Connecticut.[57] These establishments employ 154,100 restaurant and foodservice workers in Connecticut representing nine percent of employment in the state. In 2017, Connecticut restaurants were projected to have over $7.5 billion in sales. Connecticut's restaurant sales and workforce are expected to increase over the next decade. By 2027, employment in the Connecticut restaurant industry is expected to grow by 7.1 percent to create a workforce of 165,100 in the state.[58] Restaurants can be segmented into three broad categories:

- Quick Service or Fast Food (Takeout). These establishments are often chains or franchises (e.g., Dunkin Donuts, McDonald's, etc.) where customers place their orders at a drive-through or counter and either seat themselves or carry the food out. The menus are set, and customers have limited abilities to customize their orders.
- Midscale. Often chains or franchises, such as Chili's or Red Robin, these restaurants feature table service and more extensive menus for food and drink. There is moderate turnover for tables, and more ambience and décor in these establishments, with several restaurants are centered on food themes (e.g., Olive Garden = Italian).

[56] Fricke, Brian and Bryan Becker, Oak Ridge National Laboratory, Q-Sync Motors in Commercial Refrigeration: Preliminary Test Results and Projected Benefits. Sep. 2015. Available at: https://info.ornl.gov/sites/publications/files/Pub58600.pdf. A Q-Sync motor is a permanent magnet synchronous AC motor that can directly use grid-supplied AC current without the need to rectify to DC.
[57] Connecticut Restaurant Association, www.ctrestaurant.org.
[58] See 31 id.

- Upscale. These fine dining restaurants focus on ambience, food presentation, luxurious décor, and making the establishment a dining experience. Reservations are typically required, and table turnover is low.

The US Energy Information Administration ("EIA") reports that food service (restaurants) are the most energy intensive commercial buildings in the United States. The two biggest drivers of restaurants' high energy use are: (1) cooking and (2) refrigeration.[59] Restaurants use about 2.5 times more energy per square foot than other commercial buildings. This intensive energy use is a direct effect of the long operating hours, climate control equipment loads, and specialized commercial kitchen equipment.

### End-Uses, Systems & Equipment

While the energy needs do vary across the three restaurant categories, they do share commonalities for certain end-uses, equipment, and systems that include:

- Cooking Equipment. Commercial kitchen equipment is energy intensive and includes: steamers, fryers, convection ovens, griddles, holding cabinets, combination ovens, broilers, and ranges.
- Refrigeration Equipment. Commercial kitchens need to keep food and drinks cold, so typically have the following refrigeration equipment: reach-in refrigerators and freezers, walk-in refrigerators, and ice machines.
- Lighting Fixtures. Key lighting areas in a restaurant includes: dining areas, kitchens, storage rooms, break rooms, and restrooms. Kitchens normally have relatively high light levels for food preparation.
- HVAC Equipment and Systems. A restaurant's climate control equipment loads can be attributed to its HVAC systems, kitchen ventilation systems, kitchen exhaust systems, windows, and patio heaters.
- Water Heating. Commercial kitchens utilize a lot of hot water to wash dishes and for cooking equipment. Typical water heating equipment includes: aerators, spray valves for dishwashing, commercial water heaters, and dishwashers.

### Barriers to Participation

In February 2018, the National Restaurant Association released its 2018 *The State of Restaurant Sustainability* report.[60] The report surveyed 500 restaurateurs regarding their energy efficiency and

[59] US Energy Information Administration, 2012 Commercial Buildings Energy Consumption Survey. Released March 18, 2016. Available at: https://www.eia.gov/consumption/commercial/reports/2012/energyusage/.
[60] National Restaurant Association, 2018 State of Rel. Feb. 2018. Available at: https://www.restaurant.org/getattachment/News-Research/Research/State-of-Restaurant-Sustainability/Sustainability_FINAL_pdf.pdf.

sustainable business practices. The report indicates that the use of energy-saving equipment and practices in restaurants is common with eight in 10 restaurateurs using energy-efficient lighting; four in 10 using ENERGY STAR-rated freezers, ice makers, and refrigerators; and six in 10 using programmable HVAC thermostats.

Restaurants have longer-than-normal operating hours and utilize significant amounts of energy to maintain optimal lighting and climate-controlled environments to satisfy their patrons. The restaurant industry has a high-failure rate with many kitchens closing shop within their first three years. Many owners are focused on just trying to keep the business open and bills paid to think about the long-term benefits of energy efficiency. Additionally, many restaurant owners lack the expertise and time to understand the energy efficiency opportunities available to them through the C&I Energy Efficiency Portfolio.

An additional barrier is the perceived inferior quality of energy-efficient lighting and equipment by some restaurant owners who worry that implementing energy efficiency solutions will negatively affect the ambience or décor of a restaurant, particularly in upscale markets.

### Market Actions

The Companies will continue to partner with local trade associations, including the Connecticut Restaurant Association, the Hospitality Tourist Management program at University of New Haven, and national associations like the Green Restaurant Association.

The Companies will look to offer customized and packaged energy efficiency solutions to this market segment throughout the 2019-2021 Plan by integrating financing programs and technical assistance into a packaged solution that caters to the Restaurant market sector's intricacies and energy needs.

## HOSPITALITY (LODGING)

### Definition and Description

There are over 400 hotels, motels, and inns located throughout Connecticut that employ thousands of residents and bring in billions of dollars per year of economic revenue for the state. According to the Connecticut Lodging Association, the hotel industry employed 27,471 employees to service 41,000 guest rooms statewide in 2017. In 2017, hotel sales (revenue plus certain taxes) increased to $3.3 billion, including $608 million for hotel operations.[61]

Lodging facilities vary across the industry and state. From low budget motels to five-star complexes with luxury rooms, on-site spas, and pools, the Connecticut lodging industry has a variety of hotels for customers to choose from. More than 70 percent of US hotels are either part of a national chain or

[61] Connecticut Lodging Association, www.ctlodging.org.

franchise of one. As the lodging industry has grown, these commercial buildings are being designed or renovated to meet the needs of varied market demographics.

There are hotel facilities designed to meet the needs of the business traveler (e.g., airport hotels, convention hotels, etc.), the long-term lodger (i.e., suite hotels), and the recreational traveler (e.g., condominium hotels, motor motel/hotels, resort hotels, or timeshares). These three broad categories can be further stratified by the industry's luxury and amenity levels (one through five stars), frequent customer reward systems, reward-based pre-requisites, and varied ownership models (e.g., chain, franchise, individual operator, etc.).

A growing trend in the hotel and lodging industry is sustainability, particularly for national chains. Over the past few years, many hotels began promoting the reuse of towels and linens through placards or signs educating hotel guests regarding the hotel's sustainability efforts. Through groups such as the Green Hotels Association, the World Travel and Tourism Council ("WTTC"), and the International Tourism Partnership ("ITP"),[62] hotels are exploring new ways to improve their corporate image, reduce operating costs, and reduce their carbon footprints. For example, the Hotel Carbon Measurement Initiative ("HCMI") is a methodology and tool which enables hotels to measure and report on carbon emissions in a consistent way. The HCMI was developed by ITP and the WTTC in partnership with 23 global hotel companies, including Hilton, Hyatt, Marriott, and Starwood.[63] The data collected by the HCMI can help the hotel industry expand its efforts in identifying sources of carbon emissions and negative environmental impacts, and making significant changes to building equipment and operational processes, particularly through comprehensive energy efficiency projects. The Companies' alignment and support of hotels' sustainability goals with energy efficiency can encourage comprehensiveness.

### Barriers

As noted, the hotel industry is a 24/7 operation that is centered round the comfort and well-being of its guests. According to ENERGY STAR, the United States has 47,000 hotels and motels which spend six percent of their operating costs each year on energy.[64] The lodging industry operates around the clock, and hotel buildings often include guest rooms, lobbies, restaurants and banquet facilities, offices, swimming pools, and retail stores. Guests use on-site facilities for their personal use, including: ice machines, kitchen units, laundry rooms, and vending machines.

The average guest room consumes $2,196 on energy costs annually.[65] The primary challenge for the lodging industry is the guest energy activity level. Each guest (hotel room) can adjust their own unit's

[62] International Tourism Partnership. *Carbon Emissions*. Available at: https://www.tourismpartnership.org/carbon-emissions/.
[63] See 43 id.
[64] ENERGY STAR. *Facility Type: Hotels and Motels.* Revised December 2007. Available at: https://www.energystar.gov/sites/default/files/buildings/tools/EPA_BUM_CH12_HotelsMotels.pdf.
[65] See 43 id.

thermostat, leave lights on in unoccupied rooms, use large amounts of water, and leave windows and doors open. This increases operating costs but does not bring in additional revenue for the hotel occupied.

Additionally, the on-site amenities and services offered by a hotel can also increase the building's energy consumption. Spas, pools, on-site restaurants, and common areas are designed to entice customers to visit hotels; however, these on-site amenities demand large amounts of energy to maintain climate-controlled environments, enhance the guests' stay at the hotel, and to create a destination experience that will increase the likelihood of a guest to return. Hotel owners are focused on providing these amenities to increase profits and are not as interested in pursuing energy efficiency upgrades that are not "seen" by the customer as valuable.

### End Uses, Systems & Equipment

Typically, nearly 75 percent of a hotel's or motel's energy use can be attributed to space heating, water heating, lighting, and cooling combined. The lodging industry is a 24/7 full-service operation that revolves around the comfort and well-being of its customers, especially those hotels that provide on-site amenities and services (e.g., exercise facility, pools, spas, etc.). While a proportionate share of energy consumption varies by the building type and on-site amenities (budget motel vs. full-service convention hotel), the following end uses are important in the lodging sector: cooking, HVAC, lighting, pool pumps, refrigeration, and water heating.

### Market Actions

The lodging industry sees a cyclical renovation process occur across hotel properties for both "soft goods" renovations and "hard goods" renovations to maintain aesthetic value, increase the comfort of guests, and to refresh the building's look and feel. A hotel room or facility is typically upgraded with new soft goods renovations (e.g., new comforters, carpets, pillows, etc.) every three to seven years. Hard goods renovations (e.g., new furniture, room renovations facility upgrades, etc.) are more expensive and typically occur every 15 years. These building upgrades are demanding on hotel operators because they need to be planned and implemented as not to detract from the overall guest experience. These also typically occur when a hotel has been bought by another hotel/franchise or is being upgraded within the suite of hotel offerings of a national chain (e.g., Courtyard by Marriott being upgraded to a Marriott Hotel).

These planned renovations present a significant opportunity for the Companies to work with the hotel owner/operator to work in energy efficiency upgrades to guest rooms and other hotel facilities, such as check-in desks, conference rooms, and common areas. This is because the hotel operator/owner is already prepared for a major disruption to their business and the design and construction trades (e.g., electricians, HVAC installers/servicers, etc.) have already been engaged to renovate the hotel for the hard goods renovations.

The Companies began integrating this strategy of combining energy efficiency retrofits with planned hotel upgrades during the 2016-2018 Plan and will continue to employ this engagement technique throughout the 2019-2021 Plan. Guest room energy-saving measures deemed effective include: occupancy sensors, time-clock controls, and thermostat setbacks. The Companies will also promote the BES solution to promote energy-saving measures and other sustainable opportunities (i.e., water savings), especially the Retro-commissioning initiative.

Throughout the 2019-2021 Plan, the Companies will work with hotel and motel chains, trade organizations and groups (e.g., Connecticut Lodging Association) to increase the awareness of energy efficiency opportunities in the state's lodging industry. Additionally, the Companies will promote newer technologies that increase efficiency and sustainability in hotel operations. For example, to save energy and water, the Companies may encourage a hotel to install an ozone laundry system that uses ozone as a detergent-less laundry solution. In addition to reducing the amount of energy and hot water needed to clean sheets and towels, this laundry system also kills microorganisms found in dirty sheets and towels without the use of harmful chemicals (i.e., bleach). This sector could also benefit from high-efficiency heat pump technologies for space heating and water heating.

## STATE AND MUNICIPAL GOVERNMENT

### Definition and Description

The State and Municipal Government sector is an important market segment for the Companies with state and municipal government buildings and facilities alone representing 18 percent of the Companies' commercial sector sales (electric and natural gas). This market sector includes both state buildings (including executive, judicial, and legislative branch services) and municipal public buildings (including boards of education and public works).

- State Buildings. There are 3,200 state buildings distributed across Connecticut that have 35 million square feet of space that have annual energy expenditures exceeding $70 million, which works out to $2.00 per square foot per year. The University of Connecticut and the Connecticut State Colleges and Universities system, including Connecticut's 12 community colleges and the four Connecticut State University System campuses (i.e., Central, Eastern, Southern, and Western) are addressed in the Higher Education market segment section.

  The highest electricity consumers within the State Buildings Portfolio include:

  - Department of Transportation;
  - Department of Correction;
  - Department of Administrative Services;
  - Department of Education (including the Career Technical Education & Career System); and the

- Connecticut Judicial Branches.

The highest natural gas consumers within the State Buildings Portfolio are:

- Department of Correction;
- Department of Education;
- Department of Mental Health and Addiction Services;
- Department of Developmental Services;
- Connecticut Judicial Branches; and
- Department of Administrative Services.

- Municipal Buildings. Connecticut's 169 towns and cities have 104.5 million square feet of space for Board of Education and municipal buildings. The energy expenditures of municipal buildings are approximately $314 million per year, which corresponds to $3.00 per square foot per year. Municipal building types vary widely in energy consumption from office buildings (e.g., administrative office buildings, primary and secondary schools, town halls, and police stations) to large complexes and facilities (e.g., park and recreation facilities, and water and wastewater treatment facilities).

### End-Uses, Systems & Equipment

For state and municipal buildings, there are numerous types of end-uses, systems, and equipment. The Companies have identified the following major energy users, which include building automation systems, lighting, HVAC equipment, cooking equipment, refrigeration, elevators, plug loads (e.g., office equipment), poor air sealing, and pumps and fans.

### Barriers to Participation

Government buildings, both state and municipal, present significant opportunities for the Companies due to the scale of their facilities, and because many government buildings are old and have aging equipment and infrastructure (e.g., HVAC equipment, lighting, building envelope, etc.) in need of major upgrades, renovations, or replacements. Both state and municipal customers are active participants in the Companies' programs. Connecticut's 169 municipalities have participated in at least one energy efficiency project during the last three years. The State and Municipal Government sector is over-indexed, which means that investments in this sector save more than 1.5 percent of consumption per year, which is above average savings.

Government buildings present unique challenges for the Companies regarding implementing energy efficiency projects and encouraging sustainable investments. State and municipal governments have limitations regarding how capital can be raised. A significant barrier for state and municipal governments is that they are less flexible and have limited access to creative financing structures and

mechanisms to fund energy efficiency projects.[66] Due to the state of Connecticut's legislative funding and procurement processes, state facilities face lengthy and unpredictable decision making timelines, further delaying the implementation of energy efficiency measures, even those with short or no payback periods. Additionally, state government agencies often do not have the flexible budgets needed to incur the additional costs of integrating sustainable building technologies into new construction or renovations. Municipalities also face limitations and extended approval timelines for use of public funds, including strict procurement requirements and public bidding processes.

Historically, there has also been limited expertise within the State and Municipal Government sector to address energy efficiency improvements, further challenged by attrition. With the advent of the state's Lead by Example program, awareness of energy-saving opportunities and programs has increased in the state government market segment. However, this remains a significant barrier to participation for municipal governments.

The challenges listed above limit the ability of the State and Municipal Government sector to move expeditiously to fully achieve the available energy efficiency savings.

### Market Actions

For the State and Municipal Government sector, the Companies will provide technical assistance and guidance for energy efficiency projects and will focus on providing sustainable funding for investments. During the 2019-2021 Plan, the Companies will provide resources to providing municipality support for benchmarking and data analysis for Connecticut's towns and cities. Additionally, the Companies will continue to ensure that energy aggregate data is updated monthly on the Connecticut Energy Efficiency Dashboard (see Appendix B). The Companies will also provide technical support related to the automatic transfer of billing data to the EPA's Portfolio Manager software.

## HOSPITALS AND HEALTHCARE FACILITIES

### Definition and Description

According to the Connecticut Hospital Association, Connecticut's hospitals and healthcare systems contributed over $27.7 billion to the state and local economy in 2016 and employ over 207,000 people.[67] The Hospital and Healthcare Facilities market is a significant sector to the Companies, with hospitals alone representing approximately 10 percent of their commercial sector sales (electric and

[66] EPA. *Energy Efficiency in Local Government Operations: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs.* 2011. Available at: https://www.epa.gov/sites/production/files/2015-08/documents/ee_municipal_operations.pdf.

[67] Connecticut Hospital Association. *2018 Economic Impact Report.* Available at: https://documents.cthosp.org/9/2018%20Annual%20Report.pdf.

natural gas). Healthcare Facilities are defined as businesses that provide acute and extended care for patients.

Connecticut's hospital sector is largely consolidated, with many facilities associated with large healthcare systems, such as Hartford Healthcare, Yale-New Haven, Middlesex Hospital, and Stamford Hospital. The CHA website notes there are 27 acute care hospitals, 9 "other" hospitals, and 14 non-hospital institutional health care facilities across the state. These customers are concerned regarding power quality and consistencies.[68]

Hospital and healthcare facilities are large energy consumers with complex energy consuming systems. According to the US Energy Information Administration, hospitals are the second most energy intensive C&I buildings (after Restaurants) using approximately 250,000 Btu per square foot. Outpatient health care facilities utilize approximately 75,000 Btu per square foot. Hospital energy use is high due to around-the-clock facility use and the need to ensure optimal patient care, comfort, and safety.[69]

### End-Uses, Systems & Equipment

As noted, hospitals are high energy users with business operations 24 hours a day, seven days a week. Thousands of patients, employees, and visitors utilize the facilities daily. There is high energy demand for all end uses and due to a wide variety of specialized, energy intensive equipment, such as medical imaging and lab equipment.

For hospitals and healthcare facilities, sophisticated HVAC systems are needed that can control multiple temperatures and air flow, while providing proper ventilation designed to clean the air and infection control. Additionally, there are many other energy intensive activities, including: commercial kitchens and laundry, computer and server use, food service, laundry, medical and lab equipment use, refrigeration, and sterilization. Hospitals and healthcare facilities also require typical building end-use equipment, such as elevators, lighting, pumps and fans, and plug loads (e.g., office equipment, televisions, etc.).[70]

### Barriers to Participation

The primary concern of hospitals and healthcare facilities is the safety and comfort of patients, employees, and visitors. Equipment and system performance are imperative, and any changes could negatively impact patient or staff health. Due to the around-the-clock operations of hospitals and

[68] See 44 id.
[69] US Energy Information Administration, *2012 Commercial Buildings Energy Consumption Survey*. Released March 18, 2016. Available at: https://www.eia.gov/consumption/commercial/reports/2012/energyusage/.
[70] US Energy Information Administration. *Energy Characteristics and Energy Consumed in Large Hospital Buildings in the United* States. Aug. 7, 2012. Available at: https://www.eia.gov/consumption/commercial/reports/2007/large-hospital.php.

healthcare facilities, management teams may be reluctant to take on major renovation projects that could impede the health and safety of the thousands of people that enter the building every day.

Another major barrier to energy efficiency for this market segment is the perceived investment timeline associated with efficiency projects. Management teams at hospital and healthcare facilities prefer short returns on investments ("ROIs") and often hesitate committing capital to fund energy-efficient measures in lieu of state-of-the-art medical and diagnostic equipment. Investment in medical equipment can make a hospital and healthcare facility instantly competitive with another healthcare provider thus covering the initial cost of investment; while energy efficiency measures often have a longer payback period.

### Market Actions

The Companies have developed an effective tool to engage hospitals and healthcare facilities in multi-year strategic planning and investment in energy efficiency upgrades—the Multi-Year Energy-Saving Agreement. These agreements combine all implementable and cost-effective efficiency projects over a specified time and the commitments are structured by the Companies to help the customer overcome the barriers to participation. These agreements bring the stability and predictability of a multi-year partnership with Companies to address energy efficiency through incremental and strategic capital investments.

Additionally, the Companies can tailor solutions to the business needs of this market segment. Energy-saving measures can be implemented in phases to allow for continued life-saving operations and patient care, such as replacing some of the facility's air handlers and exhaust/return fans late at night or on the weekend. This staggered approach gives the hospital or healthcare facility the flexibility to continue business operations on their schedule while making the investment in energy efficiency.

The Companies will work with its Trade Ally Networks to develop tailored solutions to the energy and business needs of hospitals and healthcare facilities, including their Thermal Management HVAC, and Lighting Control Design Trade Ally Networks. The Companies will also utilize their partnerships with the Connecticut Hospital Association and leverage the innovative financing options available through the Connecticut Hospital Association Trust, Connecticut Green Bank, and the third-party C&I Loan offered through the Companies to drive comprehensive energy-saving projects.

The Companies can also play a pivotal role in providing information regarding other sustainable energy solutions beyond energy efficiency measures, such as on-site energy generation technologies that would serve as reliable sources of energy for the 24-7 operations of hospitals and healthcare facilities.

## COLLEGES AND UNIVERSITIES

### Definition and Description

There are over 40 higher education institutions with physical campuses and over 200,000 students in Connecticut. This market sector spends close to $2 billion on energy each year with a typical 50,000-square-foot university building uses more than $100,000 of energy each year. Colleges and universities spend an average of $1.10 per square foot on electricity and $0.18 per square foot on natural gas annually.[71]

The higher education market segment (Colleges and Universities) is the only one with organizational commitments to carbon neutrality. Currently, 13 Connecticut colleges and universities, including seven of the Board of Regents ("BOR") facilities are signatories to the American College and University Presidents' Climate Commitment ("ACUPCC"). Both Eastern Connecticut State University and Southern Connecticut State University are Charter Climate Commitment Signatories. The ACUPCC is a commitment by the college or university to become carbon neutral and to work toward that goal on an annual basis.

Based on the best available data, the combined GHG emissions of the 13 Connecticut signatory campuses is approximately 530,000 metric tons of carbon dioxide; roughly equivalent to one percent of Connecticut's total statewide GHG emissions. Through energy efficiency projects and other carbon reduction measures, the 13 ACUPCC signatories can help the state achieve its statewide GHG emissions reduction goals established by the Global Warming Solutions Act. The Global Warming Solutions Act requires the state to reduce GHG emissions to 10 percent below 1990 levels by January 2020 and to reduce GHG emissions to 80 percent below 2001 levels by January 2050.

### End-Uses, Systems & Equipment

In a typical college classroom building, lighting end-use equipment represents 31 percent and space heating accounts for 28 percent of total energy use, making those systems the best targets for energy savings.[72] Lighting, ventilation, and cooling are the largest sources of electrical use in colleges and universities, while space heating accounts for most of natural gas consumption.

Colleges and universities have a broad range of energy systems and equipment needs, including: building envelopes, central power plants, cooling controls, commercial cooking and food service, HVAC systems, water heating, lighting, living spaces, steam systems, and plug loads (office equipment, computers, televisions, etc.).

[71] [71] E-Source. *Managing Energy Costs in Colleges and Universities.* Published 2003.
[72] E-Source. *Managing Energy Costs in Colleges and Universities.* Published 2003.

## Barriers to Participation

Colleges and universities have large complexes and a variety of building types (e.g., administrative offices, classrooms, dorms, laboratories, etc.) to manage and operate. There are many barriers to engagement in comprehensive sustainable energy management, including: limited capital, staff expertise, and time.

## Market Actions

*Business Sustainability Challenge*

The Companies' BES solution provides comprehensive energy management and sustainability assistance to C&I customers and is further detailed in Section 3.13. The Business Sustainability Challenge is a BES initiative that works with the BOR campuses' facilities personnel, educators, and students to assist with activities addressing energy usage, renewable energies, waste and recycling, and how to perform simple payback calculations for energy-saving projects, such as lighting, building recommissioning, and sensor installations.

The BSC will help the colleges and universities focus their efforts on high energy use intensity buildings with long-run hour systems. In these areas, low and no-cost efficiency operating, and process improvements can be made and there is also high potential for capital improvements, such as equipment upgrades and distributed energy resources. This effort will lead to new system operations and greater awareness and behavioral changes by personnel, teachers, and students.

*Multi-Year Energy-Saving Agreements*

The Companies have developed an effective tool to engage colleges and universities in multi-year strategic planning and investment in energy efficiency upgrades—the Multi-Year Energy-Saving Agreement. These agreements combine all implementable and cost-effective efficiency projects over a specified period and the commitments are structured by the Companies to help the customer overcome the barriers to participation.

These agreements bring the stability and predictability of a multi-year partnership with Companies to address energy efficiency through incremental and strategic capital investments.

*Conduit to Sustainability*

Since colleges and university are engaged in sustainability topics, the Companies will serve as a primary channel of information regarding other sustainable energy solutions beyond energy efficiency measures, such as on-site energy generation technologies, EV charging stations, and water conservation.

## INFORMATION, COMMUNICATIONS & TECHNOLOGY

### Definition and Description

Today's high-tech devices, such as smartphones and tablets, connect the consumer to real-time information and news, social media platforms, and e-commerce platforms. The Information, Communications, and Technology sector provides the services and products needed to access the high-speed internet, satellite television, wireless networks, cloud storage systems, and retail stores that power the 21st century's communications.

As consumer demand increases for more smart devices, cloud storage, and wireless networks, so too does the demand for high-tech communications hubs and data storage centers, high-speed broadband and cable providers' offices, and communications retail spaces. The Companies have identified the Information, Communications & Technology sector as a new priority market segment for the 2019-2021 Plan.

### End-Uses, Systems & Equipment

For the Information, Communications & Technology market segment there are numerous types of end-uses, systems, and equipment. The Companies have identified the following major energy users, which include building automation systems, lighting, HVAC equipment, plug loads (e.g., office equipment), pumps and fans, and computer room air conditioner ("CRAC") and computer room air handler ("CRAH") units.

The energy needed to power data streaming, wireless communications, cloud data storage, and the information technology ("IT") world is continuously growing. Over the last decade, the electricity needed to power and cool the millions of servers that run the Internet has grown by more than 10 percent annually, and accounts for about two percent of all the electricity consumed in the United States.[73]

### Barriers to Participation

In Connecticut, the Information, Communications & Technology market ranges from large national companies to small IT data firms. A key barrier to participation in energy-saving projects is that firms may hesitate committing capital to fund energy-efficient measures in lieu of state-of-the-art communications equipment that could increase their competitive niche in the marketplace.

[73] CNN Money Tech. *The Internet: One Big Power Suck.* May 9, 2011. Available at: http://money.cnn.com/2011/05/03/technology/internet_electricity/index.htm.

## Market Actions

Throughout the 2019-2021 Plan, the Companies will work with the HVAC, Lighting, and Energy Management System Contractor Trade Ally Networks to establish the best measures needed to drive energy efficiency in the Information, Communications & Technology market sector. The Companies may host Customer Roundtables to ascertain the best approach for this priority market segment.

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# 3.18 INDUSTRIAL MARKET SEGMENTS

## MANUFACTURING

### Definition and Description

Connecticut has a diverse manufacturing economy that is home to 4,500 manufacturers[74] who employ 162,800[75] people and generate more than 12 percent of the state's gross domestic product. The manufacturing sector consists of firms engaged in the chemical, mechanical, and physical transformation of materials, substances, and components into new products. Manufacturing accounts for 85 percent of industrial energy use.[76]

The manufacturing segment includes the below-referenced subsectors. As the Aerospace and Defense industry is the largest manufacturing segment in Connecticut, the Companies will make this a target market segment for the 2019-2021 Plan.

- Paper, Packing & Printing. This includes the following manufacturing processes: sawmill and wood preservation, pulp/paper/paperboard mills, converted paper product manufacturing, printing and related support activities, and resin/synthetic rubber/artificial synthetic fiber manufacturing,
- Pharmaceuticals, Medicines & Chemicals. This includes the manufacturing of medical equipment and supplies, basic chemicals, pharmaceuticals, and medicine.
- Food, Beverage & Agriculture. This includes: animal food manufacturing, grain and oilseed milling, sugar and confectionary product manufacturing, fruit and vegetable preserving, dairy product manufacturing, seafood product preparation and packaging, bakeries, tobacco processing, and pesticide/fertilizer/other agricultural manufacturing.
- Miscellaneous Manufacturing. This includes the following manufacturing processes: fiber/thread/fabric mills, apparel knitting, metal fabrication, wire and cable, cut and sew manufacturing, cement and concrete product manufacturing, alumina and aluminum production, machine shops, plastic injection molding, coating/engraving/heat treating activities, motor vehicle and parts manufacturing, refining oil and gas, and water and wastewater treatment.

[74] State of Connecticut. *Manufacturing Innovation Fund*. Available at: https://www.advancingmanufacturingct.com/manufacturing-statistics.
[75] Connecticut Department of Labor. *Manufacturing Sector-State of Connecticut*. Available at: https://www1.ctdol.state.ct.us/lmi/sectors/manufacturing.asp.
[76] Alliance to Save Energy. Available at: https://www.ase.org/resources/industrial-energy-efficiency-101-basics-how-industry-uses-and-conserves-energy.

## End-Uses, Systems & Equipment

Air, heat, light, motors and drives, compressed air, and ventilation are the prominent energy-consuming characteristics of the manufacturing market sector. According to the Alliance to Save Energy, process-related applications account for 80 percent of industrial energy use. This includes process heating and chemical reactions, distillations, and other processes needed to produce chemical compounds, plastic, steel, and other products. An additional 15 percent of industrial energy use is used for crosscutting equipment and supportive systems, such as motor-driven equipment (e.g., pumps, air compressors, fans) and equipment handling applications that transform raw materials into finished products. The manufacturing facilities (the building) account for the remaining five percent of industrial energy use.[77]

Despite the diversity of the manufacturing sector, there are many common end-uses, systems, and processes that collectively represent the majority of electric and natural gas load within manufacturing facilities. These end-uses, systems, and equipment include: air compressors and leaks, HVAC equipment, incinerators, lighting, motors and drives, process equipment and machinery, steam systems, and water heating. Additionally, the Companies will investigate additional energy efficiency opportunities for systems and process optimization, including: compressed air, industrial refrigeration, motor drives, and pumping.

## Barriers to Participation

There are a variety of challenges and barriers to delivering energy efficiency to the manufacturing sector, which include:

- The primary focus of manufacturers is production. Therefore, the risk of change and interrupting production combined with the threat of compromising quality can make manufacturing decision makers hesitant to invest in energy efficiency. The Companies must build a good business case that tailors the project to the customer's business needs, such as finding a good time of day, week, or year where the business can implement energy efficiency changes without compromising quality manufacturing processes.
- Some decision makers work at central offices or plants that are located outside of the state and the United States. Plants that are parts of large conglomerates or multinationals are usually forced to compete with other pants for funding their capital projects. Often, the priority for this limited funding goes toward projects that increase production or quality or are mandatory to meet regulatory requirements.
- A common barrier is the inability of efficiency contractors to access the facility or certain areas to perform assessments of the processes being conducted.

[77] Alliance to Save Energy. Available at: https://www.ase.org/resources/industrial-energy-efficiency-101-basics-how-industry-uses-and-conserves-energy.

- If an energy efficiency project requires a change in equipment or processes, sometimes this can create a "frozen process" for the manufacturer. A frozen process is when the production of a part or the performance of a test is stopped due a change that requires the recertification of a manufacturing process or product prior to manufacturing restarting.
- Energy efficiency projects must compete with other capital improvement projects, and manufacturers require faster and simpler paybacks to consider investing in efficiency.
- Many manufacturers lack the staff or expertise to manage their energy usage and require a concierge or turnkey solution that is straightforward and easy to project manage.

## Market Actions

*Customized Solutions Partnerships (SEM Demonstration)*

For the 2019-2021 Plan, the Companies' Business Sustainability Challenge initiative will include a SEM Demonstration that will provide the largest C&I customers, primarily large manufacturers, with opportunity for strategic, customized energy management solutions that offer electric and natural gas incentives, analytical services to assist with achieving high levels of energy, and operational efficiencies within their facilities. The SEM Demonstration will utilize the BES solution's designs, primarily the BSC, that could help manufacturers design and implement capital retrofit projects, control strategies, and operational and behavioral changes that save energy and reduce energy intensity. A key requirement of the SEM demonstration is that the customer must put an EMS into practice. The structure of the EMS will be based on the Ready Navigator Tool; however, ISO 50001 certification will not be required.

*PRIME and Energy Utilization Assessments*

The Companies' BES solution has two initiatives, the PRIME program and Energy Utilization Assessments that focus on process improvements and reducing the overall costs to manufacturers. The PRIME initiative engages manufacturers in a systematic approach to identifying inefficiencies and waste in their business operations. Through the PRIME initiative, manufacturers receive training in lean manufacturing techniques to eliminate or reduce waste, improve product efficiency, minimize environmental impacts (reduced GHG emissions), reduce electrical energy consumption, and to streamline manufacturing processes.

Manufacturers are targeted and evaluated by sub-segments. For example, for printing manufacturing facilities, the major energy users in these facilities are: air dryers, chilling and warmer water systems, and steam-driven systems for aid in the printing and drying of various materials. An additional example is injection molding manufacturing facilities, where the Companies focus on high-efficiency injection

machines, evaluating cooling systems and all off-line processing (e.g., material transfer, grinding, conveying, cooling, welding, and final assembly) to determine efficiency opportunities.

Understanding the needs of the manufacturer and the intricate details regarding their equipment and processes helps ensure that the Companies approach each customer with a solution that is tailored to their specific business or manufacturing sub-segment's needs.

*Alliances & Trade Ally Networks*

The Companies will work with manufacturing organizations, such as the Employers Association of the Northeast (merged with the former Manufacturing Alliance of CT), the Connecticut Business & Industry Association, and CONNSTEP. Additionally, the Companies will work with trade allies to increase efficiency projects in the manufacturing sector, including the: Energy Management System Contractor, Compressed Air System, and Thermal Management Trade Ally Networks.

*Conduit to Sustainability*

The Companies will serve as the key informational conduit to manufacturers regarding sustainability and energy topics, such as on-site energy generation, renewable energies, and water conservation. This push to provide information and contacts to other sustainability initiatives allows the Companies to address the energy needs of manufacturers holistically, while providing tailored efficiency solutions.

## AEROSPACE AND DEFENSE

### Definition and Description

The Aerospace and Defense market sector is the largest manufacturing group in Connecticut. Included in this sector are manufacturers of aircraft engines (Pratt and Whitney), aircrafts (Sikorsky), submarines (Electric Boat), and a multitude of smaller manufacturers that make parts or offer manufacturing services for the larger companies. Connecticut ranks second in the nation for manufacturing in this sector with more than $12 billion[78] in defense contracts awarded to Connecticut manufacturers in 2014.

### End-Uses, Systems & Equipment

The aerospace and defense industries have facilities, systems, and processes that are significant users of natural gas and electricity. Such processes and systems include assembly, inspection, machining, part treatment, and component testing. Supporting these activities, the aerospace and defense facilities require HVAC equipment and systems, compressed air systems, lighting, motors and drives, process equipment, hot water and steam systems. Further, this industry in particular uses unique and specific

[78] State of Connecticut. *Manufacturing Innovation Fund*. Available at: https://www.advancingmanufacturingct.com/manufacturing-statistics.

purpose-built processing equipment that are customized for products and processes, as well as other unique manufacturing equipment and processes.

The industry's manufacturers have unique and specific purpose-built processing equipment that are customized for products and processes. These unique manufacturing equipment and processes requires specialized review by the Companies to determine energy efficiency opportunities.

### Barriers to Participation

There are a variety of challenges and barriers to delivering energy efficiency to the Aerospace and Defense market sector, which include:

- The primary focus of Aerospace and Defense industry leadership is production. Any risk to production, change, an interruption in production, or a compromise to quality, are major barriers to consideration of efficiency projects. To overcome such barriers, the Companies must make a good business case and tailor the project to the customer's business needs, such as finding a good time of day, week, or year where the aerospace or defense firm can implement efficiency changes without compromising quality manufacturing processes.
- Some aerospace manufacturing processes are "certified," meaning that the process has been vetted from an operational and quality perspective. These processes may then be "frozen," meaning that no changes are permitted to the process (without a review (or re-certification), because those changes may impact the quality of a part. Changes to these processes for energy efficiency reasons are barriers, because re-certification of a part or process may be very costly to the manufacturer.
- Some decision makers work at central offices or plants that are located outside of the state and the United States. Plants that are parts of large conglomerates or multinationals are usually forced to compete with other pants for funding their capital projects. Often, the priority for this limited funding goes toward projects that increase production or quality or are mandatory to meet regulatory requirements.
- A common barrier is the inability of efficiency contractors to access the facility or certain areas to perform assessments of the processes being conducted.
- Energy efficiency projects must compete with other capital improvement projects, and manufacturers require faster and simpler paybacks to consider investing in efficiency.
- Many manufacturers, particularly the smaller aerospace and defense firms, lack the staff or expertise to manage their energy usage and require a concierge or turnkey solution that is straightforward and easy to project manage. In this, as in many manufacturing segments, many aerospace and defense contractors lack the bandwidth to work on energy efficiency projects.

These manufacturers require a concierge or turnkey solution and a business case that is better defined for the project to move forward.

### Market Actions

Due to the development of internal subject matter expertise, the Companies can look at this market segment with more clarity and understanding. As a result, the Companies have identified the aerospace and defense industry as a priority market segment for the 2019-2021 Plan. During the 2019-2021 Plan, the Companies will offer tailored efficiency solutions to this market segment through innovative financing mechanisms and technical assistance.

*Alliances & Trade Ally Networks*

The Companies will look to continue their established trade organizations and alliances with smaller aerospace and defense firms while maintaining direct engagement with larger manufacturers (i.e., Sikorsky, Pratt & Whitney, and Electric Boat). The Companies will continue working with trade organizations, such as the Aerospace Components Manufacturers and the Smaller Manufacturers Association of CT. Additionally, they will work with trade allies to increase efficiency projects in the aerospace and defense market, including the: Energy Management System Contractor, Compressed Air System, and Thermal Management Trade Ally Networks.

## DISTRIBUTION, FULFILLMENT CENTERS & WAREHOUSING

### Definition and Description

The EPA estimates that the energy use intensity ("EUI") of distribution facilities, fulfillment centers, and warehousing facilities ranges from less than 50 to more than 600 kBtu/ft$^2$.[79] Energy consumption varies across distribution and warehouse facility properties for several reasons, including variable equipment efficiency and energy management practices, as well as variations in climate (number of heating and cooling degree days) and business activities, such as number of workers per square foot and if there is walk-in refrigeration or climate-controlled systems.[80]

A distribution center is defined as a warehouse or other specialized building that is stocked with products (good) to be redistributed to wholesalers, retailers, or directly to customers. A facility is defined as building(s) where orders are received, sorted, packaged, and readied for delivery to the customer are called fulfillment centers.[81]

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[79] EPA ENERGY STAR Portfolio Manager. *Energy Use in Distribution Centers*. Available at: https://www.energystar.gov/sites/default/files/tools/DataTrends_Distribution_Center_20140128.pdf.
[80] See 71 id.
[81] Building Owners and Managers Association. Presentation: *Identifying Strategic Energy Efficiency Upgrades for Warehouse and Industrial Purposes*, June 27, 2016. Available at: https://www.bomaconvention.org/BOMA2016/Custom/Handout/Speaker2229_Session756_1.pdf.

There are generally three types of warehouse facilities[82]:

- Heated and Unheated General Warehouses. These facilities provide storage space (bulk, rack, and bin), aisle space, receiving and shipping space, packing and crating space, and office space.
- Refrigerated Warehouses. These facilities protect perishable goods and supplies that require refrigeration for preservation, and typically include: freezing and chilling space, processing equipment and facilities, and mechanical areas.
- Controlled Humidity Warehouses. This facility is similar to general warehouses except they are constructed with vapor barriers and also contain humidity control equipment to maintain humidity at desired levels.

### End-Uses, Systems & Equipment

There are many common end-uses, systems, and processes that comprise most of the natural gas and electric load within the distribution and warehousing market sector. This includes: exhaust fans, HVAC equipment and systems, docking doors and loading/unloading areas, office areas, refrigeration, and lighting and lighting controls.

There are many energy-saving opportunities for this market segment. They include: adjusting temperature programming and ventilation settings for occupied/unoccupied zoning areas, sectioning warehouse space into temperature zones, insulating docking and refrigeration control doors, and installing LED lights and control systems, (installing occupancy sensors or dimmers in warehouse areas).

### Barriers to Participation

The primary focus of distribution and warehousing operators is the delivery of quality services—storage, packing, sorting, delivery, and shipping services. Therefore, any risk of change or disruption of services is perceived as a major barrier to implementing energy efficiency projects and processes. Many warehouses and distribution centers run 24-7 and do not have down time (on weekends and evenings) that some C&I buildings have where equipment can be replaced, or processes altered before the next shift. To overcome this barrier, the Companies must make a good business case and tailor the project to the customer's business needs, such as finding a good time of day, week, or year where the business can implement efficiency changes without compromising distribution and warehousing services.

[82] National Institute of Building Sciences. Whole Building Design Guide. *Warehouse*. Written by Ed Hacker, Steven Winter Associates, May 31, 2017. Available at: https://www.wbdg.org/building-types/warehouse.

### Market Actions

*PRIME, Energy Utilization Assessments, and Retro-Commissioning*

The Companies' BES solution has several initiatives that can help distribution and warehousing centers adopt energy efficiency practices and install high-efficiency equipment. Two of these initiatives, the PRIME program and EUAs, focus on process improvements that reduce overall costs. PRIME can engage warehouse and distribution center operators in a systematic approach to identify inefficiencies and waste in their business operations. Through the PRIME initiative, warehouse and distribution center owners and facility managers receive training in lean techniques to eliminate or reduce waste, improve service efficiency, reduce GHG emissions, reduce electrical energy consumption, and to streamline processes.

Additionally, the RCx initiative can help identify energy-saving opportunities in warehouses and distribution centers by improving the operation of a building's energy management systems. Portions of warehouses and buildings may have been converted from warehouse space to offices, or vice versa. The building systems needed for particular building use vary, requiring more task-oriented lighting in office spaces and lighting controls and efficient design in warehouse areas where workers infrequently utilize.

*Demand Response Initiatives*

A key demand management strategy for warehouses and distribution centers is to participate in the Companies' C&I Demand Response solutions. The warehouse or distribution center facility can curb their energy consumption during peak demand events, thereby reducing the facility's energy costs and earning incentives for responding to a demand response event.

*Conduit to Sustainability*

Warehouses and distribution centers serve as excellent facilities for on-site energy generation, renewable energies (especially solar PV), and EV charging stations for company fleets. The Companies will serve as the primary conduit for all energy and sustainability information for this market segment.

## UTILITIES AND TRANSPORTATION

### Definition and Description

The Utilities and Transportation market sector includes a number of facilities and buildings including: telephone and communication facilities, natural gas and electric utilities, oil and propane storage distribution centers, water and wastewater facilities, and energy generation and distribution facilities.

A significant amount of energy use occurs at water and wastewater treatment facilities. These facilities are very energy intensive with drives, fans, motors, pumps, and other equipment operating 24 hours a

day, seven days a week and are some of the largest consumers of energy in a community. Electricity costs account for 25 to 40 percent of the operating budgets for wastewater utilities and approximately 80 percent of drinking water processing and distribution costs.[83]

### End-Uses, Systems & Equipment

A large amount of utility and transportation facilities have office environments similar to the Commercial Real Estate market sector. The end-uses, systems, and equipment found in office environments share commonalities across all types of Utilities and Transportation buildings' subcategories, such as facility sizes, classes, and ownership structures. Major sources of energy use include, but are not limited to: elevators, employee kitchens and lunchrooms, HVAC equipment and systems, lighting and controls, and plug loads (e.g., office equipment, televisions, etc.). Specifically, for HVAC equipment and systems, these are often the responsibility of the building owner and tenants cannot control or upgrade them without the building owner's consent.

Water and wastewater treatment facilities are complex operations with numerous types of end-uses, equipment, and systems. Major energy users include: blower and diffuser technologies for aeration systems, design and control of aeration systems (e.g., nitrate and dissolved oxygen), efficient pumping systems, energy-efficient measures for selected treatment processes (e.g., anoxic mixing, membranes, and UV disinfection), motors, and variable frequency drives. Additionally, there are energy-saving opportunities by installing supplemental systems to match equipment capability to non-designed loads.

### Barriers to Participation

There a number of barriers to implementing energy efficiency measures in water and wastewater treatment facilities including:

- Determining how feasible and reasonable (e.g., cost and labor) it would be to figure out the mechanics of a certain process;
- Identifying and resolving issues with continuous plant operations;
- Overcoming the temptation of short-term paybacks in order to take advantage of more beneficial long-term returns related to energy initiatives;
- Addressing discharge permit modifications in an upgrade process;
- Deciding whether to change processes or equipment based on plant upgrade schedule (i.e., financial payback and process improvements);
- Ensuring improvements are compatible with current equipment and processes; and

[83] EPA—State and Local Climate and Energy Program. *Local Government Climate and Energy Strategy Plans: Energy Efficiency in Water and Wastewater Facilities*, 2013. Available at: https://www.epa.gov/sites/production/files/2015-08/documents/wastewater-guide.pdf.

- Responding to Board, Commission, and public regarding the financial impact of energy efficient projects.

### Market Actions

The Companies' BES solution has several initiatives that can help the Utilities and Transportation market sector adopt energy efficiency practices and install high-efficiency equipment. Two of these initiatives, the PRIME program and EUAs, focus on process improvements that reduce overall costs. PRIME can engage facility operators in a systematic approach to identify inefficiencies and waste in their business operations. Through the PRIME initiative, building owners and facility managers receive training in lean techniques to eliminate or reduce waste, improve service efficiency, reduce GHG emissions, reduce electrical energy consumption, and to streamline processes.

Additionally, the RCx initiative can help identify energy-saving opportunities in the Utilities and Transportation market sector by improving the operation of a building's energy management systems. Portions of utility and transportation facilities may have been converted from warehouse space to offices, or vice versa. The building systems needed for particular building use vary, requiring more task-oriented lighting in office spaces, and lighting controls and efficient design in storage areas where workers infrequently utilize.

*Water and Wastewater Treatment Facilities*

Some market actions for water and wastewater treatment facilities include:

- Pump rebuilds and/or replacements;
- Mixing methods (i.e., compressed air mixers rather than mechanical mixing);
- UV system optimization;
- Plant water system replacement;
- Aeration (i.e., positive displacement blowers, hybrid units, and minimizing operations);
- Efficiencies in sludge pump mixing, odor control, and sequencing batch reactors;
- Operational measures (i.e., reprogramming the supervisory control and data acquisition ("SCADA") system);
- Water and wastewater aeration system tank blower control (i.e., cycling changes and sizing corrections); and
- LED lighting and controls.

## 3.19 WORKFORCE DEVELOPMENT & TRAINING

For the 2019-2021 Plan, the Companies will continue to provide and support workforce development for its C&I Energy Efficiency Portfolio vendors, contractors, trade allies, stakeholders, and customers. The Companies recognize the importance of workforce development to drive energy efficiency savings and successes in the C&I Energy Efficiency Portfolio. Professional development and trainings will be coordinated through the Companies' Workforce Development efforts (see Chapter Four) and the Companies will encourage the use of the Energize Connecticut Center, located in North Haven, Conn., as a training location for 2019 workforce development efforts.

During the 2019-2021 Plan, the Companies will work to enable the deployment of CLS, ALCS, and emerging LED technologies through workforce development activities. The Companies recognize the importance of providing Connecticut's existing lighting installers with the necessary training to support CLS, emerging LED technologies, and advanced lighting controls deployment.

The Companies' C&I Energy Efficiency Portfolio, supported by the Workforce Development initiative detailed in Chapter Four, will support additional professional development and trainings for its trade allies, contractors, and customers, including: Building Operator Certification, Green Professional Building Skills, ENERGY STAR Portfolio Manager, and Certified Energy Manager trainings.

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# 3.20 MARKETING COMMUNICATIONS

## SITUATIONAL ANALYSIS

In response to the diversion of funding announced in October 2017, promotions were immediately curtailed or limited to extend the length of time programs could stay active. However, the Companies' marketing teams recognized that keeping the pipeline filled was critical, as many potential projects can become "lost opportunities." The Companies reduced the number of paid advertisements in 2017 and 2018 (and will do so in 2019), but continued to aggressively pursue public relations opportunities and personal, targeted outreach to customers and trade allies via direct response and the Energy Efficiency sales teams.

Concurrently, as paid promotions were reduced, the customer segment research and focus undertaken by the implementation teams provided direction to marketing communications, enabling marketing to focus on segments where funding and cost-effective opportunities were greatest. That strategy will be employed in this 2019-2021 Plan too.

## MARKETING COMMUNICATIONS PRIORITIES

As noted earlier in this chapter, development of technology-specific trade ally networks and segment and industry associations is a key element of the Companies' go-to-market strategy. In addition to using these groups as a resource for effective program design and uptake by customers, they are a valuable communications channel as well. With their "boots on the ground," these groups can inform marketing on the barriers and inducements to participation, enabling more effective messaging. Additionally, these groups are important messengers in their own right—connecting their customers or members directly to programs and services.

Another marketing priority, influenced both by the Companies' segmentation learnings and the insights from trade allies, is effective audience identification. An enhanced understanding of who the decision influencers are, in addition to the traditional customer decision makers is critical. Having this understanding enables marketing to articulate the correct value proposition. For example, reduced "hot/cold" calls from tenants in large office buildings could be of more value to a facility manager than the incentive and ROI message delivered to a CFO. Rather than leading with one value statement for everyone, support materials and campaigns will address these different customer needs.

Audience identification and tailored messaging also becomes more significant as equipment moves to the upstream model. Understanding the various inflection point-of-purchase decision provides multiple opportunities to get the messaging right. For example, a piece of equipment might be requested by a maintenance technician who meets with a manufacturer's representative in his own facility, before sending the request to his procurement department, or by a designer – all before anyone is sent to the

distributor branch to pick up the merchandise. Conversely, pick-up counters can be the primary source of information for many trade allies, particularly independent contractors. The Companies' marketing and implementation teams will work closely together to ensure that the upstream (and rebate) offerings are supported appropriately.

## MARKETING COMMUNICATIONS MIX (2019-2021)

Table 3-4 on the next page shows the potential marketing communications mediums that may be employed during the 2019-2021 Plan timeframe, along with the appropriate audience, the measures promoted, and the high-level objective of the tactic. The extent that these mediums will be used is dependent of what is needed at any given time to achieve the Companies' energy-saving and participation goals.

Table 3-4: Marketing Communications Mix for C&I Energy Efficiency Portfolio

| Medium | Audience | Objective | Measures/Activities Promoted (potential) |
|---|---|---|---|
| Radio Advertising | Mass Business Market, minimal audience differentiation, most valuable for small or mid-sized local businesses | Awareness -- Business case for energy efficiency ("EE"): focus on the high-level value proposition | Audits, incentives, financing, and resources in general |
| Print Advertising | General business customer audiences (via traditional business pubs and associations), segment-specific to customers and trade allies (via vertical pubs and associations) | Awareness -- Business case for EE: focus on the high-level value proposition in general publications; segment-specific messaging for vertical publications | Audits, incentives, financing, resources in general, and equipment/service specific |
| Digital Display Advertising | Targeted by location, size and/or segment: both customers and trade allies | Measure/solution-specific: lead generators | Audits, incentives, financing, resources in general, and equipment/service specific |
| Paid Online Search | Targeted business and trade allies | Solution-specific, increase user ability to connect with energy efficiency resources | Keyword bid terms include technology, equipment, behavior, environmental, save money, and sustainability |
| Public Relations | Targeted business, legislative, trade allies, and associations | Value of EE, measure/solution-specific: focus on the value propositions including non-energy benefits. Tell the energy efficiency story via real-life examples | Audits, incentives, financing, resources in general, equipment/service specific, events, and awards/recognition, sustainability |
| Direct Response | Targeted businesses, trade allies, and associations | Solution Specific, utilizing traditional mail, e-mail, and CEP tools: lead generators | Audits, incentives, financing, resources in general, and equipment/service specific |
| Paid Social Media Advertising | Facebook: Small business and the contractors who serve them; Linked In: all business sectors | Business case for EE. Foster dialogue, interest. Lead generation | Audits, incentives, financing, resources in general, equipment/service specific, events, awards/recognition, sustainability |
| Events | Targeted businesses, trade allies, and associations | Business case for EE. Foster dialogue, interest. Lead generation when possible | Audits, incentives, financing, resources in general, equipment/service specific, events, awards/recognition, sustainability |
| Co-op | Small and Mid-Sized Business Preferred Contractors | Value of EE, measure/solution-specific: lead generators | Audits, incentives, financing, and equipment/service specific |
| Point-of-Purchase | Trade Allies, Facilities, Property Managers | Awareness of product features, discount and availability | Eligible equipment |

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# 3.21 C&I RESEARCH, DEVELOPMENT, AND DEMONSTRATION ("RD&D")

## FAULT DETECTION AND DIAGNOSIS TOOLS FOR RETRO-COMMISSIONING AND CONTINUOUS COMMISSIONING OF HVAC AND REFRIGERATION SYSTEMS

### Background

Packaged rooftop units ("RTUs") provide cooling (air conditioning RTUs) and heating (RTU heat pumps) for over 60 percent of the commercial building space in the United States (87 billion square feet) and they are a significant source of energy consumption and peak demand. An estimated 40,000 10-ton units are sold annually in the United States; for reference, a typical 100,000 square foot building uses 20 10-ton RTUs. There are more than 486,000 operational RTUs in the Northeast region with approximately 2,700 RTUs sold in Connecticut in 2014.

Even under ideal circumstances, RTUs are not as efficient as larger built-up systems. Most RTUs have one or more faults (e.g., low/high refrigerant charges, valve leakages, condenser/evaporator fouling, filter/dryer restrictions, economizer faults, etc.) that increase the equipment's energy consumption. If these faults are detected, diagnosed, and addressed, then significant energy savings can be realized. Automated Fault Detection and Diagnosis ("AFDD") tools have the potential to save considerable energy for existing commercial RTUs in Connecticut (and beyond). These devices, when installed on RTUs (and other HVAC equipment), can be used for retro-commissioning ("RCx"). Additionally, when faults are addressed, AFDDs can be used for continuous commissioning ("CCx").

According to the EPA's ENERGY STAR website, recent field studies indicate that up to 60 percent of installed cooling equipment may have incorrect refrigerant charge. This fault can translate to a 5 to 20 percent reduction in efficiency as well as the potential for premature component failure [7 ]. According to a Proctor Engineering Group study, approximately 60 percent of the 55,000 residential and C&I RTUs surveyed had improper refrigerant charge.[84] Another study by Rossi found that only 80 percent of 1,500 RTUs met their expected efficiency due to improper refrigerant charge. Additionally, in a much earlier experimental study of an unoccupied research house, researchers found an increase in energy consumption by 33 percent due to a combination of factors, including: (1) an indoor air flow reduction of 35 percent, (2) an outdoor air flow reduction of 15 percent, and (3) a refrigerant undercharge of only 10 percent.[85]

[84] Proctor and Downey. 2003. Innovative Peak Load Reduction Program CheckMe!® Commercial and Residential AC Tune-Up Project for the California Energy Commission. Available at: https://www.proctoreng.com/dnld/InnovativePeakLoadReductionProgram.pdf.
[85] Gorthala. Ravi.

There is a clear opportunity to save significant energy in residential and commercial buildings by ensuring proper HVAC operation. It is also evident that even if significant gains were made in the development of highly efficient next-generation HVAC systems, it is futile without the presence of mechanisms to ensure such systems are operating at expected efficiencies. To address this need, several studies have been undertaken on fault detection and diagnosis ("FDD") of HVAC systems.

There are several commercial FDD-based software tools available in the marketplace; however, these tools have not yet achieved a high HVAC market penetration. A recent article[86] noted several issues with implementing FDD, including, but not limited to: lack of understanding (property owners think their HVAC equipment is running efficiently), lack of data (e.g., not enough sensors or the building has a legacy control system), and how to appropriately handle the FDD information (e.g., if every fault is treated as an alarm then this results in increased workloads for building operators and technicians). Despite these noted barriers, there is a continued push to bring FDD products to the commercial market. The Western HVAC Performance Alliance has been working on FDD Road Map and has just released a Master List of more than 100 existing FDD products.[87] These include in-field, on-board, and factory-installed FDD products. Most of them had just economizer faults and there were only about 10 that were refrigerant-air FDD products.

### 2019-2021 AFDD Project

On October 1, 2017, the Electric Companies and the University of New Haven ("UNH") launched a three-year RD&D project to demonstrate the technical and economic feasibility and environmental impacts of AFDD tools and technologies for RCx and CCx of electric cooling, heating, ventilation, and refrigeration systems. The initial proposal for the project, entitled *Bringing Fault Detection and Diagnosis Tools into the Mainstream: Retro-Commissioning and Continuous Commissioning of HVAC and Refrigeration Systems*, was submitted by the UNH to the DOE (with support from the Electric Companies) in early 2017. The project team, led by UNH, secured $600,000 in funding from the DOE's Office of Energy Efficiency and Renewable Energy for the three-year project, which is cost-shared through the Companies' C&I Energy Efficiency Portfolio. Key goals of the AFDD project team are to:

- Study and verify the technical and economic feasibility, ease of installation, operational and environmental impacts of up to 10 AFDD products that meet the AFDD project requirements.
- Demonstrate the energy efficiency potential over several commercial building types.

[86] Sinopoli, Jim. *FDD Going Mainstream? Whose Fault is it?* Automated Buildings.com. April 2010. Available at: http://www.automatedbuildings.com/news/apr10/articles/sinopoli/100329091909sinopoli.htm.
[87] Western HVAC Performance Alliance. Onboard and In-Field Fault Detection and Diagnostics—Industry Roadmap. Updated October 31, 2017. Available at: http://www.performancealliance.org/Portals/4/Work%20Product/FDD%20Roadmap%20Update%2011-15-17.pdf.

- Convene key stakeholders to identify market and technical barriers to AFDD tools and lay out a project plan that will overcome these barriers.
- Undertake stakeholder education and outreach by disseminating existing and newly-developed materials through state energy efficiency program marketing channels, and state and/or national professional societies.
- Support the development and roll-out of a C&I Energy Efficiency Portfolio incentive for AFDDs to create energy efficiency savings and/or electric grid responsiveness in commercial buildings.

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# CHAPTER FOUR: WORKFORCE DEVELOPMENT, EDUCATION & COMMUNITY OUTREACH PORTFOLIO

## 4.1 OVERVIEW

For the 2019-2021 Plan, the Companies will continue to deliver comprehensive sustainable educational and workforce development initiatives through the Workforce Development, Education, and Community Outreach Portfolio. This sustainable platform focuses on the following community-centric integrated solutions.

- Workforce Development. Sustainable development platform that employs workforce development strategies for students at the Connecticut Technical Education and Career System and Connecticut's colleges and universities, as well as current employees of energy efficiency contractors, vendors, and trade allies.
- Education (K-12 and Colleges/Universities). The *eesmarts* Platform is an energy efficiency and clean renewable learning initiative for the K-12 and college/university educational community. The *eesmarts* Platform provides professional development opportunities for K-12 educators and college/university students. The Companies also conduct an annual student contest (for K-12 and college/university students) and offers classroom lessons and outreach activities to engage students in the benefits of energy efficiency.
- Sustainable Community Outreach. The Companies will provide limited support to Connecticut's communities to drive energy efficiency, sustainability, and conserve natural resources. The Companies will limit their outreach efforts to providing some technical support and guidance toward entities that wish to engage their community (business, neighborhood, school, or municipality) in energy efficiency. Additionally, the Companies will support sustainable community outreach through the Energize Connecticut Center in 2019, and work with local museums and educational centers in 2020 and 2021 to promote energy efficiency education.

Like all sustainable development initiatives, the Workforce Development, Education, and Community Portfolio helps Connecticut communities (workforce, K-12 students and educators) "meet the needs of the present without compromising the ability of future generations to meet their own needs.[88]"

[88] Definition of Sustainability. World Commission on Environment and Development. *Our Common Future*. 1987

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## 4.2 WORKFORCE DEVELOPMENT

The Companies' innovative Educate the Workforce initiative, originally developed for the 2016-2018 Plan, employs workforce development strategies for students at the Connecticut Technical Education and Career System ("CTECS") and Connecticut's higher education system (colleges and universities), as well as current employees of energy efficiency contractors, vendors, and trade allies. These successful sustainable workforce development strategies will continue and expand during the 2019-2021 Plan.

### CAREER AND TECHNICAL EDUCATION

A primary objective of the Companies' Workforce Development initiative is to provide students with the opportunity to become more *work ready* for the clean energy workforce through technical certifications, internships, and work studies in their related fields and trades before they graduate from high school.

Since 2006, the Companies have worked with the CTECS, formerly known as the Connecticut Technical High School System, to provide professional development for trade instructors, including partnering with manufacturers and installers to conduct training sessions regarding the installation and maintenance of energy-efficient and clean energy systems. These trainings evolved into the E-House initiative, on-site energy efficiency and renewable energy labs at each of the 18 CTECS schools. As the Companies' and CTECS' partnership evolved, the Green Sustainable Technical Education Program ("Green STEP") emerged, focusing efforts on training certifications, hands on-home performance services, and job career fairs.

For the 2019-2021 Plan, the Companies will implement a vendor-managed Career and Technical Education program approach focusing on certifications, trainings, and job fairs for students attending one of the 18 CTECS schools across the state, as well as students enrolled in energy management degrees at a Connecticut community college. This program will build off the successful Green STEP initiative developed by the Companies during the 2016-2018 Plan. The Career and Technical Education program will be a series of courses, similar to classes taken for a college or university degree, requiring participants to meet course prerequisites before enrolling in advanced coursework and training.

#### Energy 101-Introduction to Home Energy Performance

A successful part of the 2016-2018 Green STEP initiative was the Introduction to Weatherization course. The Companies will continue to offer a similar introductory course in the 2019-2021 Plan entitled Energy 101-Introduction to Home Energy Performance. This course will review the basics of energy efficiency and renewable energies, home performance services (HES and HES-Income Eligible solutions), energy conservation, and sustainability. Registration will be online, promoted to CTECS students, and will be first-come, first-served. If certification trainings are not fully registered, the Companies will first open registration for students enrolled in energy management degrees at Connecticut community colleges

and then to energy efficiency contractors. The Companies will offer 5-10 trainings annually and the Energy 101-Introduction to Home Performance will serve as the introductory course for the Companies' Career & Technical Education program.

### BPI Building Science Professional Certification Training

Throughout the 2019-2021 Plan, the Companies will offer three to four Building Performance Institute ("BPI) Building Science Professional certification trainings annually at various facilities across the state. The target market for these trainings will be CTECS students enrolled in one of the construction trade pathways, as well as new CTECS trade instructors who have not received the BPI Building Science Professional Certification. Registration will be online, promoted to CTECS trade and career instructors and students, and will be first-come, first-served. As a prerequisite, attendees must have taken Energy 101-Introduction to Home Energy Performance. If the BPI Building Science Professional certification trainings are not fully registered, the Companies will first open registration to students enrolled in energy management degrees at Connecticut community colleges, and then will open up registration to the Home Performance Services vendor community.

Based on program budgets, the Companies will also explore hosting additional trainings annually (3-4 times a year) for BPI Building Envelope Professional and BPI Building Analyst certification. The Companies may also host Green Professional Building Skills trainings offered through the CT Green Building Council. These additional trainings, if developed and implemented, will follow the same registration guidelines as the Energy 101-Introduction to Home Energy Performance and BPI Building Science Professional trainings.

### Employer & Career Fairs

The Companies will host Employer & Career Fairs annually (3-4 times a year) at a central and accessible location in Connecticut. These Employer & Career Fairs will give CTECS students an opportunity to network with manufacturers, construction and design firms, home energy performance services vendors (HES and HES-Income Eligible), and SBEA vendors. Each Employer & Career Fair will feature workshops and networking events that are purposefully designed to generate trade internship and job opportunities. Additionally, in the 2019-201 Plan, the Companies will explore partnering with contractors to promote apprenticeships.

### Connecticut Science & Engineering Fair

Additionally, during the 2019-2021 Plan, the Companies will continue to support CTECS by funding the project registration fees and project material costs to enter CTECS students' scientific research projects in the annual Connecticut Science & Engineering Fair (held yearly in March). The Companies will cover the registration fees and project material costs for one to three qualifying projects per CTECS school (18

schools statewide) to support innovative research into topical energy, environmental, and sustainable issues.

## TECHNICAL TRAININGS

The Companies will continue to offer technical trainings to the Residential and C&I vendor community for the 2019-2021 Plan, including:

- Building Operator Certification ("BOC") Training. The Companies will continue to support this nationally recognized training and certification program focusing on energy-efficient building operations and preventative maintenance procedures. Facilities with BOC graduates are proven to save energy, have lower energy bills, and offer an improved comfort for occupants.
- Green Professional Building Skills ("GPRO") Training. This is a series of courses and certificate exams designed to teach the principles of sustainability combined with trade-specific green construction knowledge. GPRO training will help participants meet the expectations of owners and tenants who want healthier, environmentally sustainable, and energy-efficient homes and offices. These trainings will be offered in partnership with the CT Green Building Council.
- ENERGY STAR Portfolio Manager Training. The EPA's ENERGY STAR Portfolio Manager is an online software tool used to measure and track energy and water consumption, as well as GHG emissions. The Portfolio Manager software can be used to benchmark the performance of one building, or a whole portfolio of buildings.

  For the 2019-2021 Plan, the Companies will continue their partnership with the EPA and provide ENERGY STAR Portfolio Management technical support related to the automatic transfer of billing data to the Portfolio Manager software. The Companies will encourage SBEA vendors to attend these EPA online seminars and explore how this benchmarking software can help them target specific customer market segments and identify energy efficiency opportunities.
- Certified Energy Manager ("CEM") Training. The CEM credential, offered through the Association of Energy Engineers ("AEE") is widely-accepted as a measure of professional accomplishment within the energy management field. For the 2019-2021 Plan, the Companies may hold CEM trainings for the Companies' staff, Trade Allies, and vendor staff.
- HERS Rating and 2015/2018 IECC Information Workshops. The Companies' New Construction, Additions & Major Renovations solution offers technical trainings and educational outreach to the design and build community.
- Home Energy Performance Education for Homeowners. For the 2019-2021 Plan, the Companies will work to deliver home energy performance educational forums for the average homeowner.

This will increase the Companies' educational outreach to the residential community and may be expanded into an online education course on the Energize Connecticut website.

- Certificate Programs for Energy-Efficient Technologies. For the 2019-2021 Plan, the Companies will work to expand their Workforce Development initiative to include certificate program offerings to Connecticut's existing energy efficiency workforce.
- Heat Pump Technology Trainings for the HVAC and Home Performance Services Contractor Network. Targeted toward HVAC and home energy performance contractors, these trainings will focus on helping technicians identify which homes could benefit from the installation of heat pump technologies and the integration of HVAC controls to optimally operate the heat pump and the existing heating source.
- Health and Safety Trainings for the Home Performance Services Contractor Network. For the 2019-2021 Plan, the Companies will promote health and safety training for home performance services contractors, particularly regarding the proper steps to weatherize a home after a health and/or safety barrier has been identified. The Companies will also explore offering the BPI Healthy Homes Evaluator certification in coordination with trade allies or community colleges, and potentially promote this certification to contractors providing home performance services to customers or other contractors involved in providing weatherization services to customers. This promotion would be designed to demonstrate the Companies' support of the state-managed, DOE-funded WAP program's new policies regarding contractor training requirements while balancing the recognition that not all home performance services contractors need to be certified BPI Healthy Homes Evaluators.

## 4.3 ENERGY EDUCATION (K-12 and HIGHER EDUCATION)

The Companies have long recognized the significant impact of teaching Connecticut's youth about the important role that energy efficiency plays in protecting the environment and reducing GHG emissions. Since 2004, the Companies have worked to develop an energy efficiency and clean renewable learning initiative for the K-12 and Higher Education community—the *eesmarts* platform.

The primary goal of *eesmarts* is to facilitate students' understanding of energy-efficient technologies, the difference between renewable and non-renewable energy sources, and how electricity is generated, transmitted, and distributed to residential and C&I buildings across the electric grid. The *eesmarts* Platform focuses on the science, technology, engineering, arts, and mathematics ("STEAM") related to energy topics when developing *eesmarts* curriculum, school outreach, annual student contest, and professional development workshops. The program's curriculum is aligned with the Connecticut State Science Framework, Next Generation Science Standards (national level), and Common Core Standards for Mathematics and English Language Arts.

Other priority objectives of the *eesmarts* Platform include:

- To engage municipal officials, educators, administrators, and facilities personnel to work toward more energy-efficient and sustainable schools;
- To expand outreach and ensure the equitable distribution of energy education resources statewide, especially to urban and hard-to-reach communities;
- To facilitate collaboration and connections among educators and energy and environmental advocates; and
- To inspire students (K-12 and higher education) to be agents of change in their schools, colleges, universities, and communities and to promote energy efficiency and its positive effects on protecting our environment.

### TARGET MARKET

During the 2019-2021 Plan, the Companies will target classroom educators and students about the importance of energy efficiency. All energy education offerings are offered statewide, including: professional development workshops, classroom outreach, presentations, and *eesmarts* curriculum and other energy efficiency-related educational lessons and materials.

Another target market is students enrolled in community colleges and four-year universities. The Companies target the higher education student market segment during the annual *eesmarts* Student Contest.

## ENERGY EFFICIENCY CURRICULUM

Since 2004, the Companies have developed and delivered energy curriculum for use in K-12 classrooms across the state. This curriculum is designed to engage students on the importance of energy efficiency and how energy use is inextricably linked to climate change and increased GHG emissions. Additional topics covered in the *eesmarts* curriculum include renewable and non-renewable sources of energy, electricity generation, energy conservation, and calculating the energy costs of inefficient versus efficient technologies.

For the 2019-2021 Plan, the Companies will promote a broad-based energy efficiency curriculum that integrates *eesmarts* curriculum with supplemental lessons and curriculum developed by other energy education organizations. Utilizing supplemental curriculum gives the Companies the flexibility to select new and up-to-date lessons regarding energy efficiency rather than having to invest time and financial resources into developing new *eesmarts*-branded curriculum.

During the 2019-2021 Plan, the Companies will also make *eesmarts* curriculum for today's technologically-advanced classroom environment. This includes making curriculum available online for download and making adjustments that will allow educators to use the materials on Smart Boards. Additionally, by shifting K-12 energy education curriculum online, the Companies are reducing eesmarts' carbon footprint with the decreased materials being sent to landfills and/or incinerators.

## ENERGY EDUCATION INSTITUTE (PROFESSIONAL DEVELOPMENT)

During the 2019-2021 Plan, the *eesmarts* Platform will continue to offer comprehensive and high-quality professional development ("PD") workshops for Connecticut educators. These workshops, called Energy Education Institutes, are held after-hours, on district PD days, and during summer vacation. These workshops transform educators into ambassadors who take back the message of energy efficiency to thousands of K-12 students and their families.

Energy Education Institutes will focus on improving an educator's understanding of the STEAM topics related to energy efficiency and how to effectively teach them in the classroom. These PD workshops will typically run one or two days, and focus on energy-related topics, including: energy conservation, energy-efficient technologies, and climate change. The K-12 *eesmarts* curriculum will continue to be utilized during Energy Education Institutes; however, the Companies will look toward supplementing lessons from national programs and other energy education organizations in 2019-2021.

Starting in 2018 and continuing in 2019-2021, the Companies have stopped distributing stipends and museum passes to educators for attending PD workshops. Energy Education Institute participants will receive online access to *eesmarts* curriculum and any supplemental energy education materials utilized during PD workshops at www.eesmarts.com.

## STUDENT CONTEST

For the 2019-2021 Plan, the Companies will reinitiate the annual *eesmarts* Student Contest that invites students to showcase their understanding of energy efficiency and STEAM-related skills. The 2018 contest was cancelled due to the legislative diversion of funds from the Companies' energy efficiency programs.

For the K-12 contest, students are asked to answer a grade-level prompt regarding energy efficiency, renewable energy sources and related technologies, and sustainability. Examples of previous prompts include: poster designs, narratives, news articles, book reviews, persuasive essays, public service announcements, presidential persuasive speeches, persuasive images (in words, pictures, or video), limericks regarding the 3 R's (Reduce, Reuse, and Recycle), and community-based projects.

In 2016-2018, the K-12 Student Contest expanded to include a higher education category entitled *Wright the World*, which encouraged students to write a creative play regarding energy efficiency-related learning objectives. Throughout the 2019-2021 Plan, the Companies will continue to include a *Wright the World* prompt for higher education students.

In 2013, the Companies created an online portal to streamline the K-12 Student Contest entry process. For the 2019-2021 Plan, the Companies will continue to only accept online entries for Grade 3-12 entries and for the college-level prompt. Since Grades K-2 entries are posters regarding energy efficiency, the Companies will continue to accept these entries via US mail. Student contest finalists are honored at a special awards ceremony held at the Connecticut State Capitol.

## OUTREACH

For the 2019-2021 Plan, the Companies, through a third-party contractor(s), will provide school assembly educational presentations and/or performances on the topics of energy efficiency, energy conservation, climate change, renewable energy technologies, and sustainability.

Additionally, in 2019-2021, the *eesmarts* Platform may offer in-class lessons regarding energy efficiency to hard-to-reach and undeserved markets. These lessons will feature hands-on activities and promote an energy-efficient ethic in the school communities that participate. In 2019-2021, based on program budgets, *eesmarts* will conduct outreach and enrollment activities, which may include but are not limited to: attending environmental energy events and presenting lessons at educational conferences.

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## 4.4 COMMUNITY OUTREACH INITIATIVE

For the 2019-2021 Plan, the Companies will provide limited support to Connecticut's communities to drive energy efficiency and conserve natural resources. The Companies' outreach efforts will include providing limited technical support and guidance toward entities that wish to engage their community (e.g., business, neighborhood, school, or municipality) in energy efficiency.

### TECHNICAL SUPPORT

In 2019-2021, the Companies will continue to ensure that energy aggregate data is updated monthly on the Connecticut Energy Efficiency Dashboard (see Appendix B) to provide the most up-to-date information to entities working to drive energy efficiency in their communities.

Additionally, the Companies will continue to encourage municipalities and businesses (e.g., hotels, nursing homes, schools, small businesses, etc.) to utilize the EPA's ENERGY STAR Portfolio Manager software to track their energy and water consumption, as well as related GHG emissions. The Companies will provide technical support related to the automatic transfer of billing data to the EPA's Portfolio Manager software. Additionally, for the 2019-2021 Plan, the Companies will provide resources to providing municipality support for benchmarking and data analysis for Connecticut's towns and cities.

Through the Workforce Development initiative, the Companies will encourage communities to participate in the EPA's online webinars regarding how to utilize its Portfolio Manager software. Additionally, the Companies will promote other Workforce Development trainings, including GPRO, to community groups (e.g., businesses, municipalities, environmental organizations). GPRO is a series of courses and certificate exams designed to teach the principles of sustainability combined with trade-specific green construction knowledge to participants (typically business and municipal facility managers).

### UIL COMPANIES COMMUNITY OUTREACH

In the 2019-2021 Plan, United Illuminating, CNG, and SCG ("UIL Companies") will continue to support their communities in a holistic manner through the Community Outreach initiative, a community-centric integrated support mechanism that promotes energy efficiency and the conservation of natural resources.

The UIL Companies will continue to serve as an engagement channel to communities in their service territories (e.g., task forces, municipalities, environmental groups, etc.) to promote energy efficiency. Throughout 2019-2021, the UIL Companies will collaborate with a community engagement group to host annual Community Forums where communities can share best practices, learn about new energy-efficient technologies and Energy Efficiency Fund programs, and hear about sustainable efforts.

Additionally, the UIL Companies will encourage the SBEA vendor community to utilize the ENERGY STAR Portfolio Manager software to drive more business engagement in energy efficiency and to generate more comprehensive energy-saving projects in the C&I Energy Efficiency Portfolio.

In 2019-2021, the UIL Companies will continue to work with universities through their University Community Partnership initiative. This partnership awards grants to universities to further energy-efficient technologies that can be distributed throughout communities. Currently, the Energy Efficiency Fund (through the UIL Companies) matches funds with the University of New Haven to work with Sikorsky (Stratford, Conn.) to explore the implementation of fault detection devices. These technologies are placed on a rooftop unit and measure the amount of output versus the energy that is consumed. This testing equipment determines if the rooftop unit is operating efficiently. The UIL Companies are working on conducting a similar initiative with the University of Bridgeport.

## ENERGIZE CONNECTICUT CENTER & MUSEUM PARTNERSHIPS

The Energize Connecticut Center ("Center'), located in North Haven, Conn., is an interactive, professionally-staffed facility that serves as a valuable educational resource for promoting energy-efficient products, services, and ideas. This educational facility hosts seminars, special events, and student and adult tours; all geared toward teaching customers that they can use energy wisely and protect the environment, while not sacrificing comfort or style.

The Center offers free guided tours and learning activities for children in Grades K-12. During a tour, students learn about energy, energy generation and distribution, non-renewable and renewable energy sources, energy efficiency, and the inextricable link between energy consumption and climate change. All tours and activities are aligned with the Connecticut State Science Framework, Next Generation Science Standards (national level), and Common Core Standards for Mathematics and English Language Arts. Tours and activities are also offered to community groups and adult visitors, and a meeting/event room is available at no charge for Connecticut groups.

Due to the legislative budget diversions for 2018-2019, the Companies had to significantly curtail the Center's operations, including reducing operating hours and scheduled tours. Throughout the 2019 program year, the Companies will continue to conduct school and group tours of the Center, provide rooms for meetings and events to organizations and community groups (e.g., Girl Scouts), and support special events (e.g., Earth Day and Family Science Day). The Companies will cease Center operations by January 2020. The Companies will work to sustainably breakdown the Energize Connecticut Center's exhibits and find suitable homes for the Center's educational displays within Connecticut's museum and science center community.

## Museum Partnerships

During the 2019-2021 Plan, the Companies will expand their community outreach by pursuing museum partnerships statewide with Connecticut science centers and museums. The Companies will work with Connecticut museums and science centers, on a case-by-case basis, to support local community outreach and special events regarding energy efficiency.

## 4.5 BUDGETS

For the 2019-2021 Plan, the Companies will continue to deliver comprehensive sustainable educational and workforce development initiatives through the Workforce Development, Education, and Community Outreach Portfolio. Here are the 2019-2021 budgets:

Table 4-1: 2019-2021 Workforce Development, Education & Community Outreach Budgets

| Program Name | 2019 | 2020 | 2021 | Total |
|---|---|---|---|---|
| Educate the Public | | | | |
| Sustainable Community Outreach | $ 567,219 | $ 563,335 | $ 570,028 | $ 1,700,582 |
| Energize Connecticut Center & Museum Partnerships | $ 578,873 | $ 588,002 | $ 404,286 | $ 1,571,160 |
| Total: Educate the Public | $ 1,146,092 | $ 1,151,337 | $ 974,314 | $ 3,271,742 |
| | | | | |
| Customer Engagement Platforms | $ 1,750,898 | $ 3,013,612 | $ 3,025,000 | $ 7,789,510 |
| | | | | |
| Educate the Students | | | | |
| Professional Development & Outreach (K-12 & University) | $424,308 | $611,979 | $615,313 | $1,651,601 |
| K-12 Student Contest | $35,166 | $35,166 | $35,166 | $105,498 |
| Total: Educate the Students | $ 459,474 | $ 647,145 | $ 650,479 | $ 1,757,099 |
| | | | | |
| Educate the Workforce | | | | |
| Career & Technical Education Program Certifications | $91,077 | $186,556 | $242,301 | $519,933 |
| Career & Technical Education Program (Workshops, Trainings & Events) | $81,763 | $165,738 | $239,905 | $487,406 |
| Higher Education Initiatives & Trainings | $81,406 | $289,336 | $411,405 | $782,147 |
| Total: Educate the Workforce | $ 254,246 | $ 641,630 | $ 893,611 | $ 1,789,487 |
| TOTAL EDUCATION | $ 3,610,709 | $ 5,453,725 | $ 5,543,404 | $ 14,607,838 |

# CHAPTER FIVE: BENEFIT-COST SCREENING

## 5.1 OVERVIEW

For the 2019-2021 Plan, the Companies use identical benefit-cost ("B/C") methodologies for program and measure screening. The B/C screening tools contain consistent methodologies and the same sources for program-induced avoided costs and benefits. The electric and fossil fuel avoided costs are based on a regional avoided energy supply cost study completed in 2018 for New England[89] ("2018 AESC"). The transmission and distribution (electric) avoided costs are based on studies conducted by the Companies in 2017.[90]

The 2019-2021 Plan was screened on an annual basis by each Company for all three years (5 sets of Company B/C tables x 3 years). In addition, a combined statewide B/C table is provided for each program year. These statewide combined B/C tables include all benefits and costs from the electric and natural gas programs rolled up into three annual portfolio tables.

The Companies use the Connecticut Program Savings Document ("PSD")[91] to verify savings assumptions, including the results of program evaluations. The PSD provides engineering estimates, savings algorithms, and measure life estimates used by the Companies within their programs. The PSD also reflects the results of evaluations by providing realization rates to "true-up" savings based on third-party independent evaluations.

All electric and natural gas conservation measures in the 2019-2021 Plan are evaluated within an integrated supply-and-demand planning framework to ensure that the programs are cost-effective and yield positive net benefits to customers. Use of common cost-effectiveness testing methodologies and savings assumptions allows DEEP, the Public Utilities Regulatory Authority (PURA), the Energy Efficiency Board, and others to compare the benefits, costs, and B/C ratios on a program and measure basis. This chapter provides detail on the B/C tests utilized in the 2019-2021 Plan, including the following:

- 2018 AESC;
- Types of B/C tests to be used in the 2019-2021 Plan;

[89] Synapse Energy Economics, Resource Insight, Les Deman Consulting, North Side Energy, Sustainable Energy Advantage. *Avoided Energy Supply Cost Study in New England: 2018 Report*. Mar. 30, 2018.
[90] Eversource values based on: ICF International, *Assessment of Avoided Cost of Transmission and Distribution,* Jul. 17, 2017. United Illuminating values were based on: Harbourfront Group, Inc., *Avoided Transmission & Distribution Cost Study Report, 2000-2026*. Aug. 1, 2017.
[91] The Companies' PSD is filed annually as part of the Electric and Natural Gas Companies' C&LM Plan or Plan Update. The PSD is a centralized reference of savings (e.g., energy, capacity, fossil fuel, and other non-electric) assumptions used by the Companies within the energy efficiency programs.

- Benefits used within each of the B/C tests and their source;
- Financial parameters (e.g., discount rate and inflation factors used in B/C testing);
- Use of avoided costs from the 2018 AESC; and
- Avoided Costs (Appendix).

## 5.2 AVOIDED ENERGY SUPPLY COST STUDY

Most of the avoided costs used in the Companies' B/C testing will be updated for the 2019-2021 Plan based on the recently completed 2018 AESC.[92] The 2018 AESC was sponsored by New England energy efficiency program administrators. In addition, other non-utility parties (e.g. regulators and consultants) formed the Avoided Cost Study Group to oversee the development of the 2018 AESC. Previous iterations of an avoided cost study were conducted on a biennial basis. However, beginning in 2015, the AESC moved to a three-year cycle which coincides with the current three-year planning cycle in Connecticut.

## 5.3 BENEFIT-COST TESTS

### Benefit-Cost Tests

The following three B/C tests were utilized in the 2019-2021 Plan. The B/C tests compare the net present value of program induced avoided costs with the cost to achieve the benefits. These three B/C tests have been used since the 2015 Plan and include: (1) the Utility Cost Test, (2) the Modified Utility Cost Test, and (3) the Total Resource Cost Test. These tests are summarized below, and additional details are provided in Table 5-1 below.

- The Utility Cost Test ("UCT") includes the value of utility-specific benefits and program costs associated with those benefits. For example, the UCT includes energy avoided costs from electric and natural gas conservation measures/programs and all program costs associated with acquiring those benefits. The UCT does not include customer out-of-pocket costs, or costs or benefits associated with oil or propane savings. Nor does the UCT include non-energy impacts or the non-embedded value of GHG emissions reductions.
- The Modified Utility Cost Test ("MUCT") includes all benefits and costs as the UCT. In addition, the MUCT includes oil and propane-avoided costs, and the program costs associated with acquiring oil and propane savings. Note that the MUCT currently applies only to electric residential programs that have oil or propane savings.

[92] Synapse Energy Economics, Inc. *Avoided Energy Supply Component in New England: 2018 Report*, Mar. 30, 2018.

- The Total Resource Cost Test ("TRC") includes all energy and non-energy benefits, such as water savings, non-embedded emissions, environmental attributes, and non-energy impacts. In addition, the TRC includes all costs associated with acquiring these savings. This includes program costs and customer out-of-pocket costs.

Table 5-1 provides the benefits (numerator) and costs (denominator) that are used within the three B/C tests, as well as their value and source.

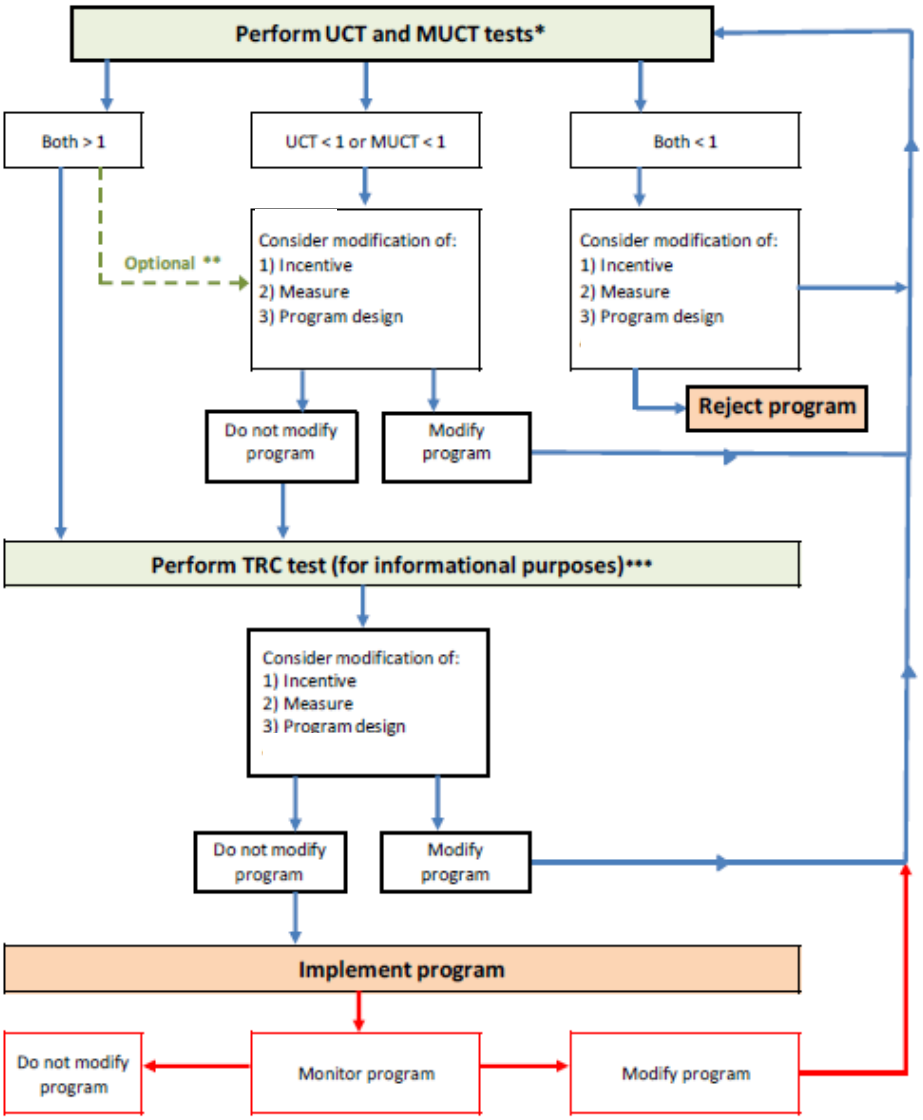
Table 5-1: Benefit/Cost Testing Summary (including the source of the avoided costs/benefits)

| Benefit Type (numerator) | Units | 15 Year-Value Levelized Cost ($ 2018) | Utility Cost Test (Natural Gas/Electric) | Modified Utility Cost Test | Total Resource Cost Test | Source |
|---|---|---|---|---|---|---|
| Electric Program Benefits | | | | | | |
| Energy | $/kWh | $0.058 | X | X | X | 2018 AESC |
| Capacity | $/kW | $71.09 | X | X | X | 2018 AESC |
| Transmission | $/kW | $0.86 | X | X | X | EDCs (Note 1) |
| Distribution | $/kW | $30.89 | X | X | X | EDCs (Note 1) |
| Pooled Transmission Facilities (Note 2) | $/kW | $92.16 | X | X | X | 2018 AESC |
| Reliability (Note 2) | $/kW | $4.15 | X | X | X | 2018 AESC |
| Energy DRIPE (Note 3) | $/kWh | $0.028 | X | X | X | 2018 AESC |
| Capacity DRIPE (Note 4) | $/kW | $258.42 | X | X | X | 2018 AESC |
| Natural Gas Program Benefits | | | | | | |
| Natural Gas | $/MMBtu | $7.76 | X | X | X | 2018 AESC |
| DRIPE (Note 5) | $/MMBtu | $3.02 | X | X | X | 2018 AESC |
| Other Benefits | | | | | | |
| Oil | $/MMBtu | $22.51 | | X | X | 2018 AESC |
| Oil DRIPE | $/MMBtu | $0.112 | | X | X | 2018 AESC |
| Propane | $/MMBtu | $31.39 | | X | X | 2018 AESC |
| Water | $/Gallons | $0.014 | | | X | CT rates (Note 6) |
| Non-Energy Impacts | $ (varies) | N/A | | | X | Various |
| Non-Embedded Emissions | $/kWh | $0.042 | | | X | 2018 AESC |
| Fossil Emissions | $/ton | $100/ton $CO_2$<br>$11,955/ton NOx | | | X | 2018 AESC |
| Cost (denominator) | | | Electric Cost (no oil/propane) | Program Cost (including oil, propane) | Total Cost (program + customer) | |

**Note 1:** Transmission and Distribution benefits are based on Electric Distribution Companies' ("EDC") studies conducted in 2017. The Companies use weighted average values for T ($0.84/kW) and D ($30.29/kW) from those studies.
**Note 2:** Pooled Transmission Facilities and Reliability are new benefits. They were not included in previous versions of the AESC Study and therefore, were not included in B/C screening prior to 2019.
**Note 3:** Includes all DRIPE identified in 2018 AESC, including own-fuel DRIPE and cross-fuel DRIPE (Connecticut DRIPE and rest-of-pool).
**Note 4:** Capacity DRIPE includes Connecticut and rest-of-pool components.
**Note 5:** Includes all DRIPE identified in 2018 AESC including own-fuel DRIPE and cross-fuel DRIPE (Connecticut DRIPE and rest-of-pool).
**Note 6:** Water-avoided costs based on 2016 Tighe and Bond water and sewer data for Connecticut. http://rates.tighebond.com/index.aspx.

In Connecticut, the UCT (or MUCT for electric programs that save fossil fuels) is considered to be the primary test. The TRC is used as a secondary test to provide a broader perspective of program performance. The flow chart below (Figure 5-1) illustrates the use of three B/C tests and the iterations that may be used to refine program performance and optimize the energy efficiency portfolio.

Figure 5-1: Connecticut B/C Testing Process[93]




* Multiple rounds of UCT and MUCT testing may be employed to refine a program.
** Modifications to improve savings and benefits might be considered.
*** TRC is not used as pass/fail test. Judgment about whether a program passes muster is based on the UCT and MUCT. The TRC test merely provides an indication of whether participant contribution and program incentive are appropriate without further modification.

[93] The Connecticut B/C flowchart was developed through a collaborative effort between DEEP staff and the Companies.

In addition to the continuation of the three B/C tests, the Companies will maintain the basic framework of the B/C tests to remain consistent with prior DEEP feedback.[94] This includes the following: (1) the use of nominal avoided costs, and (2) a nominal discount rate of 3 percent[95] for all B/C testing. The discount rate is used to calculate the net present value of the avoided costs over the life energy efficiency measures. The nominal avoided costs are calculated using a 2.0 percent inflation factor based on the 2018 AESC.

## 5.4 FUTURE CONSIDERATIONS

In May 2017, the National Efficiency Screening Project ("NESP") released the National Standard Practice Manual for Cost-Effectiveness ("NSPM").[96] The NSPM builds upon the existing California Standard Practice Manual that has been used throughout the United States for decades. The NSPM expands B/C testing beyond traditional tests and allows jurisdictions more flexibility to adjust current tests to better align with local policies.

Recently, DEEP has initiated discussions with the Companies and the public, on the development of a Resource Value Test ("RVT") consistent with the NSPM to reflect State policy goals outlined in the 2018 CES. The RVT could provide more appropriate methodologies to screen measures (e.g., high-efficiency heat pumps) that offer customers energy savings and have environmental attributes (e.g., GHG emissions, water savings, etc.) consistent with the strategies outlined in the 2018 CES. The Companies will continue to work collaboratively with DEEP during this process and implement any changes to B/C testing in plan updates, with review by the Energy Efficiency Board and approval by DEEP.

In August 2018, Synapse Energy Economics, on behalf of the Massachusetts Department of Energy Resources, issued a study[97] on the associated incremental avoided compliance costs of the Massachusetts Global Warming Solutions Act. This study titled *Analysis of the Avoided Costs of Compliance of the Massachusetts Global Warming Solutions Act* concluded that the incremental avoided cost of compliance with the Massachusetts Global Warming Solutions Act was $17/MWh or $35/tons of carbon dioxide. For the 2019-2021 Plan, the Companies and the Energy Efficiency Board will review the Massachusetts study to determine and evaluate if similar incremental avoided compliance costs should be incorporated into the Companies' benefit-cost methodologies.

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[94] September 26, 2014 DEEP Resolution of Conditions.

[95] Discount rate is based on DEEP's Approval with Conditions of the 2019-2021 Plan (dated November 11, 2018), filed on December 20, 2018, Compliance Item No 5. Please see Appendix E of the updated 2019-2021 Plan (this document) for more details.

[96] National Efficiency Screening Project. *National Standard Practice Manual*, May 2017. Available at: https://nationalefficiencyscreening.org/national-standard-practice-manual/.

[97] Synapse Energy Economics. *Analysis of the Avoided Costs of Compliance of the Massachusetts Global Warming Solutions Act*, Aug. 2018. Available at: http://ma-eeac.org/wordpress/wp-content/uploads/MA-GWSA-Supplement-to-2018-AESC-Study.pdf.

# CHAPTER SIX: CUSTOMER ENGAGEMENT PLATFORMS

## 6.1 OVERVIEW

The design and implementation of digital customer engagement platforms were completed by both Eversource and UIL during the 2016-2018 Plan. For the 2019-2021 Plan, the Companies will continue to utilize their respective customer engagement platforms to glean customer intelligence and insight into key efficiency motivators. The powerful data analytic tools contained within the Companies' customer engagement platforms will continue to be leveraged to benefit all customers in Connecticut, and results from marketing campaigns, database analyses, and go-to-market strategies will be shared regularly with the Energy Efficiency Board.

Each of the Companies' platforms allow customers to utilize the US DOE's Green Button to download their electric usage data. Additionally, customers can manually input other fuel type data (i.e., natural gas, oil, or propane) to calculate their entire energy usage data. This energy data is compiled by the Companies to provide targeted energy-saving opportunities and give insightful, personalized recommendations to customers. This enables customers to have an empowering and engaging energy savings experience.

Throughout the 2019-2021 Plan, the Companies and the Energize Connecticut website committee will continually work to identify ways to create and improve linkages between the Companies' customer engagement platforms and the Energize Connecticut website to improve the customer experience.

## 6.2 EVERSOURCE CUSTOMER ENGAGEMENT PLATFORM

The Energy Savings Plan and Energy Analysis Tool (aka: Customer Engagement Platform) is an interactive online tool launched in 2015 to increase participation in energy efficiency across all Eversource's operating companies in Connecticut, Massachusetts, and New Hampshire. The platform has 3 different modules, which are: 1) residential, 2) small to medium commercial, and 3) Enterprise for Large C&I managed accounts. The Energy Savings Plan is the name for the residential and commercial modules and the Energy Analysis Tool is the name for the enterprise module. In general, the Energy Savings Plan allows customers to understand their energy use, identify measures to save energy and costs, create an energy savings plan, and track their results against the plan.

For residential and commercial property owners, the "Energy Savings Plan" offers targeted energy efficiency recommendations based on the building's current energy usage, segment, and

owner/business profile. For tenants, some of the building improvements will have to be performed with building owner permission. Customers can check their energy usage and costs history spanning the past three years, compare their consumptions with prior billing period or similar billing periods of the previous year, and understand their energy efficiency performance compared to similar customers in their geographic area and customer segment. Furthermore, customers are provided with an analysis of their energy use by categories, such as cooling, heating, or lighting. For customers who participated in energy efficiency programs before, corresponding project information is provided from Eversource's tracking systems to this platform to help customers track their historical participation.

For large Enterprise customers that are managed accounts, annual electricity usage is over 1.5 MWH, the Energy Analysis Tool provides them the flexibility to analyze their usage at an individual account level and an aggregated site level. This platform is equipped with benchmarking functionality which could help customers to easily view the energy efficiency performance of their buildings and determine where further energy efficiency enhancements are needed. Additionally, historical projects with energy-saving measures and savings data provides customers with a comprehensive view of their portfolios.

Through those self-sufficient tools, Eversource hopes to penetrate the market comprehensively and cost-effectively, by delivering customers targeted messaging driving deeper and broader savings, and ultimately improve customer satisfaction.

Figure 6-1: Energy Savings Plan

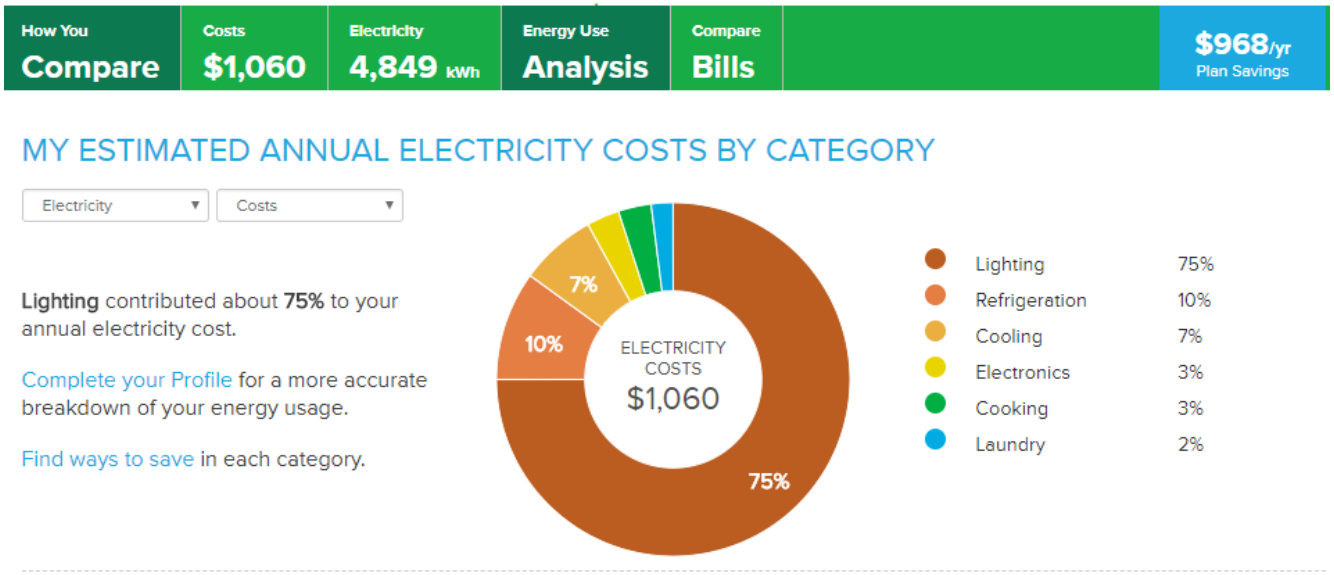


Figure 6-2: Setting an Energy Saving Goal

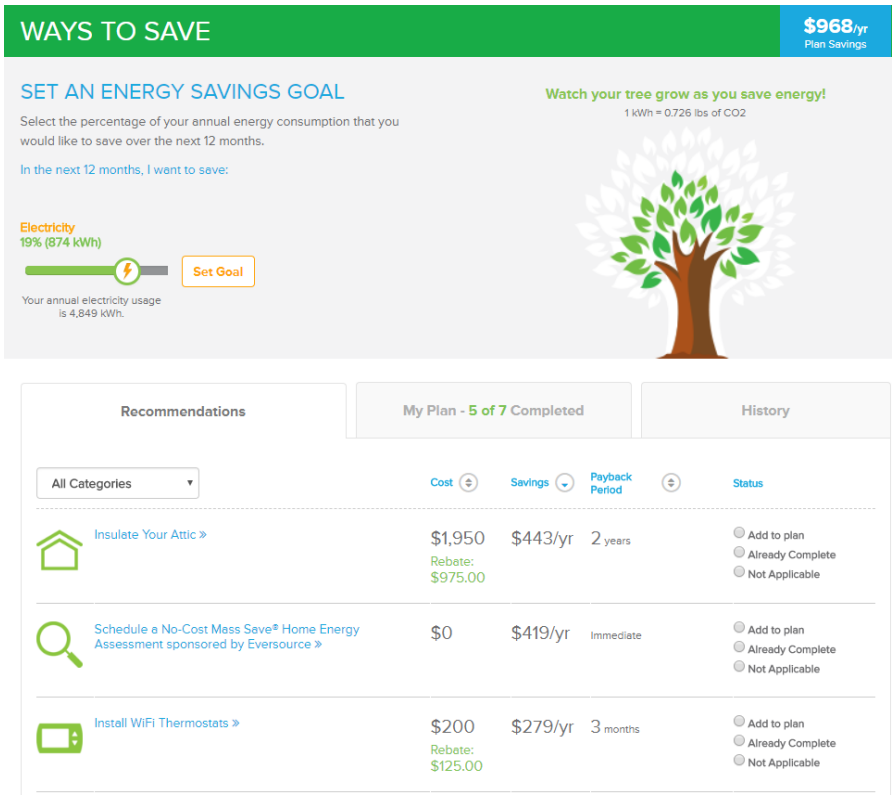
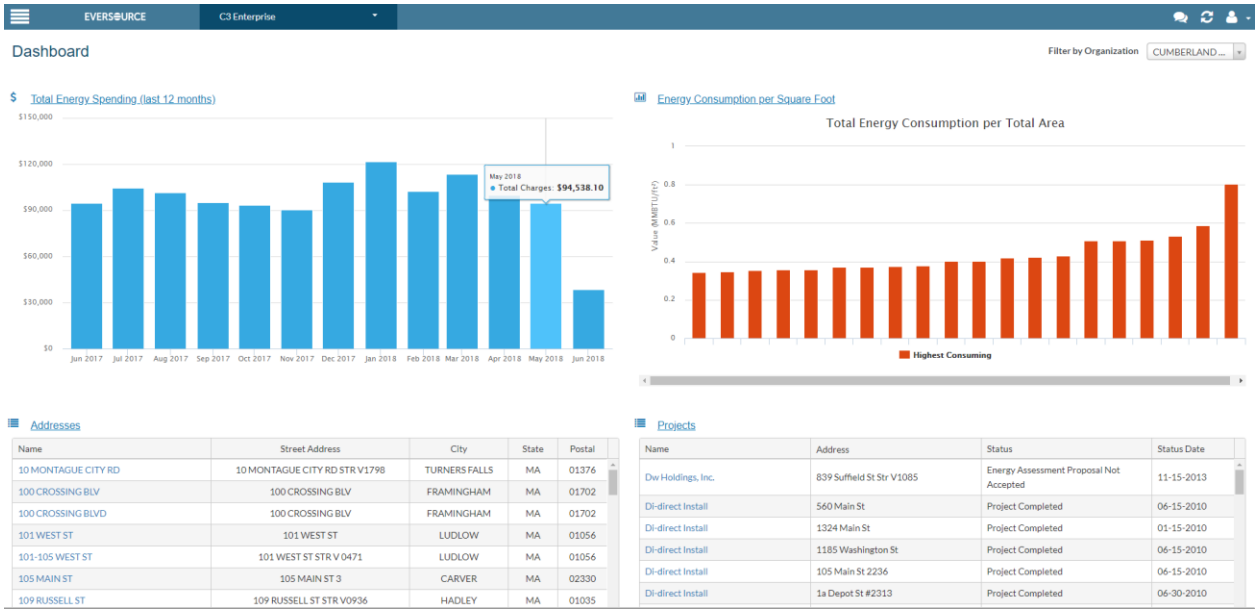



Figure 6-3: Energy Analysis Tool



### E-MAIL COMMUNICATIONS

In 2019, Eversource will start sending monthly e-mail communications to residential electric and natural gas customers containing customized usage insights pulled from the Customer Engagement Platform. The goal of the communications is to deliver valuable content developed within the Customer Engagement Platform to customers in an easily accessible and digestible format. These monthly communications will be highly tailored and based on information known about Eversource's customers and their homes. Customer responses to these communications will assist in building out Eversource's residential segmentation database.

To gauge the impact of the communications, Eversource will set up randomized control trials with statistically equivalent groups of control and treatment customers. On an ongoing basis, the Companies will monitor the groups to observe differences in engagement with the Customer Engagement Platform, participation in other energy efficiency programs, energy usage and savings, and customer satisfaction between the groups. Communications may be expanded to include additional customers in subsequent years if result are favorable.

## 6.3 UIL CUSTOMER ENGAGEMENT PLATFORM

### Objective

The objective of UIL's CEP is to propel customer engagement into the forefront of customers' minds and to increase participation in energy-efficiency programs funded by Energize Connecticut. UIL's CEP and programs have evolved from the previous UIL web site and its associated "My Account" dashboard. In 2019, Avangrid will be seeking proposals to have one vendor provide an enhanced online CEP synchronized throughout all its companies located in Connecticut (i.e., United Illuminating, CNG, and SCG), Maine, and New York. United Illuminating, CNG, and SCG will provide DEEP with updates throughout the competitive bid's process.

In 2016-2018, UIL customer engagement efforts built upon its CEP, with enhancements focused on: engaging web functions, appropriately targeted energy efficiency information, and advice and support to achieve savings while driving greater customer satisfaction. The UIL CEP goes beyond the industry standard platform to leverage a multiple channel customer engagement approach. It is designed to cost-effectively induce the types of actions that generate the most energy savings and investments in energy efficiency, while encouraging positive behavior changes.

The UIL CEP ultimately challenges UIL customers to achieve more savings over time, while empowering them to control their energy usage. Residential and commercial electric and natural gas customers are encouraged to utilize the CEP to conduct on-line business, such as paying their utility bill, taking a simple energy audit to identify savings opportunities, and availing themselves to tailored energy-saving tips and

Energize Connecticut programs. As customers engage in actual performance upgrades and make their homes more efficient, their CEP-produced home energy report will detail their actual energy consumption data and shows them how they are progressing toward their energy-saving goals.

The UIL CEP will:

- Offer both residential and commercial engagement information, tools, and targeted advice to achieve and maintain interest in energy efficiency;
- Engage and encourage residential and business customers to be more energy efficient;
- Empower customers to lower their bills and reduce their energy consumption;
- Reveal areas where customers can make cost-saving improvements to their homes and in their habits;
- Encourage customers to think about their roles as energy users, and give them more control over their energy costs;
- Allow customers to take advantage of beneficial programs and feel supported as they take steps to improve their homes and habits;
- Increase awareness of and participation in Energize Connecticut programs, such as Home Energy Solutions, as well as UIL's online "My Account" to drive greater savings impacts; and
- Enhance customer satisfaction with UI's conservation and energy-efficiency leadership. The UIL CEP brings together a customer engagement web application that interacts and shares data with UIL's Conservation & Load Management ("C&LM") database to provide a single powerful customer engagement solution.

This interaction, or flow of data, between the UIL CEP and the UIL C&LM database will provide customers with a high level of targeted information, and customized energy-efficiency recommendations and promotions to help raise customers' energy management awareness. Customized online energy-efficiency offerings inform and educate customers so that they feel in control of their utility bills, and so they behave in a way that reduces their energy consumption on a permanent basis.

During the 2019-2021 Plan, UIL will offer dynamic promotions to communicate more effectively with customers and to draw attention to conservation programs, incentives, rebates, services, and other offers. UIL will tailor dynamic promotions to customers, based on their web activity and customer energy data, allowing for a more meaningful web experience and making it more likely that the customer will enroll and participate by providing relevant information. Promotions within the UIL CEP

will include hyperlinks with each recommended action item to open a new window and bring up content of UIL's choosing.

During the 2019-2021 Plan, the UIL CEP will continually evolve and look to add platform enhancements to better the customer engagement experience. It will also look to increase the adoption of energy-efficiency programs and measures with the Home and Business Energy Advisor modules. In conjunction with the CEP online tools, UIL will utilize a customer-targeted direct mail and electronic Home Energy Reports program. This approach will combine a third-party vendor's experience in making energy information understandable for customers, with outside expertise in designing highly-effective programs. UIL will work with its Home Energy Reports vendor to design reports specific to UI's needs, with the opportunity to modify and improve the Home Energy Reports program based on monitoring of the efficacy of the messaging and targeting in its first year. UIL's unique approach combines its vendor's consumer engagement web applications, with a proactive Home Energy Report, is designed to contribute to customer energy education, improved awareness of and participation in energy-efficiency programs, and increased customer satisfaction. The CEP will complement the impact of the future Home Energy Reports program, which in turn will guide and direct customers to the UIL CEP.

# CHAPTER SEVEN: EVALUATIONS

## 7.1 PURPOSE OF EVALUATIONS

Independent evaluation, measurement, and verification ("EM&V") has been an integral component of Connecticut's energy efficiency programs since their inception. EM&V has many objectives, including verifying program energy savings, estimating future energy savings, identifying ways to improve program delivery and results, and helping expand the reach of programs by identifying barriers to participation. EM&V guides program administrators, policy makers, and stakeholders in better understanding the extent to which program activities are successfully meeting the goals and objectives they were created to achieve. In addition, evaluations are used to verify efficiency programs' demand savings for resources in ISO-NE's FCM.

Energy efficiency programs are evaluated on an ongoing basis through an independent process overseen by the Energy Efficiency Board.[98] Evaluations are selected and prioritized based on criteria such as the length of time since the most recent evaluation of a program, the relative contribution of program savings to the portfolio, and the level of spending on the program. Independent evaluators working on behalf of the Energy Efficiency Board have conducted nearly 100 studies of the evolving suite of energy efficiency programs since 2005.[99] These studies have included: (1) Impact Evaluations, which measure the savings resulting from efficiency measures and programs and detail the factors driving those savings; (2) Process Evaluations, which assess program design and implementation to understand and improve program performance; and (3) Market Research, which assess how energy efficiency markets function and analyze market participant behaviors.

In addition to evaluations conducted through the Energy Efficiency Board, the Companies work collaboratively with other regional and national entities to share and leverage evaluation results from other jurisdictions, to make best use of available resources and avoid duplicating studies conducted elsewhere. This includes participating in the Northeast Energy Efficiency Partnerships ("NEEP") Regional EM&V Forum, a stakeholder network working to build a common understanding of EM&V issues and increased credibility and availability of efficiency-related data. In addition, the Companies will continue collaborating with NEEP, DEEP, and the Lawrence Berkeley National Laboratory on the EM&V 2.0 pilot that begun in 2017 under a US DOE grant. This grant-funded pilot has provided the Companies with

[98] See https://www.energizect.com/connecticut-energy-efficiency-board/energy-efficiency-board-committees/evaluation-committee for additional information on the Energy Efficiency Board evaluation process.

[99] See https://www.energizect.com/connecticut-energy-efficiency-board/evaluation-reports for final and draft versions of the Energy Efficiency Board evaluation reports and studies, along with related documents such as project descriptions, stakeholder comments, and supplementary materials evaluation reports.

experience with advanced data collection and analytical tools that can produce timely feedback on savings from energy efficiency projects, supporting project implementation, and evaluation efforts.

## 7.2 2018 EVALUATION RECOMMENDATIONS

One of the outcomes of the Energy Efficiency Board evaluation process is a set of recommendations for the Companies regarding how to improve the -evaluated programs. Table 7-1 details the recommendations issued in 2018, and how the Companies plan to incorporate these recommendations into the 2019-2021 Plan program offerings. The Companies have carefully considered and responded to all evaluation recommendations.

Additionally, several 2018 evaluations produced new realization rates and other estimates intended for use in the 2019 Program Savings Document ("PSD"). These recommendations are also included in Table 7-1 below.

Table 7-1: 2018 Evaluation Recommendations

| Study | Recommendation | Response |
|---|---|---|
| R1614/R1613<br><br>CT HVAC and Water Heater Impact and Process Evaluation Report and CT Heat Pump Water Heater Impact Evaluation Report | Improve program tracking to maintain a connection between the rebate and the location of the installation to the extent possible within the upstream program design. | Upstream programs provide benefits in streamlining program delivery but can create challenges with obtaining end user data from retailers,—some of whom are unwilling to provide this data. In 2017, after the program years that were evaluated for this study, Eversource took steps to improve the availability of customer end-user data, such as tying a portion of the incentive to customers providing their contact information. The Companies will continue efforts to enhance data quality but are mindful of the recommendation on rebate processing time, which can be negatively affected by additional data collection and validation requirements.<br><br>UIL reiterates that this is an upstream program where the financial interaction is with distributors. Inherent in such a program is limited information on installation contractors and end-use residential customers. |

| Study | Recommendation | Response |
|---|---|---|
| R1614/R1613<br><br>CT HVAC and Water Heater Impact and Process Evaluation Report and CT Heat Pump Water Heater Impact Evaluation Report (continued) | The overall satisfaction rating for distributors was affected by low ratings for rebate processing (the time it took to receive the rebate and communication from the Companies). To sustain participation of distributors, the Companies' program managers can improve communication to establish clear expectations around rebate requirements and timelines. | The Companies agree and note that our contracts with distributors specify the timing for providing rebates, which may be extended due to issues with the quality of data that distributors submit. The Companies will consider options for improving speed and communication around rebate processing, while maintaining data quality. |
| | Contractors expressed an interest in attending trainings offered by the Companies or third parties that increase their employees' technical knowledge of efficient products and familiarize them with program processes and requirements. Since customers may face first-cost barriers despite the rebates, the Companies could also provide training on non-monetary benefits to help them upsell efficient equipment. | The Companies agree with this recommendation and will look for opportunities to expand training to increase technical and program knowledge. |
| | Encourage distributors to stock replacement parts and increase training to contractors on installation and maintenance concerns. Contractors expressed concerns about equipment issues with the efficient equipment, such as problems finding replacement parts. | The Companies agree with this recommendation and will plan to work with distributors to address these concerns. |
| | Conduct further Net-to-Gross research for the tiered boiler incentives. In 2017, after the period of this study, the Companies changed the incentive structure for efficient boilers from a single incentive for all eligible boilers to a two-tiered system depending on the level of the boiler efficiency. | The Companies have no comment on this recommendation, as the Energy Efficiency Board leads the planning of future evaluation research. |
| | The impact results indicate that the deemed savings in the 2018 PSD need to be revised for heating system measures and heat pump water heaters. | The Companies agree and have incorporated the evaluation results into the 2019 PSD. |

| Study | Recommendation | Response |
|---|---|---|
| R1702/R1710 Codes and Standards Assessment | The Companies should consider focusing any future code enhancement efforts on non-program homes given that compliance among program homes is already quite high and that is likely to continue to be the case. | The Companies support the goal of increasing levels of code compliance for all new homes in Connecticut, and the New Construction, Additions & Major Renovations program has worked toward this goal with increased trainings on 2012 IECC requirements to code officials, builders, and others. As part of this code-related training curriculum, the program has emphasized air leakage, an area of code that the report identified as having lower compliance and will continue to do so in future trainings. |
| | The Companies should consider monitoring the impacts associated with compliance enhancement programs across the country. While the maximum potential savings from compliance enhancement are non-trivial, neighboring states have struggled to realize those savings up to this point. | The Companies will continue to monitor the results of compliance enhancement programs in neighboring states. |
| | The Companies should consider continuing to incorporate residential code enhancement trainings into their New Construction, Additions & Major Renovations program, and consider more detailed documentation of code training efforts, including follow-up surveys with attendees. | The Companies agree and will continue to support trainings throughout the year in several different areas, primarily in changes to building energy code, both internally and through partnerships with trade ally organizations. We will also track information on attendance and content of the trainings to better understand the effect on building practices, materials, and equipment. |
| R1602 Residential New Construction Program Baseline Study | The program should review and consider updating its UDRH with the values recommended in Appendix F. | The Companies have worked with the REM/Rate vendor and updated the UDRH for 2018 in accordance with the study's recommendations. |
| | The program should continue its successful promotion of high-efficiency residential new construction. As new energy codes are adopted, the program should be prepared to adjust participation requirements to maintain a substantial efficiency gap between program and non-program homes. | The Companies agree with this recommendation and raised thresholds for 2018 by eliminating the lowest program tier to push builders towards greater efficiency and staying a step above energy code. Several additional changes to incentive tiers and efficiency requirements are currently being contemplated, including: (1) an all-electric home incentive to encourage electrification and renewable thermal technologies, (2) an electric vehicle-ready checklist for the highest tier homes, and (3) an incentive for homes built using passive design principles, meeting the highest standards for efficient systems. |

| Study | Recommendation | Response |
|---|---|---|
| R1602<br><br>Residential New Construction Program Baseline Study (continued) | Now that REM/Rate can model energy savings associated with additional features of domestic hot water systems, program trainings should promote best practices around these water-related measures. | The Companies will support trainings throughout the year in a number of different areas, primarily in changes to building energy code, both internally and through their partnerships with trade ally organizations. |
| | Program trainings should pay special attention to promoting spray-applied or blown-in insulation materials whenever possible to avoid the gaps and compression that often result from using batts. | The Companies will support trainings throughout the year in a number of different areas, primarily in changes to building energy code, both internally and through their partnerships with trade ally organizations. |
| | The Companies may want to consider incorporating Quality and Installation and Verification ("QIV") protocols or real-world performance testing for mechanical equipment into their program, such as by making it a part of the QA/QC process, to ensure that the mechanical systems in program homes are performing as expected. | The Companies agree that QIV protocols and real-world performance testing of mechanical equipment could provide insight into the impact of the New Construction, Additions & Major Renovations program on the performance of program homes' equipment. We will consider pursuing such efforts in the future, contingent on available funding and program cost-effectiveness. |
| R1707<br><br>Residential New Construction Net-to-Gross (draft) | Use the retrospective NTG value of 1.56 for prospective program planning purposes, and plan to conduct another similar study to assess NTG in the future but expect a decrease in the NTG value if program-eligibility criteria do not advance dramatically. | The Companies agree and have incorporated the evaluation results into the 2019 PSD. |
| | Continue to promote the adoption of solar PV and net zero designs and improve the efficiency requirements for the lowest program tier. | The Companies agree with this recommendation and raised thresholds for 2018 by eliminating the lowest program tier to push builders toward greater efficiency and staying a step above energy code. The program is not designed to directly incentivize PV systems, but it does require PV-readiness for higher tier homes. Several additional changes to incentive tiers and efficiency requirements are currently being contemplated, including: (1) an all-electric home incentive to encourage electrification and renewable thermal technologies, (2) an electric vehicle-ready checklist for the highest tier homes, and (3) an incentive for homes built using passive design principles, meeting the highest standards for efficient systems. |

| Study | Recommendation | Response |
|---|---|---|
| R1707<br><br>Residential New Construction Net-to-Gross (draft) (continued) | Continue to include code compliance as a part of the New Construction, Additions & Major Renovations program, and carefully track the outcomes of such efforts. | The Companies agree and will continue to support trainings throughout the year in several different areas, primarily in changes to building energy code, both internally and through partnerships with trade ally organizations. We will also track information on attendance and content of the trainings to better understand the effect on building practices, materials, and equipment. |
| | Continue to exclude program homes from the savings baseline and use evaluation methods that account for free-ridership. | The Companies agree with this recommendation. |
| | Continue to improve program tracking databases. | Eversource agrees and is currently developing a new tracking system for all energy efficiency programs that is expected to enhance data quality and streamline processes for extracting and providing data to evaluators and others.<br><br>UIL has recently enhanced its tracking of new construction projects and currently stores all files related to individual program projects in its tracking system, from which they can be readily extracted. |
| R1709<br><br>Connecticut Non-Energy Impacts Literature Review (draft) | Recommended NEI values for noise reduction impacts and comfort impacts of $15 and $35 annually per weatherized unit, respectively, should be applied. Original research needs to be conducted to provide a justifiable estimate of other NEIs for Connecticut's programs, including medical and health impacts, affordability impacts, arrearage carrying cost impacts, operations and maintenance impacts, water usage impacts, economic impacts, and environmental impacts. Values for safety-related impacts and property value impacts are difficult to estimate, do not appear to have large impacts, and should not be prioritized for analysis. | As noted in Chapter 5 of this 2019-2021 Plan, DEEP has initiated discussions with the Companies on revisions to the benefit-cost test methodologies used in Connecticut, to reflect State policy goals outlined in the 2018 CES. The Companies will continue to work collaboratively with DEEP during this process and implement any changes to benefit-cost testing in future plan updates, including the potential adoption of NEI values. |

| Study | Recommendation | Response |
|---|---|---|
| C1641<br><br>Impact Evaluation of the Business and Energy Sustainability Program (draft) | The BES PAs should apply the evaluation RRs to PRIME and RCx projects moving forward, barring any significant changes in program design, measure offerings, or customers. Additionally, the PAs should apply the evaluation RR to electric O&M projects moving forward and the forward-looking RR of 0.94 to natural gas O&M projects, assuming they follow recommendation #9 and use only the PSD's Grashof algorithm to calculate steam trap savings moving forward. | The Companies agree and have incorporated the evaluation results into the 2019 PSD. The Companies agree with recommendation No. 9 and have updated the 2019 PSD to use only the Grashof steam trap algorithm, and as such are applying the 0.94 realization rate for gas O&M projects. |
| | Each BES program should implement pre- and post-project inspections and possible metering to more comprehensively document baseline conditions and most up-to-date facility operations. | Pre- and post-inspection and metering can improve the accuracy of savings estimates, but this must be balanced with the added cost of these activities. The Companies will review our practices for verifying project savings and identify areas for improvements that will not adversely affect cost-effectiveness. |
| | Evaluators identified multiple instances of equipment replacements or add-ons among RCx and O&M projects, such as variable frequency drives or lighting system upgrades. The evaluators recommend that the Energy Efficiency Board and the Companies more carefully reassess if such equipment replacement or add-on measures should be classified as O&M or RCx improvements. | The Companies agree. Equipment replacement and add-on measures have only been installed under BES in limited circumstances. For instance, there were unique cases where RCx data center measures could not be implemented without installing variable frequency drives. In these cases, the Companies have forgone claiming these savings under other programs.<br><br>Limited lighting re-tubing was occasionally done under O&M projects during the study period, in cases where tube replacement was considered a standard maintenance activity. Since 2016, lighting measures are no longer installed under O&M in practice. |
| | The BES programs' vendors should more comprehensively train the staff of participating facilities to maintain the implemented operational improvements. In addition, the evaluators recommend that the closeout process for PRIME, O&M, and RCx projects is supplemented to include "handoff" paperwork and best practices documentation before incentive payout, to maximize savings persistence. | The Companies agree on the importance of these training activities. BES vendors and program staff provide training for participating facility staff and will continue to do so. This includes providing project paperwork, such as a "PRIME package" of materials following the PRIME event and, for O&M and RCx, on-site training and documentation including all contract documents, control drawings, sequence of operations and trend data worksheets to be completed by facility staff on a monthly basis. However, staff turnover at project sites can limit the effectiveness of this training, as new staff may not be made aware of the rational improvements. |

| Study | Recommendation | Response |
|---|---|---|
| C1641<br><br>Impact Evaluation of the Business and Energy Sustainability Program (draft) (continued) | BES programs should more frequently consider peak demand savings, as some do not. The PRIME program does not consider peak demand impacts in site-specific savings estimations. However, the evaluators found that 3 of the 28 sampled PRIME electric projects caused a total of 38.9 kW savings. | The Companies will adjust the O&M and RCx realization rates to account for the demand savings being realized by those programs. For PRIME, the relatively small amount of demand savings may not be worth the effort required to accurately measure and claim this savings, particularly since we do not bid PRIME projects into the ISO-NE FCM. |
| | The BES PAs should more carefully organize and archive relevant project files such as pre- and post-installation inspection reports, pre-project trended or metered data, and vendor analysis spreadsheets, and adopt a more comprehensive method to digitally archive all relevant project files. | The Companies agree with this recommendation and have established a new standardized process for staff to document and organize project files, and a system for linking certain project files to the records in our tracking system. |
| | For the PRIME program, the evaluators recommend that the lean manufacturing savings algorithm is updated with evaluation results on load dependence factors. | The Companies agree with this recommendation and have updated the PRIME algorithm accordingly. |
| | The evaluators recommend that the utilities continually revisit the PRIME benefits and costs, examining in particular if PRIME participants are more likely to engage other C&I programs as a result of their experience with PRIME, to ensure that the program is contributing towards overall C&I portfolio cost-effectiveness. | The Companies agree with this recommendation. In many cases, PRIME is the first exposure to structured lean manufacturing improvements, especially for smaller to mid-sized manufacturers. The PRIME program helps provide these companies with a new way of thinking about how to manage processes and how to measure results and brings awareness on how they rank among peers and what improvements they may need to be competitive in today's market. This knowledge often leads to repeat PRIME projects at participating companies and establishes PRIME as a gateway for other C&I Energy Efficiency Solutions. For example, among the 12 companies with Eversource PRIME projects sampled in this evaluation, eight went on to perform additional energy efficiency work, encompassing over 30 distinct projects. Moreover, these benefits come at a relatively low cost. |
| | The current version of the PSD (2018) recommends two mutually exclusive approaches to calculating steam trap savings—Napier and Grashof. Evaluators recommend that the PAs use only the PSD's Grashof algorithm. | The Companies agree and have updated the 2019 PSD to use only the Grashof steam trap algorithm. |

| Study | Recommendation | Response |
|---|---|---|
| C1630<br><br>Largest Energy and Demand Savers Impact Evaluation | C&LM programs should use a peak period definition that references a standard time/day window each year. | The Connecticut programs have long used the ISO-NE Seasonal Peak definition. The decision to use this definition was based on analysis that found the definition had a stronger correlation with temperature and with actual system peak. Changing definitions would involve costly changes to our tracking system and our processes for calculating savings and bidding them into the ISO-NE FCM. The Companies will examine this issue more closely to determine if the costs of these changes outweigh the benefits associated with more simplified and consistent savings estimates. |
| | The Energy Efficiency Board should consider creating standardized savings workbooks for common measures, which would be used by program implementers across the Companies and by program evaluators. | The Companies have standardized workbooks that utilize PSD assumptions and calculations for common measures such as lighting. For custom projects with complex measures, we conduct more sophisticated savings analyses using approaches outlined in the PSD. (*See CT Program Savings Document, 12th edition for 2017 program year, section 3.3.1.*) This can include a range of assumptions and methodologies, such as computer simulations using approved software and modeling requirements. |
| | In order to reduce c.v. values, and thus sample size and evaluation cost, program administrators should seek opportunities to create better alignment of ex ante and ex post savings values using the observations and recommendations provided in this report and previous evaluation reports. For example, program administrators may choose to conduct more pre-installation metering on retrofit measures and commissioning on new construction measures. | Eversource recently created a process with dedicated staff for reviewing savings estimates for large projects and hired an outside firm to perform QA/QC on large projects. Additional steps such as pre-installation metering, commissioning, and post-installation surveys can add significant cost to projects that may put at risk their cost-effectiveness. In addition, savings for several projects were impacted by occupancy changes at project sites, such as buildings where leases were not renewed. Such factors are difficult to predict and are not within Eversource's control. Nevertheless, Eversource will consider pre-installation and post-installation steps for certain large projects with savings above a pre-determined threshold. |
| | Collect the raw evaluation data from the prior program evaluations so that future evaluators can use this information in selecting the best possible strata selection technique as well as the strata themselves. | The Companies agree with this recommendation. |

| Study | Recommendation | Response |
|---|---|---|
| C1639<br><br>SBEA Impact Evaluation | The Connecticut PSD should be enhanced to include a Connecticut-specific fixture wattage table that encompasses all lighting technologies typically installed or removed through program activity. This fixture wattage standard would eliminate variation among SBEA contractor assumptions. | The Companies agree with this recommendation and have developed a standard fixture wattage table for incorporation in the 2019 PSD. |
| | For electric projects, the evaluation results and RRs are directly applicable to SBEA participants moving forward. For natural gas projects, the program should apply a 78% RR, not a 77% RR, to projects moving forward. | The Companies agree and have incorporated the evaluation results into the 2019 PSD. |
| | To diversify and expand program offerings and to maximize savings, the SBEA should invest in contractor training and increased oversight of program activities to appropriately identify non-lighting measures, educate customers on their operation, and inform those customers of the benefits of high-efficiency equipment when maintained. Non-lighting measures should be a core objective for the program and its contractors. | The Companies agree and have taken several steps to increase the installation of and savings from non-lighting measures in SBEA projects. For example, we recently contracted with vendors who provide comprehensive services and measures, and the Companies score such vendors more favorably during the contractor selection process for projects. We also initiated an 8-day auditor certification course, networking events with contractors who provide a range of comprehensive measures and services, and annual trainings to help auditors learn to identify a full range of potential efficiency improvements at sites.<br><br>Eversource implemented a commissioning process for EMS systems to improve how customers operate systems, and we are considering a similar process for condensing boilers. Eversource also plans to adjust measure verification forms to include fields for contractors to document such post-installation efforts. |
| | The program should better associate utility account numbers and archive utility billing data for participating SBEA customers and establish protocols for assigning tenant-specific gas usage from master-metered or shared natural gas accounts. | The Companies agree with this recommendation. Our staff now review customer billing data prior to implementing project. Eversource is developing a new tracking system that will automate the tracking and use of these data for project analyses. |
| | The Companies should adopt a more comprehensive method to digitally archive any relevant project files, such as pre- and post-installation inspection reports, particularly for non-lighting measures. The savings calculations for all non-lighting projects should be reviewed by company technical staff and archived in a central place available to all for later review. | The Companies agree. United Illuminating currently archives such project files and Eversource is developing a new tracking system that will allow for such archiving of files. In addition, the Companies have recently added a technical review process for savings calculations for custom projects, and we provide technical review of the PSD-based spreadsheets used for prescriptive projects. |

| Study | Recommendation | Response |
|---|---|---|
| C1639<br><br>SBEA Impact Evaluation (continued) | The program's administrators and implementers should uniformly assess each lighting measure for potential HVAC interactivity and, through improved screening and inspection protocols, only claim interactive HVAC savings for fixtures installed in conditioned spaces. | Eversource currently claims interactive effects for SBEA lighting projects with over 50 percent of cooled space, and no interactive savings for projects with 50 percent or less cooled space. This approach allows for reasonable program-wide estimates of interactive effects without the added costs of determining interactive effects on a room-by-room basis for each project. United Illuminating calculates interactive effects for spaces that are air-conditioned, on a room-by-room basis. |
| | For high-savings projects and/or those with complex measures such as EMSs, the SBEA program administrators and implementers should cross-reference at least the most recent year of monthly utility bill data to "sanity check" savings before reporting. | The Companies agree with this recommendation, and currently have processes in place for reviewing savings estimates against customer usage as well as peer reviews of savings estimates for large projects. |

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# APPENDIX A: 2019 STATEWIDE MARKETING PLAN

## A.1 INTRODUCTION

The drastic sweep from the Energy Efficiency Fund to the state's general fund resulted in the elimination of statewide advertising campaigns, public relations, and market research activities in 2018; and a significant cut to planned website enhancements and activities. The Connecticut Green Bank also withdrew financial support from statewide marketing efforts in 2018; but provided in-kind support through continued collaboration on the website and other marketing activities.

Due to continued budget constraints in 2019, the 2019 Energize Connecticut ("Energize CT") statewide marketing efforts ("2019 Marketing Plan") will be confined to operations, updates, technical support, and future planning for EnergizeCT.com.

The estimated costs for the 2019 Marketing Plan are shown in Table A-1. The Connecticut Green Bank will not provide financial support in 2019 but will continue to dedicate in-kind resources.

Table A-1: 2019 Marketing Plan Estimated Costs

| 2019 Marketing Plan Task | Eversource | United Illuminating, CNG, and SCG | Total |
|---|---|---|---|
| **Website Maintenance, Updates, Technical Support, and Planning** | $146,300 | $62,700 | $209,000 |

## A.2 METRICS AND GOALS

With the continued elimination of the independent third-party market research, the ability to set metrics and goals for brand awareness and familiarity is not possible in 2019. The sweep of the Energy Efficiency Fund in 2017 resulted in the cancellation of the final brand awareness study planned for fall 2017. The last survey completed in June 2017 post-campaign showed Energize CT brand familiarity at 52.1 percent and aided brand awareness (a newer metric) at 66.3 percent.[100]

[100] To understand the relevance of these figures, the Energy Efficiency Board Marketing Committee regularly conducted and reviewed a competitive analysis of similarly situated statewide energy brands. The 2017 analysis showed that Energize CT reached levels of aided awareness close to those of Mass Save and the Energy Trust of Oregon – brands with longer histories and significantly more financial support. Aided Energize CT awareness also exceeded aided awareness of Energy Upgrade California. See: https://app.box.com/s/h7ql756hbuo317uuvvzufaxpvwqpsbv7/file/147478754138

Website traffic is tracked via Google Analytics. 2018 traffic is reported later in this 2019 Marketing Plan. Because the 2018 statewide advertising campaigns were cancelled, and the Companies dramatically scaled back programmatic marketing, it is no longer feasible to draw trending conclusions from the website's traffic (as advertising has been the primary driver of website visits historically). In 2020 and 2021, the Companies recommend reinstating search marketing[101] for EnergizeCT.com in order to drive traffic to the website and connect Connecticut's customers to energy efficiency program information. At that time, the Companies will have more trackable traffic information to share. However, it is assumed that this small investment in search marketing will not produce a significant measurable change in website traffic. As such, no metrics are proposed at this time.

While no formal goals or market research activities will be adopted or conducted in 2019, the Companies will continue to explore informal, no-to-low cost methods for collecting data to gain insights into brand awareness, messaging, and customer sources of information. Website intercept surveys (discussed in the website section below) represent one option under consideration.

## WEBSITE OPERATIONS, UPDATES, AND TECHNICAL SUPPORT: ENERGIZECT.COM

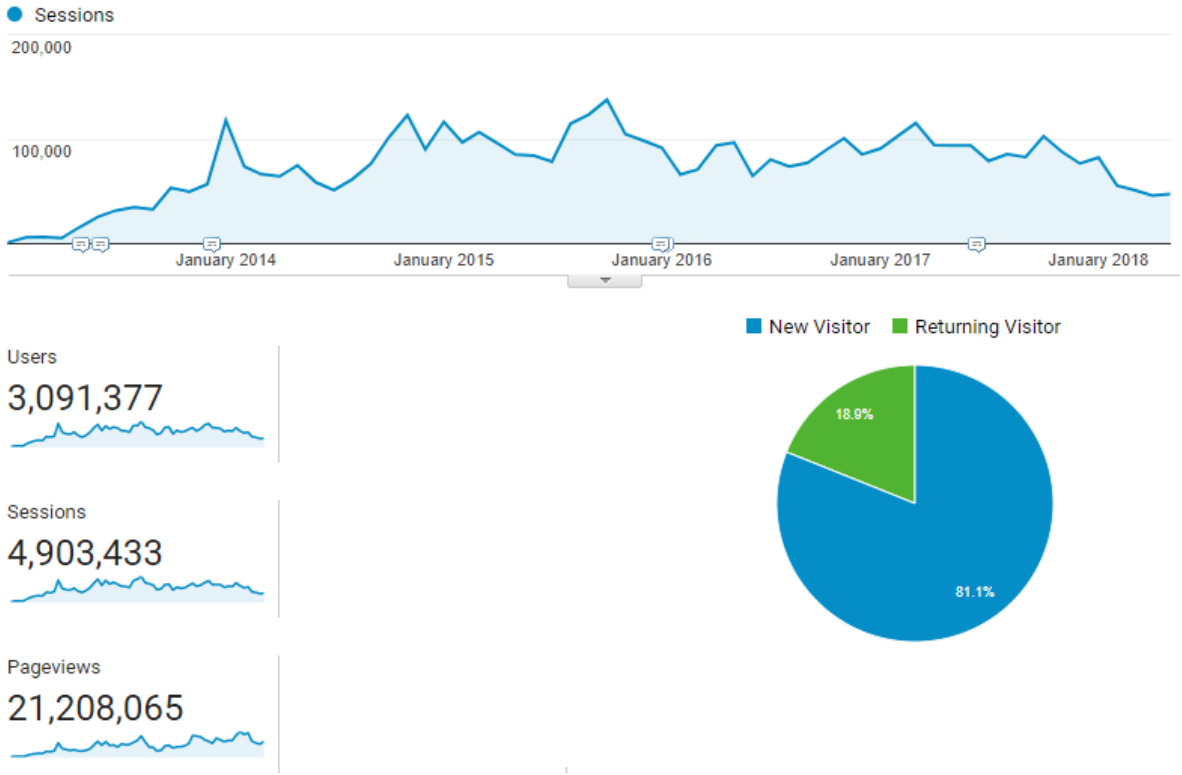
### Overview

Energy efficiency and renewable energy program information is available to Connecticut consumers, businesses, and municipalities through the EnergizeCT.com website. In addition to program information, this mobile-friendly website provides consumers with RSVP capability for Energize CT events and the ability to locate and contact local contractors and lenders. The site also provides a secure platform to disseminate key programmatic information to partner vendors and trade allies.

From launch in January of 2013 through the first half of 2018, the site has seen almost five million sessions[102] with 21+ million pageviews.[103] (For context, Connecticut has 3.6 million residents.)

[101] "Search Marketing" involves tactics to gain online presence and traffic via paid and unpaid strategies on search engines such as Google.
[102] "Sessions" indicate the number of unique browsing sessions initiated by all visitors to the Energize CT website during the selected reporting time period. For more information see: https://www.energizect.com/sites/default/files/WebsiteMarketingMetricDefinitions.pdf.
[103] A "pageview" is an instance of a page being loaded by a browser. For more information see: https://www.energizect.com/sites/default/files/WebsiteMarketingMetricDefinitions.pdf.

Figure A-1: EnergizeCT.com Website Activity




## 2018 Key Activities

With a limited budget for 2018, major changes implemented in 2018 focused on website security and readiness, expanded personalization elements,[104] localization,[105] and expansion of realtor content. To further reduce operational costs, the content from the *eesmarts*™ and CT Zero Energy Challenge websites was migrated to EnergizeCT.com.

In late 2018, the Companies issued a Web Maintenance RFP to select a website maintenance vendor for 2019. The RFP will be expanded to include a section focused on website security support and expertise.

In December 2017, the Connecticut Green Bank withdrew financial support for EnergizeCT.com. While their financial contribution to the website was limited, they did maintain the Smart-E and renewable energy content on the site and participated in the overall website strategy discussions.

[104] "Website personalization "is the process of creating customized experiences for visitors to a website. Rather than providing a single, broad experience, website personalization allows the Companies to present visitors with unique experiences tailored to their needs.
[105] "Website localization" is the process of adapting an existing website to local language and culture.

## Three-Year Strategy (2019–2021)

As the web industry changes, so do the platforms which power websites. In the case of EnergizeCT.com, the next upgrade to its content management platform (Drupal) will represent a paradigm shift – primarily due to a change in the platform's default theme engine.[106] While the upgrade of the platform will offer over 200 new features, it will require a total overhaul of the existing site. Coupled with the change toward more upstream energy efficiency programs, this need for a platform upgrade provides an opportunity to reexamine the website's overall strategy and redesign the website appropriately.

Given the limited 2019 budget, 2019 web activities will focus on planning for the platform upgrade. Major design changes will be implemented and launched in 2020 and beyond. Only those critical enhancements that translate well to the new platform will be developed and implemented in 2019

In 2020, a Website Strategist will be engaged to review the website's overall strategy, seek feedback from the Energy Efficiency Board and key stakeholders (including trade allies), and provide recommendations for any changes to the site's strategy. A team of UX (User Experience) and UI (User Interface) Designers will be engaged to provide a new design for the site based on the Website Strategist's recommendations and the new features made available from the platform upgrade. The Website Strategist will consult on the new design to ensure the new strategy is implemented. Depending on the new strategy, a Copywriter may be engaged to ensure that website content aligns with the new strategy. The development of the new site will commence in two phases: (1) Phase 1 - Front End Focus; and (2) Phase 2 - Back End and Complex Enhancements. Phase 1 will be completed in 2020. Phase 2 will be launched in 2021 and will focus on the development back-end/non-consumer-facing and more complex enhancements. Both the UX/UI design and Copywriter teams will continue to be engaged to support the complex enhancement work anticipated in Phase 2.

## Planned 2019 Activities

*Budget: $209,000*

i. Site Maintenance. Ongoing website maintenance and readiness is required to ensure that EnergizeCT.com—a well-visited, best-in-class energy efficiency and renewable energy website—is available 24-hours a day, seven days a week, and as a trusted resource for all Connecticut consumers and businesses.

ii. Site Security and Performance. Routine monitoring for security issues focused on the platform, server, and content will guard against threats and enable issues to be resolved quickly.

[106] A high-level overview of the theming differences between Drupal 6, Drupal 7 (which the Energize CT website currently uses), and Drupal 8 (which the Energize CT website will be upgraded to) are described here: https://www.drupal.org/docs/8/theming-drupal-8/theming-differences-between-drupal-6-7-8.

iii. Enhance Engagement. Sometimes small, focused changes can bring freshness to a website, and these enhancements will be explored for implementation in 2019. For example: New micro-animation features[107] can draw users' attention to calls-to-action (or "CTAs"); a fresh look to page banners can be accomplished with minimal development work; and new chatbot application programming interface ("APIs") can assist users with frequently asked questions.

iv. Facilitate Action Features. In preparation for 2020, existing content will be streamlined to facilitate customers in taking action. Tools such as data storytelling will be used to better highlight key reasons to adopt energy efficiency measures. In preparation for an increased focus on upstream program designs, a new energy-efficient product page will be created, along with an interactive graphical presentation of an energy-efficient house. A whiteboard animation video will be created to assist consumers in understanding key aspects of Supplier Choice.

v. Site Intercept Surveys. The continued use of website intercept surveys will assist the Website Strategist in understanding user behavior unique to our site, to inform enhancements, and to support increased consumer engagement.

[107] Micro-animations are small, often functional animations, that engage and provide visual feedback to website visitors. They are frequently used to improve a website's navigation, make it easier for users to interact with a website, or direct the visitors' attention to certain information.

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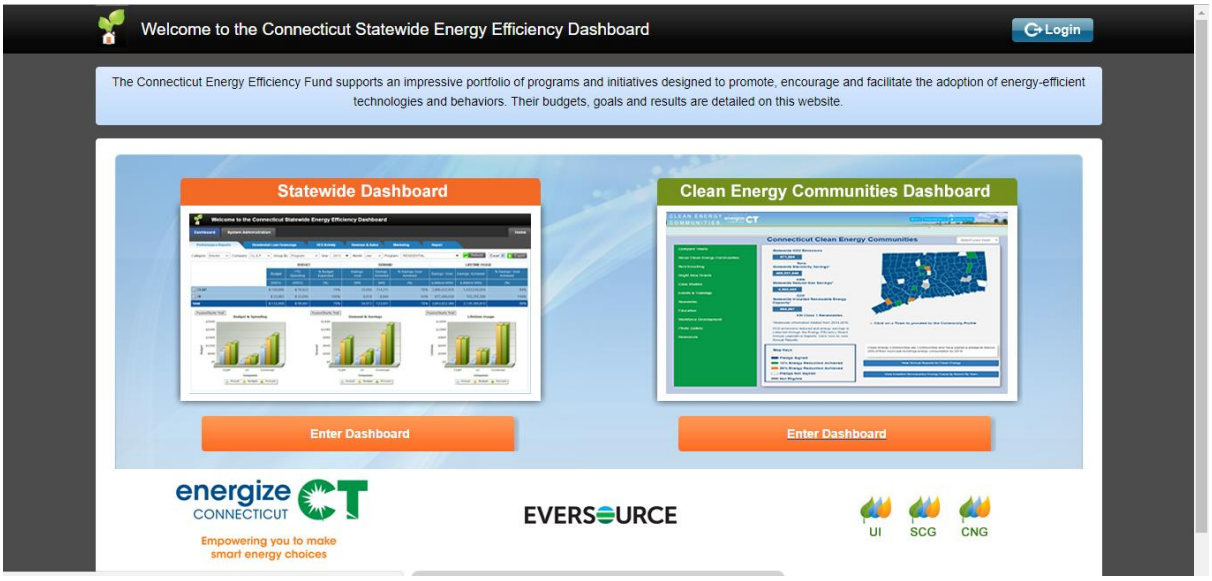
# APPENDIX B: STATEWIDE DASHBOARD

## B.1 OVERVIEW

The Connecticut Statewide Energy Efficiency Dashboard ("Statewide Dashboard") provides users with "real-time" data (updated monthly) regarding the Companies' Residential and C&I Energy Efficiency Portfolios' program performance and metrics. The purpose of the Statewide Dashboard is to provide regulators, legislators, advisors, and the general public a snapshot report regarding how well the Companies' energy efficiency programs are performing. This information is communicated via user-friendly graphs to portray program performance by company and sector (i.e., Residential or Commercial Energy Efficiency Portfolio), and details the expenditures and energy savings compared to the budget goals.

Developed in 2012, the Statewide Dashboard has undergone several upgrades to refine the data presented and to introduce more user-friendly options. Also developed in 2013, the Clean Energy Communities Dashboard has also undergone several refinements over the past few years. URL Link: http://www.ctenergydashboard.com

Figure B-1: Statewide Dashboard




## B.2 STATEWIDE DASHBOARD

The Statewide Dashboard details the Companies' spending, savings, and program information from 2006 to the present. The "Home" tab contains a summary graphic presentation of the Companies' year-

to-date spending and individual programs/solutions' (e.g., HES and Small Business Energy Advantage) energy savings are updated monthly. The "Performance Reports" contains the Companies' detailed spending and energy savings while the "Residential Loan Financing" tab contains monthly updates regarding participation in Energize Connecticut financing products.

The "HES/HES-Income Eligible Activity" tab details implemented home performance measures and fuel type data by cohort (customers with incentives linked to direct install services). The "Fund Revenue" tab contains the Companies' detailed revenues by funding source (i.e., mill rate, CAM, RGGI, etc.). The "Sales and Savings" tab provides users with information regarding utility sales, annual savings, and annual savings as a percentage of sales. The "Cost to Deliver" tab provides users with annual and lifetime costs rates and the "Reporting" tab contains a variety of automated reports, including:

- Home Energy Solutions/HES-Income Eligible;
- Legislative;
- Monthly performance;
- Statewide Dashboard; and
- Equitable distribution of funds (for HES and HES-Income Eligible).

Figure B-2: Statewide Dashboard

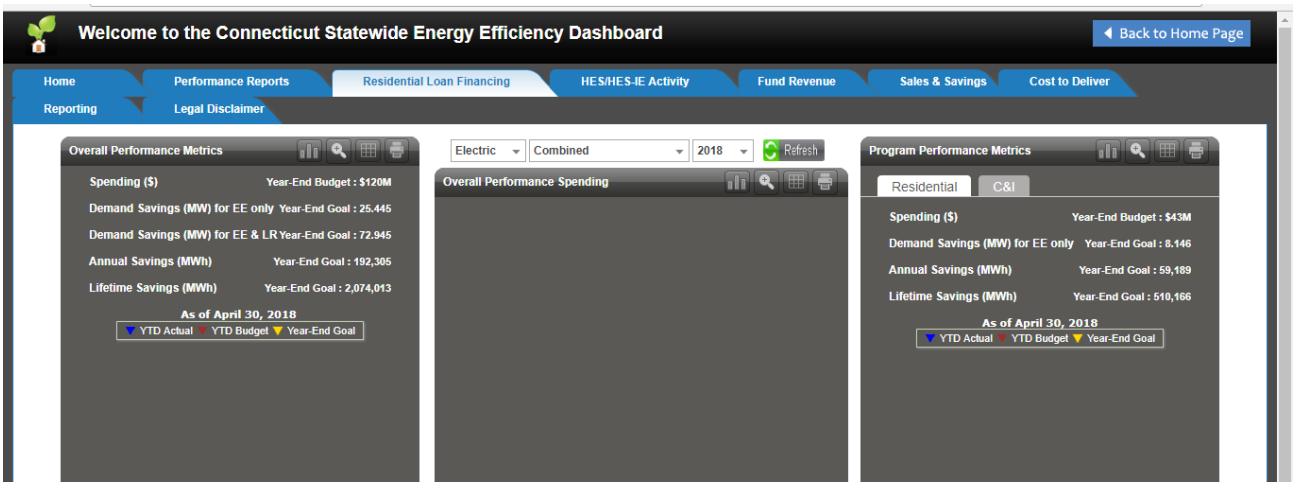


Figure B-3: Statewide Dashboard (HES Activity Tab Snapshot)

| Eversource CT Electric & UI-As of April 30, 2018 | Annual YTD | January | February | March | April | May |
|---|---|---|---|---|---|---|
| HES Visits Completed | 3,447 | 969 | 941 | 900 | 637 | |
| Avg # bulbs installed | 22 | 23 | 22 | 22 | 21 | |
| Recommended Rebates - Unique Homes | 2,804 | 793 | 760 | 747 | 504 | |
| Total Recommended Rebates | 6,297 | 1,784 | 1,704 | 1,681 | 1,128 | |
| Completed Rebates - Unique Homes | 190 | 67 | 78 | 34 | 11 | |
| Total Completed Rebates | 207 | 75 | 82 | 39 | 11 | |
| Total Upgrades By Heating Source | 3,468 | 77 | 3,338 | 42 | 11 | |
| Financing - Unique Homes that Financed Upgrades | 13 | 0 | 5 | 1 | 7 | |
| # of Upgrades Financed | 13 | 0 | 5 | 1 | 7 | |
| % of upgrades financed per HES visit | | 0% | | | 1% | |

*Calculations do not take into consideration the current three month time lag for Rebate redemption & reporting.

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# APPENDIX C: FINANCING

## C.1 COORDINATION ON GOALS AND PRIORITIES FOR 2019-2021 PLAN

*Coordination on Goals and Priorities for 2019-2021 Plan*

Joint Committee of the
Connecticut Energy Efficiency Board and the Connecticut Green Bank Board

The Connecticut Energy Efficiency Board and the Connecticut Green Bank have a shared goal to implement state energy policy throughout all sectors and populations of Connecticut with continuous innovation toward greater leveraging of customer funds and a uniformly positive customer experience. The following key priorities, organized by areas of focus, are intended to ensure that principles of leveraging ratepayer funds and continuously improving the customer experience are built into their respective board's goals:

### C&I Sector: Government & Institutional

1) Improve the Customer Experience. Ensure seamless service delivery that is responsive to State and local governmental and institutional needs.

2) Establish Sustainable and Cost-Effective Financing Mechanisms. Develop sustainable and cost-effective funding mechanisms for both the preparatory and permanent project financing needs of government sector energy-saving projects.

3) Develop New Products to Fill Market Gaps. Develop cost-effective vehicles for mid-scale energy-saving projects at government or institutional facilities that are too big for the current Small Business Energy Advantage ("SBEA") financing program, and which have customized features such as turn-key technical assistance and on-bill financing payment plan options.

### C&I Sector: Small Business

1) Improve the Customer Experience. Ensure seamless service delivery between services implementing the Conservation and Load Management Plan and the Connecticut Green Bank's operational plan. Such delivery must be responsive to customers' needs, including integration of appropriate Connecticut Green Bank and other allied small business services, especially for those that aren't currently served by the SBEA financing program.

2) Identify and Engage Alternative Capital Sources to Lower the Cost of and Increase Opportunities for Project Financing. Implement a new funding mechanism for Small Business Energy Advantage projects (which includes: small businesses, municipalities, and state buildings).

### C&I Sector: Medium and Large Businesses

1) Improve Understanding of Opportunities Within this Market for Deep Energy Efficiency Improvements. Build on available knowledge and analysis to develop effective and sustainable incentive and financing strategies for stimulating deeper energy investments and that meet all cost-effective energy efficiency goals.

2) Increase Customer Savings and Benefits from the C&I Programs. Drive more projects with deeper energy savings, supported with increased financing options (including C-PACE) to help ensure comprehensive investment and closure of financing gaps.

3) Cross-Leverage Connecticut Conservation and Load Management Plan and Connecticut Green Bank Programs. Develop and implement communication and marketing strategies to ensure maximum cross-leveraging of these opportunities to help achieve the state goals of acquiring all cost-effective energy efficiency and expanded renewable deployment through highly effective leveraging of customer funds.

### Residential Sector: Single-Family

1) Identify Coordinated Strategies for Expanding Comprehensive Loans for the 2019-2021 Plan. Review and calibrate incentives and buy-down levels as needed to increase adoption of add-on measures and achieve more comprehensive projects while reducing program costs.

2) Pursue all Cost-Effective Energy Efficiency in the Residential Sector Using Financing. Increase the amount of private sector capital where effective. Establish a simplified approval process, where possible and appropriate, to leverage ratepayer funds and achieve greater savings. These actions will meet the market needs and drive deeper energy savings and more comprehensive projects.
    - Increase HES projects with completed follow-ons per the 2019-2021 Plan, using financing as one of the tools to increase completed follow-ons.
    - Promote financing to encourage the installation of high-efficiency HVAC and DHW equipment.

3) Reduce Barriers for Energy Efficiency Improvements. Continue to collaborate on design and implementation for financing health and safety measures that are necessary to ensure buildings can safely receive energy management upgrades.

## Residential Sector: Multifamily

1) Establish, Align, Fund, and Implement Customer Friendly Financing Programs to Fill Current Unmet Needs and Market Gaps.
    - Establish a mutual understanding of unmet needs and market gaps.
    - Establish where and how current programs are aligned and/or misaligned, including: goals, desired outcomes, success metrics, processes, and incentive structures.
    - Establish goals and implementation plans to remedy misalignment and gaps.

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# APPENDIX D: PUBLIC INPUT SESSION

2019-2021 C&LM Plan - Public Input Comments
Company and Energy Efficiency Board Positions

October 4, 2018

Note: All submitted written comments, and a list of people who provided written or verbal comments, may be accessed at Box.com: https://app.box.com/s/x31h0jdsnpvh3lta4ffr02lon6x712n8

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**1) Kyle Ellsworth**

**Representing:** Efficiency for All

**Date Input Received:** 6/13/18

**Input Method(s):** Written comments

**Requests/Comments:**

Efficiency for All's comments contain multiple recommendations regarding: non-energy impacts, the Multifamily program, the HES and HES-Income Eligible programs, upstream rebates, equal access to programs for customers, marketing, residential single-family programs, the Retail Products program, the Residential New Construction Program, and retrofit program budgets and goals. The full written comments are provided in the following pages.

# Public Input Comments

2019-2021

Conservation & Load Management Plan

May 29, 2018

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2

**About Efficiency for All (EFA)**

Efficiency for All is a non-profit 501(c)(3) energy efficiency advocacy group. Our goals are to educate the public and our legislature on the importance and benefits of sound, sustainable energy efficiency policy. EFA is a stakeholder association which works to keep stakeholders informed, collect and reflect energy-related data, advocate for the stabilization and the continued development of local and national energy efficiency programs which protect human health, provide local jobs, increase positive economic outcomes, and reduce long-term energy costs. Our work supports clean energy policy, green economies, and a cleaner environment.

**Introduction and Overview**

We ask that readers thoroughly consider energy efficiency as the first and most effective step in reducing peak demand and energy costs, coupled with large and small-scale renewable resources (Solar, Wind, and Hydroelectric) as the most economical and practical approach to energy stability.

This approach simultaneously addresses the environmental concerns related to carbon emissions, air and water pollution, and the State's economic goals to reduce the energy burden on the state and ratepayer alike. We can achieve these critical goals through collaboration and the use of energy efficiency and renewable best practices statewide in all State or privately owned buildings and through proper legislation and program guidelines which require more in-depth energy efficiency through building science principles and renewable portfolio standards.

Most importantly we must keep our eyes on the long-term goal to reduce strain on our energy grid, reduce carbon emissions, and strengthen our energy plan; while simultaneously supporting our state's economic and job creation goals. With that in mind; all national and international science-based models indicate that the best way to

reach our carbon and energy goals is to reduce energy usage through energy efficiency and behavioral based changes while using the savings to increase renewable energy sources.

Our goals can be accomplished by implementing energy-saving building science techniques in homes and buildings coupled with renewable resources. These proven steps include - deeper incentives to address the building shell and envelope via air sealing, insulating, energy rated windows, efficient HVAC and DHW systems, retrofit lighting, coupled with both small and large-scale renewable resources, and conservation-based education.

The CT Energy Efficiency Fund was set through legislation requiring ratepayers to contribute and as a result of the contribution have access to programs which will reduce their energy consumption, lower carbon emissions, reduce the strain on the power grid, lower energy costs to the ratepayer. This work reduces the impact of climate change such as climate-related illness, flooding, and severe storms. Also noteworthy is educating consumers on their role in energy efficiency, as well as offering renewable energy choices, and supporting financing upgrades.

There are many integral parts of a successful Statewide Energy Efficiency program

1. Continued stabilized funding for weatherization and deep retrofits
2. Experienced Full Service BPI certified Energy Efficiency Contractors and continued training
3. Realistic Incentives and Rebates to Encourage Consumer Participation
4. Effective Program Management, Timelines, and Specific Measurable Goals
5. Transparent Program Goals and Accountability for Program Supports
6. Fair and Equal Payment to Contractors for Services Rendered Consumer Education/ Marketing of the value of the service and contribution to the state goals of lowering energy waste and slowing climate change.

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The energy efficiency funds should be protected and used in a fiscally responsible manner to implement direct energy efficiency services to ratepayers across Connecticut.

Despite the proven positive economic, energy, and environmental results there has been a consistent push to raise the customer/ ratepayer copay and lower the incentives to which are meant to offset ratepayer costs for deeper upgrades which yield more extensive energy and financial savings.

Low to Moderate Income families' higher copays and lower incentives and rebates are a barrier to program participation and an obstacle to implementing deeper measures. These raised copays and lower incentives have created direct barriers to the implementation of low-cost energy saving energy efficiency services and upgrades which Act PA11-80 was created to support.

These sectors of CT's energy users and ratepayers should be encouraged, NOT discouraged from increasing energy efficiency measures. Ratepayers have contributed to and will continue to add to the energy efficiency fund as a charge on their energy bills and therefore should reap the benefits of low cost access to direct services which are affordable and create lowered energy costs and direct energy savings which offset the need to build new fossil fuel energy plants and reduce the impacts of climate change and pollution related to energy waste. These services are available through the Energize CT programs. By ensuring all ratepayers have equal access to the programs, and that the program entry costs do not exceed the moderate income families' resources or create barriers to participation, we ensure we will stay on target to meeting Connecticut's energy, economic, and environmental goals, while creating jobs, and developing equity-based solutions that support positive outcomes across all of CT's populations and people.

## Energy Efficiency- The Five E's of Energy Efficiency

### Energy

Energy saved is the cheapest clean energy resource we have. It is the energy we don't waste, "The Negawatt". By reducing the energy we waste, we offset carbon emissions, battle climate change, protect the environment, reduce the need for additional fossil fuel energy plants, and educate consumers on how to save energy.

2017 Energy Efficiency Data by the numbers:

- energy efficiency supports 34,000 jobs in CT. (these are CT taxpayers contributing to state funds and making purchases in CT)
- Solar electric and Wind represent approx 3,000 jobs in CT
- energy efficiency saved 90 Megawatts (removing a power plant) through energy efficiency statewide (residential/SBEA/C&I) in 2017
- $42.7 Million saved by ratepayers on their reduced energy bills in 2017 - directly lowering cost of living for CT residents
- $1.4 Billion Increase to Gross State Product in 2017
- Avoided 236,000 tons CO2 in 2017
- $32 Million saved by businesses ( which can be reinvested to grow business and lower the cost of business in CT)

### Ethics

We should refrain from reclassifying non-renewable resources as renewable or "clean" resources. We should accurately refer to fuels as non-renewable vs. renewable to clarify these two fuels in an accurate, scientific way and to avoid confusion amongst the legislators or consumers/ ratepayers. We would be remiss to classify nuclear which requires mining for fossil fuel (Uranium) to be classified as renewable.

## Economics

We should require that all state and municipal buildings, as well as residential and commercial properties, be appropriately assessed and addressed, to ensure that energy efficiency and renewable measures are implemented to lower the strain on our use of fossil fuel and lower our state and consumers energy costs. Comprehensive energy efficiency projects have high ROI and increase property values, lower energy costs providing larger budgets for households and businesses alike while creating local jobs.

## Equality

Equal access to energy efficiency programs increases the chances of reaching our carbon reduction goals and introduces fossil fuel homeowners and renters to additional options for solar upgrades as well as financing options. However, by excluding oil and propane heated homes, we eliminate many low-income areas. Additionally, if we want to use less of the “dirty fuels," then we should assess and address the building's efficiency and incentivize the changes we desire. For example, heating and cooling can be up to 40% of the energy draw; let's get into the property, assess then address the waste through direct energy efficiency measures such as insulation, duct sealing, and upgraded mechanical systems. These energy efficiency services provide reduced energy cost to the ratepayer.

The energy efficiency programs contain the benefit of assessing the property (residential or commercial) for health hazards. This has resulted in hundreds of lives saved in CT and uncovered gas leaks, high CO, ALM, Mold, and other serious health impacting problems, which are often then corrected. It allows professionals to address the home as a system and provide the ratepayer/resident a full report on available incentives, energy efficiency, renewable upgrades, and financing. This is the measurable benefit of providing the professional full-BPI (HES or HES-IE) assessment

and information to the person before they make consumer choices. (As recently indicated by the DOE as suggested guidelines for PACE programs).

## Education

At this critical point in our nation's history we must stand for the education of all people in CT. We must ensure that all populations develop an understanding of energy and its relationship to our environment. All people of all races require clean air and clean water, and our energy choices affect both of these critical life sustaining requirements. It is our social and economic responsibility to ensure all CT residents are educated on where their energy comes from, how they can save energy through behavioral changes and home improvements, and most importantly why understanding energy is important for all people.

We all have our own goals in each of our respective industries, but we must keep the ratepayer, resident, consumer, and constituent in mind (they are the same). We must adhere to the overarching goal to protect and defend our environment and people from the effects of climate change and energy related fossil fuel pollution while keeping equality, ethics, and economics in mind.

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## EFA Goals

### Meeting our Energy, Economic, Environmental and Ethical Goals Efficiency for All

By supporting energy efficiency as a first step in conjunction with renewables such as solar we can meet the ratepayer needs while also meeting our economic, energy, and ethical desires.

By putting efficiency first, we can accomplish the following goals:

1. Reduce Ratepayer energy costs by lowering usage through direct E.E. services (EnergizeCT HES and HES-IE)
2. Retain 34,000 Connecticut based E.E. jobs
3. Increase economic growth through small business development - local growth/ local jobs
4. Create local E.E. and solar Jobs - putting people to work; local positive community impacts
5. Reducing carbon emissions - slow climate change and meet state goals
6. Reducing air and water pollution - protect our people
7. Reach our climate change goals and avoid negative impacts (sea level rise, stronger storms, more pest-related diseases)
8. Strengthen and localize out energy grid - move towards the future of energy and ensure energy security by localizing our resources
9. Reducing our dependence on nonrenewable fuels - avoid big expenditures on short-sighted solutions (finite fuel sources)
10. Reduce negative health impacts related to indoor and outdoor air quality issues by identifying barriers (high co, ALM, mold, disconnected ducts)

## What EnergizeCT contractors did for CT in 2017

1. Energy efficiency saved 90 Megawatts (removing a power plant) statewide (residential/SBEA/C&I) in 2017
2. $42.7 Million saved by ratepayers on their reduced energy bills in 2017 - directly lowering cost of living for CT residents
3. $1.4 Billion Increase to Gross State Product in 2017
4. Avoided 236,000 tons CO2 in 2017
5. $32 Million saved by businesses (which can be reinvested to grow business and lower the cost of business in CT)

## How to continue this great work in CT

1. Ensure we educate our state and residents on the benefits of energy efficiency and encourage all residents to participate
2. Don't create barriers to the programs / Don't continue to raise copays in HES. Equal access to programs statewide
3. Acknowledge the 34,000 workers who directly contributed to these incredible savings and carbon reductions
4. Ensure we require the HES/HES-IE/ energy efficiency property assessment as the first step in any upgrade to reduced home health issues through identification of high co, gas leaks, ALM, mold and pests during the assessment phase
5. Require entities using energy efficiency/RGGI funds to cross market programs and collaborate to save on administrative costs and consulting fees.
6. Create policies that keep long term goals in line with equity goals to ensure we factor in job creation, fiscal responsibility, energy savings, carbon goals and long term positive outcomes for spending
7. Require all state properties to increase energy efficiency measures and renewables (Lead by Example) which can save the state a projected $47 million

dollars in energy costs which can be reinvested in deeper energy projects or pay state debt

8. Create combined bundled rebates and incentives to encourage residents go deeper (energy efficiency/ solar/ insulation/ mini-split rebates)

9. Call fuels by what they are: renewable and nonrenewable to avoid consumer confusion and clarify goals

10. Keep our eye on the goals and be true to the legislative intent to lower carbon emissions, create jobs, strengthen the energy grid, lower ratepayer energy costs, make CT a better place to live

11. Implore energy efficiency program administrators and the Energy Efficiency Board to thoroughly consider energy efficiency coupled with large and small scale renewable resources (solar, wind, and hydroelectric) as the most economical and effective approach to energy stability. This approach simultaneously addresses the environmental concerns related to carbon emissions, air and water pollution, health impacts, climate change, lower healthcare costs, lower energy costs, and supports the State's economic goals to reduce the energy burden on the state and ratepayer alike. We can achieve these important goals through collaboration and the use of energy efficiency and renewable best practices statewide in all state or privately owned buildings and through proper legislation and program guidelines which require deeper energy efficiency through building science principles and renewable portfolio standards.

These sectors of CT's energy users and ratepayers should be encouraged not discouraged from increasing energy efficiency measures. Ratepayers have contributed to and will continue to contribute to the energy efficiency fund as a charge on their energy bills and therefore should reap the benefits of low-cost access to energy efficiency direct-services, which are affordable and create lowered energy costs and direct energy savings, which offsets the need to build new fossil fuel energy plants and lowers the impacts of climate change and pollution related to energy waste. These

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services are available through the EnergizeCT programs. By ensuring all ratepayers have equal access to the programs, and that the program entry costs do not exceed the moderate income families' resources or create barriers to participation, we ensure we will stay on target to meeting Connecticut's energy, economic, and environmental goals, while creating jobs, and developing equity based solutions that support positive outcomes across all of CT's populations and people.

## Non-Energy Impacts

How Connecticut can lead the way to positive economic, energy, environmental, and health outcomes? Our nation measures energy efficiency plans and outcomes and they are scored on a national scorecard. The states which use NEI (non-energy impact) factors as part of the process to develop policy and programs are the states which are ranked the highest. EFA notes that our current program model does not fully count the benefits of our energy efficiency programs. We suggest that our state move to implement testing which will more closely quantify the benefits such as: reduced healthcare costs, improved health which leads to fewer missed school days, fewer missed workdays, increased local jobs, increased GSP, taxes generated by the energy efficiency program services and purchases, lowered operating costs for the state buildings, businesses, and ratepayers, improved housing stock, grid reliability, heat loss reduction, lowering the combustion of fossil fuel, and educating the general public about energy, where it comes from, how to save it, why to save energy and more. Please see the attached energy efficiency study on cost testing and NEI benefits and our EFA Fact sheets.

## Multifamily

Multifamily properties provide excellent opportunities to reduce peak demand and energy waste across Connecticut while increasing building health and reducing energy

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costs. Historically the Connecticut multifamily program has been housed under the single family residential budget, but it has also crossed into the C&I budget and other funding sources. As recently as

last year, the multifamily program incorporated unsecured funding for building analysis through the Green Bank's SHERPA and Navigator loans, which encourage property owner to investigate energy upgrades and combine them with comprehensive proposals for building upgrades. These Green Bank programs were managed at the Green Bank and did not include the Energize CT multifamily contractor list in the pilot program.

## Suggested Improvements

1. Create an outward facing program manual
2. Create a program budget and comprehensive building science-based goals
3. Ensure properties are provided comprehensive energy assessments for baseline data, with payment to the contractor for collecting and submitting the data for the program's use
4. Educate the consumer with written reports of baseline data on proposed ROI for energy efficiency measures, provide the customer clear options to save energy and reduce energy costs while communicating the financing options
5. Ensure equity based program participation for both customers and contractors. Set program participation requirements and pricing through RFQs

## Payment Reductions

The multifamily program has continued to reduce payment to professional contractors by up to 75%. The program administrators implemented the removal of all payment for data collection, data input, baseline testing, quote gathering, energy performance data, heat loss, and review of the programs with the customer/ratepayer. There is no current payment for building science-based comprehensive proposal development or analysis, and no compensation for general contracting services by

energy efficiency professionals for the public utilities and the state. These comprehensive services are required in the program for the contractors who are BPI professionals and work statewide in the Energize CT program, but this comprehensive approach is not required for contractors which do not provide services to Energize CT or to the state of Connecticut HES and HES-IE programs.

## Technical Manual

Lack of a transparent technical manual for multifamily projects forces vendors to approach each project differently instead of in a standardized fashion. A shared technical manual would allow for program unity and transparency regarding guidelines and regulations related to the multifamily programs. Additionally, this will solve an equity issue. If contractors or customers are not aware of programs or processes they will lack the opportunity to engage in this critical work to reduce energy waste and make buildings safer, more efficient, lower operating costs, and increase health and wellness in the multifamily property sector.

## Multifamily Lead Rotation

Currently there is not a transparent process provided by the program administrators that demonstrates the procedure for distributing leads in the multifamily program. This leads to speculation among the vendors that work in the multifamily program about unequal project distribution. The suggested resolution is to use a Vendor Report Card like in the HES/IE program.

## Public Education

There currently is no effort being made to educate the public on the value of comprehensive multifamily projects. There are no publicly available multifamily success stories.



## Lack of payment for administrative tasks

There is no administrative payment for comprehensive upgrades in multifamily projects. These projects can easily consume dozens of hours of administrative work, which is no longer being compensated for. In years past, there was a 10% admin fee paid to contractors for all Tier 2 measures installed. While we understand that this former fee structure is exorbitant, we feel there should be a fair administrative fee paid to contractors to compensate them for this additional work.

## Absence of tools to calculate incentives for multifamily work

The calculation used to determine incentive levels for upgrades on multifamily projects is not available to the contractor base. This acts as a barrier to sales and complicates the administrative work done by the contractor. For example, we are not able to provide the customer with complete project budgets, which include incentives, until after the LOA is returned. This can take 60-90 days or more. Incentive tools should be accessible to any contractors that are creating proposals. This way, the playing field can be assured to be equal for all customers and all contractors. Incentives should not be randomly assigned, they should be based on standard data sets and data inputs which will calculate the standard or set incentive levels. While the program administrators should still review and approve each submission, the tool used to perform the calculations should be available to the contractor who is trying to sell the job. This would ensure transparency and equality among contractors in the program.

## Improved data collection and reporting methods

Changes are often implemented without any prior technical review process or vetting by the contractor base who have the most expertise completing the work in the program.

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Consultation with the vendor community regarding potential program changes would help reduce vendor frustration and confusion with new processes are implemented.

We should focus on process improvement measures which benefit the program and are crucial to long-term realized success. Contractors should be included in major program change discussion to leverage the free expertise and experience, and changes should have a vetting process before they are implemented into the program.

## Home Energy Solutions/Income Eligible Programs

## Budget Allocations

There may be flaws in the implementation of the 2018 HES-IE budgets for contractors. The allocations are not easily validated, and program administrators have not released the 2018 budget allocation tables. This lack of transparency has alarmed many vendors in the program. The energy efficiency board voted to add 1,000 HES-IE units to 2018, but there was no tracking of the allocation of the units. Additionally, the HES-IE RFP pricing bids have not been publicly listed, so there is no way to cross check the figures that led to the final HES-IE pricing structure.

We suggest publication of the 2017 and 2018 budget amounts by vendor (vendor name can be redacted), to show the difference in allocation to ensure fair and equitable distribution of funding in 2018 and 2019.

We also suggest that the Companies release the bids for the 2018 HES-IE RFP to allow transparency in the final pricing structure of the program. Contractor names do not need to be listed, only bid amounts per measure and the formula used to determine final pricing, especially for insulation and other capped pricing.

## CAP Budgets and Pricing

CRT was awarded an unknown HES-IE budget, from which they subcontract the actual work out to contractors who also had to RFP to qualify to receive work from the Energize CT program. These same contractors who are HES-IE approved then have to

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RFP again to work for CRT. Doing this has added an unnecessary layer of administrative work and expense to the program and has resulted in the HES-IE contractor performing the work and receiving even lower compensation for the same amount of work. Payments to vendors have been reduced by CRT. The reduction is significant in comparison to standard HES-IE pricing.

## HES-IE Budgets and Pricing

We would like to see a change in the HES-IE model. First, we believe that the process should be an RFQ rather than an RFP. This would allow any qualified contractor to participate in the program provided they agreed to the guidelines, participate in any required training or onboarding, and agree to accepting the pricing model. The RFQ should validate only qualified, licensed, trained, and certified companies. The contract should extend to 3 years, with a transparent and set pricing model that is fair and equitable to those participating in the program.

## Inspections

Inspections in the HES-IE programs are vital to the integrity of the industry. However, there is a need for more oversight of this process, specifically in regard to inspection rates across the vendors in the program. Inspections rates should be no lower than 5% of jobs, and no higher than 10% of jobs, per month. We also suggest that inspectors be required to complete QCI Quality Control Inspector and customer service/conflict resolution training as part of their qualifications. Their vehicles should be clearly marked for the sake of the customer, as well as identification badges clearly visible. Inspectors should be required to bring their own tools, ladders, PPE, and they should not interfere with the home visit. See QCI training at BPI.org

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## Upstream Rebates

The current system of upstream rebates removes a potential sales tool from the technician teams that operate in the programs. The ability to offer rebates to customers for energy efficient equipment upgrades while in the home would add perceived value to the programs from a customer perspective, increasing program participant satisfaction. In addition, directing potential consumers to HES/HES-IE in order to receive the rebate would increase participation in the program, further reducing overall demand and getting us closer to reaching our mandated goal of 80% weatherized by 2030. An increase in HES/HES-IE would also mean more comprehensive projects and more satisfaction among customers.

## Equal Access

We must ensure that, regardless of fuel type, social status, race, or ability to pay for the initial property energy usage assessment, that all customers have equal access to the program and all of the various levels of incentives. These incentives, such as windows and insulation, must be equal among fuel types and should be set at rates which encourage deeper energy efficiency measures which have a 1 to 1 ROI or better.

## Marketing

### Strategic Marketing

Marketing should be a collaborative effort between the vendors and the program administrators. This collaboration should focus on customer case studies forwarded by



the contractors to the utilities. These success stories would focus on comfort, safety, and savings. We also suggest that a portion of the marketing budget be allocated to outside organizations that help to

promote the programs through outreach and marketing. A contractor technical committee should participate in developing stories and messaging. This will reduce cost of development and streamlines messaging.

## Residential Single Family Program Improvements

Connecticut housing stock includes many older homes, which are not energy efficient. Unfortunately, much of this housing stock also contains health hazards such as vermiculite, ALM, mold, High CO, gas leaks, and older HVAC or DHW equipment which can become barriers to effective testing methods (blower door) and can also stop the effort to lower energy waste through installed building science-based weatherization.

Barriered homes require a two-step visit. This is currently completed in the HES and HES-IE program. When a technician locates a barrier, they note it and submit it to the program managers. There was a Healthy Homes pilot completed last year and many homes were remediated and then properly weatherized. Please see that Energize CT pilot.

We suggest that there be a two-part visit: This will allow the barriers to be identified and referred for mediation, baseline data collection gathering, and customer education. If no barriers exist, then light and water measures, air sealing, and lighting upgrades would occur. The second visit being for installation of deeper measures such as windows, insulation, HVAC, and other 1 to 1 approved measures.

The first part of the visit would be for data collection, and to meet the customer. Baseline data and technical data would be collected by a licensed BPI Home evaluator (who are trained in identifying barriers/health and safety). Proposals for upgrades would be created, incentives reviewed, and financing options would be explained. The second part of the visit would be the installation of accepted upgrades.

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This Two-Part visit system would ensure that we do not walk away from barriered homes. It would encourage collection of baseline data in every home we are scheduled to visit. It would also ensure the customer has the accurate and clear set of referrals and introduction to financing options to

help them customer reach the end goal of reducing energy waste in their home. Payment for data collection and data input as well as customer education, and referrals will streamline the process across contractors and encourage homeowners to complete the remediation and upgrade the property.

We suggest that air sealing be paid by the sq. ft which is easy to quantify and evaluate. Insulation should also be paid per sq. ft by change in R value. Setting clear and standard pricing makes QCI simple and payment as well as incentives less complicated.

## Retail Products

We suggest this budget be eliminated completely. By lowering the cost of LEDs at the big box stores we miss the opportunity to get into the home, assess health and safety, asses CAZ, and locate where the real energy savings can be found; we lose the chance to educate the customer/ ratepayer on behavior-based savings, and home upgrade opportunities or financing options and incentives. We would have a much deeper impact by installing the LED lights at the home during the baseline data collection process. Direct service jobs are better for the economy, generate local taxes, and keep jobs local.

## New Construction Subsidy

New contracting should be built to energy code. New construction is not a source of energy waste and therefore should not be counted as energy savings. It cannot reduce consumption on a property that has never had a bill or paid into the fund. This is an easy way to count energy savings which do not reduce our energy costs or our



energy waste. These should be built to energy code. New construction projects should not be subsidized by the ratepayer funds.

## Retrofits

A defined retrofit budget and program goal would encourage builders to upgrade energy efficiency when they are working to improve a property or home. Incentives should be set to ensure the builder or property owner are encouraged to improve energy waste in buildings which are being upgraded and have 1 to 1 minimum savings on the proposed upgrades.

## Additional Resources

## Green Bank on Low-Income Families

On page 5-6 of the Connecticut Green Bank Comprehensive Plan for Fiscal Years 2017 and 2018, the Green Bank recognizes the issues facing low-moderate income families and their revolving energy burden, as well as Connecticut's state-wide problem of aging, inefficient, potentially contaminated building stock.

> "Low to moderate income families in Connecticut are struggling to manage an energy burden, which includes variable expenses that reduce household income, and can strain families that are struggling to make ends meet. The aging residential buildings in Connecticut is leading to health and safety concerns such as asbestos, mold, lead, knob and tube wiring, and other adverse factors present a barrier to achieving our clean energy future for Connecticut buildings. In its efforts to mobilize more investment in clean energy, the Green Bank must ensure that clean energy is accessible and affordable to everyone, while at the same

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time coordinating with other stakeholders to ensure that sufficient portions of clean energy financing can ameliorate health and safety issues encountered during the process of clean energy installations."

To quantify these concerns, I will quote data from the report Home Energy Affordability in Connecticut: The Affordability Gap, 2016 prepared for Operation Fuel.

- 322,000 CT households fall below 200% of the Federal Poverty Level
- The average home energy affordability gap for these households is $1,241 per year. That is the difference between what they pay and what is considered to be "affordable". In aggregate this affordability gap totals $399 Million in Connecticut in 2016
- Nearly half a million low-income persons in Connecticut live in multi-family housing; 60% of this group live in buildings over 50 years old

The implementation of the HES/IE programs helps to address these issues. Specifically concerning the low-income population of Connecticut. HES-IE programs provide low-income customers with a zero-cost assessment of their housing and energy concerns.

- A detailed inspection of the property of potential health or safety concerns, including the presence of mold, ALM, lead, pests, knob and tube, or other existing problems that would pose risks to the inhabitants and prevent further energy measures.
- Air sealing of the housing unit/structure; installation of water-saving measures; installation of LED lighting upgrades
- Potential for low-cost insulation upgrades; low-cost window and mechanical upgrade programs
- This free program (HES-IE) helps reduce energy bills and creates healthier places to live.

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## Jobs - From the Green Bank Report 2016

It is clear from the Green Bank's vision and mission statements that one of the priorities of the Bank is to support job creation and economic prosperity. According to the Green Bank's own 2016 report, Clean Energy Jobs in Connecticut, the most efficient return on investment in clean energy jobs is that in the Energy Efficiency sector.

The report calculates estimated job-years created per investment of $1 million dollars of funding. According to the report, which was separated into two broad categories, Renewable Energy and Energy Efficiency, the jobs in the

- Energy Efficiency category averaged 4 additional job-years created (RE avg. 10.76, energy efficiency avg. 14.76).
- Job description within Energy Efficiency of Home Energy Services (HES) - Auditor returned the highest job-year creation, at 18 job-years per $1 million invested.
- Residential Solar PV Installation, which returned 9 job-years per $1 million invested.

It follows therefore, that the Green Bank should be encouraging the and supporting the Energy Efficiency industry as doing so seems to align with their mission and vision of providing jobs and economic prosperity to our local Connecticut economy.

## Connecticut Green Bank Goals

To achieve its vision and mission, the Green Bank lays out four goals; here are goals #3 and #4:

> "To develop and implement strategies that bring down the cost of clean energy in order to make it more accessible and affordable to customers"

*A key component to "bringing down the cost of clean energy" is not only the up-front cost but the return-on-investment (ROI). By using an energy efficiency audit for first assess a home and address potential problems, a process that has numerous benefits, among them a more energy efficient home, any additional "clean energy" investments*

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*made by the customer will have a higher ROI. A home that has undergone an energy efficiency audit will perform better than a similar home that has not; it is that simple. A more efficient home will make any equipment or renewable installation more efficient.*

> "To support affordable and healthy buildings in low-to moderate income and distressed communities by reducing the energy burden and addressing health and safety issues in their homes, businesses, and institutions"

*There is no better way to achieve the desired outcome of this goal than an energy efficiency audit. Through the HES-IE program, low-to moderate income families can lower their energy burden and address health and safety issues, at no cost. The HES-IE program is a proven method that helps achieve this goal and is funded by the Energy Efficiency Fund at no cost to the customer.*

## CT Statutes

Connecticut General Statutes Section 16-245m, as revised by Connecticut Public Act 13-298, requires that the state's Conservation and Load Management Plan include a "budget sufficient to fund all energy efficiency that is cost-effective or lower cost than acquisition of equivalent supply."

Since 2007, Connecticut law has directed the State to implement "all cost-effective energy efficiency." Connecticut General Statutes 16a-3a(c) requires that "resource needs shall first be met through all available energy efficiency and demand reduction resources that are cost- effective, reliable and feasible."

CT Gen Stat § 16-245m (2013)

> Paragraph D
>
> "Said (Conservation and Load Management Plan) plan shall include a detailed budget sufficient to fund all energy efficiency that is cost-effective or lower cost than acquisition of equivalent supply"

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"Said plan shall include steps that would be needed to achieve the goal of weatherization of eighty per cent of the state's residential units by 2030 (PA 11-80)."

"For a low-entry cost, Connecticut's residential customers now have access to a comprehensive energy-savings program whose message is clearly and effectively communicated and that delivers significant economic, environmental, health, and safety benefits." (2016-2018 C&LM Plan, 290-291)

## Energy Efficiency (HES) is cost-effective:

Eversource 2016 Residential Energy Efficiency Program Cost-Effectiveness

| Program | Test* | Benefits | Cost | Net | Ratio |
|---|---|---|---|---|---|
| Home Energy Solutions (HES) | TRC | $ 62,298,317 | $ 19,090,656 | $ 43,207,661 | 3.26 |
| | PACT | $ 17,138,430 | $ 9,467,560 | $ 7,670,870 | 1.81 |
| | M-PACT | $ 51,721,547 | $ 17,965,248 | $ 33,756,299 | 2.88 |

Companies' Position(s):

The Residential and C&I Subcommittees were established to work and review the above-referenced types of initiatives. The Companies hope that the majority of these topics could be discussed during the individual subcommittee meetings in 2019-2021. The Companies feel that these subcommittee meetings were designed as the vehicles to consider recommendations and discuss new solutions before bringing them forward to the entire Energy Efficiency Board.

Energy Efficiency Board Position:

The Energy Efficiency Board thanks Efficiency for All for its extensive and thoughtful comments. We note that not all of the comments fall within the Energy Efficiency Board's areas of responsibilities (e.g., how nuclear power is classified as an energy resource or the comments directed to the Connecticut Green Bank).

In response to other comments from Efficiency for All, the Energy Efficiency Board notes:

- Non-Energy Impacts ("NEIs"): We expect this issue to be more fully discussed and addressed as part of DEEP's ongoing effort to consider revisions to the cost-effectiveness framework employed in Connecticut. The Energy Efficiency Board will provide input to and participate in this process as appropriate.
- Multifamily Initiative: A significant amount of HES and HES-Income Eligible solution savings come from the multifamily sector. The Energy Efficiency Board agrees with some of the proposed suggestions, such as the development of a program manual and a tool to estimate incentives. The Energy Efficiency Board will continue to work with the Companies on the Multifamily Initiative components of the HES and HES-Income Eligible solutions to ensure that the initiative best meets the needs of building owners, occupants, contractors, and ratepayers.
- Single-Family Program Improvements: As the HES solution responds to the anticipated decline in lighting offerings and savings, alternative program participation pathways and implementation models (e.g., online audits) may need to be considered. The Energy Efficiency Board and the Companies will continue to monitor best practices in other states to ascertain whether and how the HES model should evolve.
- Limited and Moderate-Income Customers: Equitable funding of limited-income programs through the HES-Income Eligible solution have and will continue to be a key priority for the Energy Efficiency Board. For moderate-income customers, the Companies and the Energy Efficiency Board will continue to monitor HES moderate-income participation rates to ensure that it is equitably served. As required, the Companies will employ targeted marketing efforts to reach this program population.

- **Bundled Rebates/Renewable Integration:** Through a number of planned and proposed program activities, efficiency activities pursued as part of the 2019-2021 Plan will focus increasingly on systems and less on individual measures. Some of these efforts will also encourage renewable integration. These activities include: proposed HVAC measure bundles, the Zero Energy Home retrofit pilot, heat pump promotions through the HES solution to provide reductions in heating energy through higher efficiency, and the New Construction, Additions & Major Renovation solution's all-electric package.
- **New Construction Additions & Major Renovations Solution and Incentives for Consumer Products**: The Energy Efficiency Board does not agree with the recommendation to cease support for these efficiency activities. Support of retail lighting generates a large proportion of total CEEF residential electricity savings at a low cost to ratepayers. However, the Energy Efficiency Board expects that the appropriate level of support needed for retail lighting will be revisited in both the 2020 and 2021 Plan updates; informed by the extent of EISA 2020 implementation and the continued transformation of the residential lighting market. For the New Construction, Additions & Major Renovations solution, the Energy Efficiency Board notes that incentives are to attain construction practices that exceed both code and current construction practices. These incentives are not offered to promote code attainment. Additionally, engagement in the new construction market can influence builder and customer fuel choice to further reduce the GHG impacts of new homes.

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2) Leticia Colon

Representing: Efficiency for All

Date Input Received: 6/13/18

Input Method(s): Verbal comments

Requests/Comments:

Ms. Colon said that an important question the Energy Efficiency Board and the Companies should consider is whether the programs are spending ratepayer funds effectively. She said that HES contractors should be given sufficient opportunity to provide technical input into the 2019-2021 Plan. She said that a permanent seat should be added to the Energy Efficiency Board that is dedicated to an individual from the home performance contractor industry.

Companies' Position(s):

The Energy Efficiency Board and the Companies have established a Public Input Session process for stakeholders (i.e., HES contractors) to provide input in the planning of the 2019-2021 Plan. Additionally,

the monthly Residential Subcommittee and Energy Efficiency Board meetings are additional channels in which stakeholders (i.e., HES contractors) can submit their input. As established by state law and statute, the Companies are not able to alter or add seats to the Energy Efficiency Board. This responsibility lies with the Connecticut General Assembly.

Energy Efficiency Board Position:

The Energy Efficiency Board believes that the current public input process as well as the monthly Residential Subcommittee Meetings have provided interested parties with considerable opportunity to provide input on the 2019-2021 Plan.

The current makeup of the Energy Efficiency Board is determined legislatively.

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3) Leticia Colon

Representing: Energy Efficiencies Solutions

Date Input Received: 7/18/18

Input Method(s): Written comments

Requests/Comments:

1. **Put Efficiency First- Less of any fuel is Still less of that fuel source**

End the upstream rebates which completely miss the mark on comprehensive approaches ,safety, and overall opportunities for saving.

Stop subsidizing new construction that must be built to code and is tax deductible as business expense or is already being built and should not be subsidized by ratepayers.

Include "boots on the ground success stories" in marketing, education, and outreach to encourage deeper savings and understanding of the value of EE and demand reduction.

Educate consumers/ratepayers/ contractors on demand reduction and how it relates to the EE programs in our state.

Explain on the EnergizeCT.com website how reducing demand helps lower energy costs and avoid black out or brown outs.

Pay contractors equitably and ensure metrics track the installed measures and services, including baseline data collection and education, as well as direct EE installs and upgrades. This will ensure quality work and quality programs.

Ensure the programs serve and educate low income and minority populations which have been missed and were steadily underserved along with low income working families who also have not had as much uptake in the upgrades and deeper measures. This can be achieved through marketing achievable goals such as insulation which is affordable and saves money as well as makes families less sick and warmer, while lower school days missed.

Locate and include minority partners, activist, educators, and contractors who can help message the importance of EE and the ways to access EE to these under-represented groups are included.

Create bundled incentives for assessments, insulation, ductless heat pumps, and solar. This will have a deeper demand reduction outcome and strengthen the energy grid.

| | |
|---|---|
| CLM plan - focus on ROI- Efficiency first- Clean Energy Communities process or lack of, Marketing costs and ways to save and increase ROI, Consultant and studies costs to the program and ratepayers, Inspection costs which has doubled. | 1. Connect the Green Bank customers with HES and HESIE services as a requirement and these jobs should be rotated through the existing state EE programs and services.<br><br>2. Change the Solar requirement to a complete energy assessment and weatherization putting Efficiency first which reduces the cost of all energy and stops energy waste and energy pollution. This will save on marketing costs by cross marketing programs and increase our chances of hitting the goal of weatherization of 80% of homes as well as the goal of lowering carbon emissions statewide.<br>3. Request the cross marketing approach be used by all programs ex. Lighting programs should also talk about HES and HESIE at the paid events and outreach. (CO MARKET) Green Bank should co-market all programs etc.<br>4. Cost cutting should not be targeted at contractors who provide direct services to the customer/ ratepayer and should focus on other areas of waste such as marketing, studies, financing overhead, and bonuses to Program administrators which lead to conflicts of interest.<br>5. Savings can be attained by creating a streamlined programs, statewide collaborations between programs, as well as reduced study expenses, and reduced evaluation and inspection costs. |

Companies' Position(s):

The Residential and C&I Subcommittees were established to work and review the above-referenced types of initiatives. The Companies hope that the majority of these topics could be discussed during the individual subcommittee meetings in 2019-2021. The Companies feel that these subcommittee meetings were designed as the vehicles to consider recommendations and discuss new solutions before bringing them forward to the entire Energy Efficiency Board.

Energy Efficiency Board Position:

Ms. Colon provides considerable useful feedback and suggestions, much of which the Energy Efficiency Board supports. In reply, the Energy Efficiency Board notes:

- Demand response will become an increasingly visible part of CEEF efforts in the 2019-2021Plan, including a more noticeable presence on the Energize CT site.
- The Energy Efficiency Board has carefully considered the impact of all budget reductions, informed by a set of previously established Board Priorities for the CEEF Programs. These Priorities establish energy savings and retaining contractor delivery infrastructure as key CEEF goals and budget changes have been made accordingly.
- Recent program marketing has been highlighting successful project case studies.
- Equitable funding of limited-income programs through the HES-Income Eligible solution has and will continue to be a key priority for the Energy Efficiency Board. For moderate-income customers, the Companies and the Energy Efficiency Board will continue to monitor HES moderate income participation rates to ensure that it is equitably served. As required, the Companies will employ targeted marketing efforts to reach this program population.
- Regarding the New Construction, Additions & Major Renovations solution, the Energy Efficiency Board notes that incentives are to attain construction practices that exceed both code and current construction practices. These incentives are not offered to promote code attainment. Additionally, engagement in the new construction market can influence builder and customer fuel choice to further reduce the GHG impacts of new homes.
- Through a number of planned and proposed program activities, efficiency activities pursued as part of the 2019-2021 Plan will focus increasingly on systems and less on individual measures. Some of these efforts will also encourage renewable integration. These activities include proposed HVAC measure bundles, the Zero Energy Home retrofit pilot, heat pump promotions through HES to provide reductions in heating energy through higher efficiency, and the New Construction, Additions & Major Renovation solution's all-electric package.

- Upstream HVAC and DHW equipment incentives have significantly increased program participation and savings. For the 2019-2021 Plan, the Energy Efficiency Board and the Companies are exploring ways to more fully address efficient systems, not just efficient equipment. Additionally, planned heat pump promotional efforts in the latter half of 2019 will leverage HES vendor engagement with program participants.

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### 4) Guy West

Representing: CT Energy Network/Clean Water Fund

Date Input Received: 6/13/18 and 7/31/18

Input Method(s): Verbal and written comments

Requests/Comments:

Mr. West said that his comments were prepared by members of CT's Clean Energy Task Forces and similar bodies appointed by local governments. These local organizations have been supported by Clean Water Fund for more than five years.

Given the harmful C&LM budget cuts, the Energy Efficiency Board should work with the legislature on strategies to make the C&LM funds raid-proof in the future.

The 2019-2021 Plan should include a budget line for an on-going public education program with a large grassroots component (to help make up for the large budget cuts in marketing and outreach). The program should be designed to work through the media and community-based channels such as neighborhood and faith-based organizations, schools, and the Clean Energy Task Forces. The public education program should go beyond promoting HES and HES-IE and focus on energy efficiency literacy and word-of-mouth referrals to the programs.

The legislature should create two additional seats on the Energy Efficiency Board: one representing the energy efficiency industry, and one representing CT's Clean Energy Task Forces. The Energy Efficiency Board should support legislative efforts to add these two seats.

The Energy Efficiency Board meeting agendas should include public input at the beginning and end of each meeting.

The state of CT should adopt the Resource Value Framework for energy efficiency cost-effectiveness put forth in the *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources.* CT's cost-effectiveness framework should:

- Reduce the discount rate applied in testing, effectively capturing more of the long term benefits of insulation, heat pumps and other efficiency improvements;
- Capture more co-benefits such as indoor air quality improvements;
- Make cost effectiveness testing procedures more transparent; and
- Tie cost-effectiveness testing more closely to the goals of important policies such as the Global Warming Solutions Act.

Companies' Position(s):

The Companies support the CT Energy Network/Clean Water Fund's recommendation that the work should be done with the legislature regarding strategies to make the C&LM funds raid-proof in the future.

The 2019-2021 Plan (budget line items and text) detail the Companies' plans for increasing their commitment to providing education and outreach resources to Connecticut communities, such as: higher education outreach and trainings, the redirection of EnergizeCT Center resources to support local museum and community initiatives instead, enhanced K-12 energy education initiatives, and increased budgets and resources for the Companies' Customer Engagement Platforms. Eversource's Customer Engagement Platform provides an "Energy Savings Plan" for residential and C&I customers and an "Energy Analysis Tool" for Large Enterprise customers.

The Companies will continue to serve as the engagement channels to communities in their service territories to promote energy efficiency and will provide training on heat pump technologies to contractors. The Companies will host an annual Community Forum where communities can share best practices, learn about new energy-efficient technologies and Energy Efficiency Fund programs, and hear about sustainable efforts.

For the 2019-2021 Plan, the Companies will provide resources to providing municipality support for benchmarking and data analysis for Connecticut's towns and cities. These efforts will support the Sustainable Connecticut initiative. Additionally, through the Workforce Development initiative, the Companies will encourage communities to participate in the EPA's online webinars regarding how to utilize its Portfolio Manager software, and to participate in other Workforce Development trainings referenced in Chapter Four. The Companies will continue to implement their Workforce Development initiative during the 2019-2021 Plan, and provide trainings through community colleges, technical high schools, and to Connecticut's robust energy efficiency workforce.

During the 2019-2021 Plan, the Companies are focused on increasing their K-12 energy education outreach, especially to limited-income communities. The Companies will work with the Capitol Region Education Council to deliver high-quality professional development workshops to K-12 educators. In

2019, the Companies will re-initiate the annual *eesmarts* Student Contest for Grade K-12 and university students. Additionally, the Companies are currently reviewing several competitive RFP responses regarding K-12 energy education presentations, performances, and interactive assemblies for the 2019-2021 Plan. The target market for these presentations will be underserved communities, particularly limited-income and hard-to-reach markets.

The Companies' current primary testing methodologies are not permitted to account for some of the public benefits of energy-efficient technologies, including water savings, non-embedded GHG emissions, and improved air quality. During the 2019-2021 Plan, the Companies will work collaboratively with DEEP and the Energy Efficiency Board on the development of a Resource Value Test to align their benefit-cost testing with the strategies outlined in the 2018 CES. The Resource Value Test may provide alternative methodologies to screen energy-efficient measures that offer both energy savings and have environmental attributes (i.e., reductions in GHG emissions), such as high-efficiency heat pumps. The proposed revisions to the benefit-cost test will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP.

The Companies will look to work with the parties above to promote energy efficiency to Connecticut residents, businesses, and municipalities.

Energy Efficiency Board Position:

First, the Energy Efficiency Board would like to acknowledge and thank all of the individuals working to promote efficiency at the town and city level, including city/town energy managers and all of those working on city/town energy task forces. In reply to Clean Water Action's recommendations, the Energy Efficiency Board notes:

- Recent legislative actions on energy efficiency procurement (Public Act 18-50) should make the Energy Efficiency Funds a less likely target for future budget diversions.
- Board meeting agendas currently do provide for public comments at the beginning and the end of the meetings.
- Current and proposed C&LM budgets include these specific line items: *Educate the Public, Educate the Students,* and *Educate the Workforce*. The Companies' responses above speak more specifically to 2019-2021 activities.
- The ongoing process led by DEEP to consider a revised cost-effectiveness framework should address Mr. West's recommendations regarding the National Standards Practice Manual. The Energy Efficiency Board will provide input into this process as warranted. Note also that the updated avoided costs used to determine the benefits of energy efficiency do now included a GHG reduction value included in the energy value from the most recent avoided cost study

(AESC 2018), and the Companies and Energy Efficiency Board will explore whether to include an additional avoided cost of GWSA compliance during 2019.

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### 5) Peter Millman

Representing: People's Action for Clean Energy (PACE)

Date Input Received: 6/13/18

Input Method(s): Verbal and written comments (PowerPoint presentation)

Requests/Comments:

PACE is a non-profit organization that partners with Eastern CT Green Action, Clean Water Action, and the Sierra Club on the 100PercentCT project.

The 100PercentCT project is an effort to produce replicable plans for all CT towns to transition to 100% renewable energy by 2050. The project encourages energy benchmarking for all towns (and all sectors in the towns), investments in renewable energy, design of microgrids, and engaging with utilities to test the "utility of the future."

Recommendations for the Energy Efficiency Board include:

- Enhance the EnergizeCT website to make it a more effective tool for education, outreach, and action
- Expand the CT Zero Energy Challenge to existing buildings
- Make strategic alliances with local energy groups
- Enhance the EnergizeCT website's coverage of heat pumps (an example is Efficiency Maine's website)
- More impact can be achieved through energy reductions in existing buildings than in new construction. The CT Zero Energy Challenge should be broadened to include a Deep Energy Retrofit Category.
- Given budget cuts, the Program Administrators should work with PACE, Eastern CT Green Action, Clean Water Action, the Sierra Club, and the state Clean Energy Task Forces as a replacement for outreach efforts.

Companies' Position(s):

During the 2019-2021 Plan, the EnergizeCT.com website will undergo an upgrade to its content management platform (Drupal) which will offer more than 200 new features and require a total overhaul of the existing site. Due to limited budgets in 2019, the Companies will focus 2019 web activities on preparing for the platform upgrade and will implement and launch major design changes in 2020 and beyond. These enhancements will make the EnergizeCT.com website an effective tool to disseminate energy efficiency education and outreach.

For the 2019-2021 Plan, the Companies will investigate adding two additional categories to increase participation in the Zero Energy Challenge (administered through the New Construction, Additions & Major Renovations solution), including: (1) a category for multifamily buildings that build to Passive House design principles and (2) a category for gut rehab or major renovations.

The Companies will continue to serve as the engagement channels to communities in their service territories to promote energy efficiency and will provide training on heat pump technologies to contractors. The Companies will host an annual Community Forum where communities can share best practices, learn about new energy-efficient technologies and Energy Efficiency Fund programs, and hear about sustainable efforts. For the 2019-2021 Plan, the Companies will provide resources to providing municipality support for benchmarking and data analysis for Connecticut's towns and cities. Additionally, through the Workforce Development initiative, the Companies will encourage communities to participate in the EPA's online webinars regarding how to utilize its Portfolio Manager software, and to participate in other Workforce Development trainings referenced in Chapter Four.

The Companies will look to work with the parties above to promote energy efficiency to Connecticut residents, businesses, and municipalities.

Energy Efficiency Board Position:

In reply to the recommendation from PACE, the Energy Efficiency Board notes:

- The Companies, with the Energy Efficiency Board's input, had developed a Zero Energy Home retrofit pilot that would promote deep energy retrofits, heat pumps, and renewable integration. The legislative budget diversion temporarily put this effort on hold' however, it has been reinstated for the 2019-2021 Plan and the Energy Efficiency Board looks forward to its implementation and, potentially, the development of a broader offering.
- Heat pumps will become an increasing focus of Connecticut Energy Efficiency Fund efforts. In 2019, the Companies will implement an all-electric home residential new construction package. For existing homes, the Companies will implement an enhanced program offering targeted at installing heat pumps to provide reductions in heating energy through higher efficiency.

- The Companies' well-established community outreach efforts have worked closely with local energy task forces since 2012. The Energy Efficiency Board looks forward to continuing and strengthening this relationship between energy efficiency programs and task forces, and encourages the submission of specific proposals from cities, towns, clean energy task forces, and other community organizations.

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### 6) Lorenzo Wyatt

Representing: Home Comfort Practice

Date Input Received: 6/13/18

Input Method(s): Verbal comments

Requests/Comments:

Since lighting will be phasing out of the residential programs, there will be a large gap in savings that will need to be filled.

Some changes should be made to the residential programs to make them more similar to those in Rhode Island and Massachusetts.

The programs should evolve away from their current emphasis on core services and evolve toward more of a diagnostic and educational model. The EnergizeCT website should become more of a customer portal, which would empower ratepayers to select home performance contractors and financing products. Home performance contractors could be selected by customers based on several criteria, including past performance and customer satisfaction scores.

Companies' Position(s):

As retail lighting savings diminish due to the implementation of EISA, the Companies recognize the immediate need for them to establish strong, energy efficiency solutions that are non-reliant on lighting measures to generate savings for the 2020 and 2021 Residential Energy Efficiency Portfolios. For the 2019-2021 Plan, the Companies will integrate unique energy-efficient HVAC solutions, connected devices, online retail platforms, active demand reduction strategies, and home performance services into their Residential Energy Efficiency Portfolio to help drive energy savings and reduce GHG emissions. For the 2020 and 2021 program years, the Companies and home performance contractors may need to alter the delivery model for home performance services to maximize duct sealing, air sealing, and insulation uptake.

During the 2019-2021 Plan, the Companies plan to expand the marketing and adoption of their Customer Engagement Platforms. These online platforms help customers identify ways to save energy and provide tools for self-services.

Energy Efficiency Board Position:

The Energy Efficiency Board thanks Mr. Wyatt for his suggestions. The Companies and the Energy Efficiency Board have historically reviewed best practices in other states and will continue to do so throughout the 2019-2021 Plan. The use of customer portals and enhanced customer engagement practices are an area of particular interest. With the decline and expected loss of lighting as an HES measure by the end of the 2019-2021 Plan period, alternative program pathways for customer participation will need to be considered. While increased conversions of follow-on measures have always been an Energy Efficiency Board priority for HES, significant energy savings will continue to be delivered by core services through air and duct sealing, even in the absence of lighting savings. The Energy Efficiency Board will want to ensure that these savings are not lost if alternative HES participation pathways are developed and pursued.

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### 7) Amanda De Vito Trinsey

Representing: Connecticut Industrial Energy Consumers (CIEC)

Date Input Received: 7/31/18

Input Method(s): Written comments

Requests/Comments:

CIEC has continued concerns regarding the way in which large high-load factor customers are accounted for in the development of energy efficiency programs as well as the method by which C&LM funding is collected.

Currently, energy efficiency funds are collected from customers on a per kilowatt-hour basis. This fails to recognize that in addition to the conservation of energy, a major focus of energy efficiency is to reduce demand, including but not limited to peak demand. The current mechanism by which C&LM programs are funded by customers is inequitable to C&I customers and results in large end users funding a majority of the energy efficiency program budget without receiving a proportional level of benefits. Funding for C&I energy efficiency programs should be collected from C&I customers, at least in part, on the basis of demand, instead of solely on a volumetric basis.

The C&LM Plan should provide additional opportunities to C&I customers to invest in equipment replacements, either through modified incentive structures or a self-directed option that provides large

load-factor customers with some autonomy in planning their facilities and investments. Incentives for new manufacturing equipment should be based on the energy reductions available using a customer's presently existing equipment as the baseline and comparing that to new high efficiency equipment. This will allow a greater portion of the unit replacement to be incentivized.

Large C&I customers should be able to pursue a self-directed option, by which such customers would have some autonomy in deciding how their allocated funds should be spent.

Companies' Position(s):

As established by state law and statute, the Companies are not able to alter the current energy efficiency funding mechanisms for the Connecticut Energy Efficiency Fund. This responsibility lies with the Connecticut General Assembly.

In the 2019-2021 Plan, the Companies will implement an early retirement program (as part of the EO solution) to encourage C&I customers to replace large equipment in advance of end-of-life to hasten equipment replacement in 21st century manufacturing facilities and state buildings, and large industrials. The Companies will work with potential customers to determine whether equipment replacement (early retirement and/or post-useful life) will benefit the electric and natural gas distribution systems (savings and demand savings) by first taking into consideration the actual total savings (based on total change in usage) of the new equipment versus existing conditions for the first five years of equipment replacement (more savings than current practice), then considering savings for the remaining useful life of the new equipment as compared to code or industry standard practice (current practice). This new approach provides both additional savings to the electric and natural gas systems and additional incentives to the customer to make the investment in early retirement and/or post-useful life replacement.

Additionally, for the 2019-2021 Plan, the Companies will launch a CSP/SEM Demonstration project (as part of the Business and Energy Sustainability solution) that will allow the Companies to pay incentives and claim savings from operational and behavioral changes.

The Companies have allocated approximately $250 million toward large C&I Energy Efficiency Portfolio budgets for the 2019-2021 Plan. Within these budgets, the Companies have allocated approximately $4.5 million over the three-year plan that will be targeted to cover early retirement of equipment (includes post- useful life replacement) in certain market sectors and for Customized Solution Partnerships/Strategic Energy Management Demonstrations.

Energy Efficiency Board Position:

The mechanism that determines how efficiency funds are collected from customers is determined through the Connecticut legislature by means of law. The Energy Efficiency Board and the Companies do not have control over the collection mechanism.

The Energy Efficiency Board agrees that incentives for new manufacturing equipment should be based on the savings. The correct baseline for manufacturing equipment is dependent on if there is an applicable code or industry standard practice ("ISP") that establishes a minimum efficiency threshold. However, the Energy Efficiency Board also endorses the increased use of Strategic Energy Management, which would provide more opportunities for optimizing energy use and claiming savings from operational and behavioral changes, which are not subject to code or ISP. The 2019-2021 Plan allows for analyzing savings at the whole building or whole facility level. The 2019-2021 Plan also includes an early retirement/post-useful life offering to structure incentives to hasten equipment replacement in 21st century manufacturing facilities and state buildings, and large industrials.

The Energy Efficiency Board does not recommend a self-direct option based on observed experience of a pilot in Massachusetts. Companies in Massachusetts who were provided a self-direct option did not complete as many projects or realize as much savings on average as companies who participated in the regular programs. Some companies did no projects at all. Feedback from the self-directed companies indicated that there was value in the technical help provided by the programs that identified opportunities and facilitated projects, so the pilot self-direct option was terminated.

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8) Mark Thomson

Representing: ThinkEco

Date Input Received: 6/13/18

Input Method(s): Written comments

Requests/Comments:

Under the 2016-2018 C&LM Plan, ThinkEco is a direct vendor to Avangrid, managing the United Illuminating's Smart A/C program. For Eversource's SmartPREP program, ThinkEco is a subcontractor to Autogrid.

ThinkEco recommends that the Smart A/C and SmartPREP pilot programs should be continued, and that funding for these programs should be increased to engage more customers. The United Illuminating program was fully subscribed in less than 3 weeks, and customer satisfaction with the program has been

high. In 2017, NY State ordered that a similar pilot program in NY be changed to a full permanent program, and the program there was doubled in size in 2018.

ThinkEco is working with many of its utility clients to add controllable appliances (beyond only window A/C units) to the list of opportunities provided to customers for energy savings. Original equipment manufacturers such as Frigidaire, Friedrich, and LG are making their appliances Wi-Fi enabled, increasing opportunities for demand reduction from household appliances.

Companies' Position(s):

In 2019, the Companies will finalize their evaluations of 2016-2018 residential demand response pilot offerings, including those that featured smart plugs with room air conditioner units and dehumidifiers. From these evaluation results, the Companies will determine which appliance offerings are the most cost-effective.

Energy Efficiency Board Position:

Implementing demand response efforts is a principal focus of the 2019-2021 Plan. The Energy Efficiency Board has strongly communicated its expectations that the Companies move forward from pilot phase efforts to broader program offerings, subject to cost-effectiveness considerations. The Energy Efficiency Board is also aware that low income and multifamily customers have often been under-represented in demand response efforts and will work with the Companies on this issue. Further, the growth of connected products in the marketplace and in homes also represent an opportunity for demand response efforts. The Energy Efficiency Board has and will engage the Companies on whether and how these products should be promoted within the HVAC, New Construction, Additions & Major Renovations, HES, HES-Income Eligible, and Consumer Products solutions. As an example, the Companies will be developing a Smart Home offering as part of their New Construction, Additions & Major Renovations solution.

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### 9) Joel Rinebold

Representing: CT Center for Advanced Technology, Inc. (CCAT)

Date Input Received: 7/23/18

Input Method(s): Written comments

Requests/Comments:

The Office of Energy Efficient Businesses (OEEB), established by Public Act 11-80, Sec. 119, provided outreach for energy efficiency services to small businesses in underserved areas in CT cities and towns.

The OEEB identified and quantified savings, and it referred small businesses to energy efficiency providers. The OEEB was administered by CCAT from 2013 to 2017.

CCAT recommends that the 2019-2021 Plan include funding for targeted outreach by OEEB to underserved small businesses in CT communities. The businesses typically have 5 or fewer employees and are in low-income rural areas. The 2019-2021 Plan should include resources to ensure that non-English speaking businesses have access to information on energy efficiency services. This recommendation is consistent with Public Act 11-80, Sec. 119, and is also consistent with recommendations in the 2016-2018 Plan's section on the Small Business Energy Advantage program.

Companies' Position(s):

The Companies agree that outreach is imperative to drive energy efficiency to small businesses, especially those located in limited-income and rural areas. For the 2019-2021 Plan, the Companies have allocated funding within the SBEA program to conduct outreach efforts to small businesses across the state.

Energy Efficiency Board Position:

The Energy Efficiency Board agrees that outreach is important to small businesses, including small businesses in low-income and rural areas. It is also important to reach non-English speaking businesses. The Energy Efficiency Board supports funding within the SBEA solution to conduct outreach efforts to small businesses across the state.

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10) Samantha Caputo

Representing: Northeast Energy Efficiency Partnerships

Date Input Received: 8/01/18

Input Method(s): Written comments

Requests/Comments:

Building Sector Decarbonization with Efficiency and Strategic Electrification

There is an important opportunity for the 2019-2021 Plan to play a key role in helping to achieve the greenhouse gas (GHG) reduction goals of the state, per the Global Warming Solutions Act. Achieving the state's GHG reduction goals requires significant reductions in GHG emissions associated with building use of direct fossil fuels (oil, propane, natural gas) for space and water heating. The 2019-2021 Plan should set goals and targets for both thermal efficiency (i.e., improved efficiency and energy

performance in building and home envelopes through insulation and air sealing) and electrification (deployment of heat pumps) in residential and commercial buildings.

Buildings as Grid Assets with Efficiency and Demand Response

Thermally efficient buildings coupled with demand response (e.g., via smart thermostats or other direct load control technologies) can meet customer needs for heating and cooling while also providing grid flexibility to reduce peak energy use and improve overall transmission and distribution system capacity factors. The Energy Efficiency Board and DEEP should consider strategies to help bring this forward in the development of the 2019-2021 Plan.

Electric and Natural Gas Energy Efficiency Resource Standards

The state's current commitment to incremental savings of 1.51% of retail electric sales and 0.6% for retail natural gas sales in the 2016-2018 Plan trails behind most of the neighboring states' savings goals. The state may benefit from increasing its savings goals to be more on par with surrounding states (in 2016 MA achieved 3% electric savings, VT achieved 2.52% electric savings, and RI achieved 2.85% electric savings). In the 2019-2021 Plan, the Energy Efficiency Board should consider electric savings targets of 2% and natural gas savings targets of over 1%.

Renewable Thermal Technologies

The Energy Efficiency Board should consider goals for the increased adoption of renewable thermal technologies (e.g., high-performance cold climate air source heat pumps) in the 2019-2021 Plan, especially since the scope of the 2018 Integrated Resource Plan includes the development of a thermal efficiency standard. NEEP's 2016 ASHP Market Transformation Strategies Report includes a series of strategies to accelerate uptake of renewable thermal technologies; the Energy Efficiency Board should consider incorporating these strategies into the 2019-2021 Plan. Another opportunity is establishing statewide systems that require utilities to support the installation and operation of renewable thermal technologies. Connecticut can learn from best practices in Massachusetts.

Home Energy Solutions Program

To drive home energy retrofits, the market value of energy efficiency needs to be made visible and accounted for in real estate transactions. Workforce development should be a priority for the 2019-2021 Plan, in particular developing training and educational campaigns for assessors and homeowners about the value of energy efficiency. Adding workforce development to the HES program would be consistent with the Comprehensive Energy Strategy recommendation to integrate energy efficiency with real estate market forces.

Building Codes and Appliance Standards

The Energy Efficiency Board should consider code compliance for the 2019-2021 Plan and should consider establishing attribution for code compliance so that utilities can claim savings. Connecticut can learn from the attribution methodology chosen by National Grid in MA and RI for the CCEI Attribution program. Many Northeast states, including MA, RI, and NY are considering new appliance standards for a range of products, particularly those identified in a 2017 report from the Appliance Standards Awareness Project. Since DEEP has been legislatively authorized to adopt appliance standards, DEEP should move quickly to set and promulgate product standards and should work with the Energy Efficiency Board to do so. The 2019-2021 Plan could include the opportunity for Connecticut utilities to receive credit for energy savings associated with state appliance standards supported by the research, analysis, and implementation assistance.

Cost-Effectiveness

Connecticut may benefit from adopting the principles in the National Standards Practice Manual (particularly transparency and symmetry) when evaluating energy efficiency and other demand-side programs. NEEP encourages the state to develop a roadmap, informed by stakeholder input, to move beyond the current utility cost test framework to better align demand-side resource economic analysis with relevant public policy goals addressed by these resources (e.g., air pollution and carbon emissions, economic development, occupant health and safety, and energy resiliency) and to include all costs and associated benefits, including participant and societal benefits.

Companies' Position(s):

During 2019, the Companies plan to explore and pilot an outreach and incentive strategy to strategically increase the adoption of cost-effective, low-carbon heating technologies in Connecticut's residential and C&I buildings to reduce GHG emissions while saving money for customers. This strategy would align the 2019-2021 Plan directly with the 2018 CES, which notes that the "decarbonization of thermal systems is necessary" for the state to progress toward meeting the Global Warming Solutions Act's goals of GHG emissions reductions and to improve air quality. In 2019 the Companies will explore cost-effective low-carbon heating technologies (e.g., water and air-source heat pumps, and heat pump water heaters) through targeted incentives, customer education, and contractor outreach and trainings. Future efforts regarding low-carbon heating technologies will be considered during the 2020 and 2021 Plan Update planning processes, and any such efforts will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP. The Energy Efficiency Board plans to review and assess the 2019 pilot results in September 2019, in time for the 2020 Plan Update, and the Energy Efficiency Board will review an independent evaluation of the results of the 2019 pilot and any 2020 efforts in the third quarter of 2020.

The Companies plan to work collaboratively with DEEP and the Energy Efficiency Board on the development of a Resource Value Test to align their benefit-cost testing with the strategies outlined in the 2018 CES during the 2019-2021 Plan period. The Resource Value Test may provide alternative methodologies to screen cost-effective energy-efficient measures that offer both energy savings and have environmental attributes (i.e., reductions in GHG emissions), such as high-efficiency heat pumps. The proposed revisions to the benefit-cost test will be considered during the 2020 and 2021 Plan Update planning processes, and any changes will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP. The Companies will build any newly-adopted methodologies into their planning models for the 2020 and 2021 program years.

Additionally, the Companies update their energy savings models based on current code compliance standards. During the 2019-2021 Plan, the Companies plan to work with DEEP and the Energy Efficiency Board's consultants to look for opportunities to claim savings from changes in code.

Initially, in 2019, the Companies will evaluate the effectiveness of their 2016-2018 demand reduction projects for both the Residential and C&I Energy Efficiency Portfolios. For the 2019-2021 Plan, the Companies plan to continue to promote demand response programs and expand demand reduction strategies and projects in C&I and Residential marketplace applications throughout the state. These efforts will start in 2019 and carry through the program years 2020 and 2021.

As the Companies move forward to explore and pursue decarbonization through electrification, the use as a percent of sales as a measure of effectiveness may no longer be appropriate. Due to the decrease in lighting savings due to the implementation of EISA, the Companies will look toward other metrics to verify and validate the benefits of electric and natural gas energy efficiency measures, including: energy indices, MMBtu savings, energy utilization, and energy per capita.

To ensure continued high-quality program delivery, the Companies regularly provide specialized trainings for the home performance contractor network throughout the 2019-2021 Plan. This may include but is not limited to: DOE Home Energy Score, Advanced Duct Sealing, and energy efficiency sales trainings. The Companies are committed to training home energy performance contractors on the benefits of heat pumps and how to best identify homes that could benefit from the installation of heat pump technologies. The Companies see these trainings as imperative to the increased adoption of heat pump technologies by residential single-family and multifamily homeowners. The Companies will continue to implement their Workforce Development initiative during the 2019-2021 Plan, and provide trainings to community colleges, technical high schools, and Connecticut's robust energy efficiency workforce.

The Companies' HES solution offers the DOE Home Energy Score to move the real estate marketplace (homeowners) toward valuing homes that are energy efficient and that have received HES services. The

Companies plan to continue promoting the value of the HES solution (e.g., energy, water, and GHG emissions reductions, etc.) to drive market demand in 2019-2021.

Energy Efficiency Board Position:

First, the Energy Efficiency Board wishes to thank NEEP for its thoughtful input into the 2019-2021 Plan process, as well as more broadly acknowledging the important work it does in the region.

In response to NEEP's recommendations and suggestions, the Board notes:

- The ongoing process led by DEEP to consider a revised cost-effectiveness framework for Connecticut addresses NEEP's suggestion regarding the National Standards Practice Manual. The Energy Efficiency Board will provide input into this process as warranted.
- The Energy Efficiency Board supports the important and growing role that clean electric technologies will play in the 2019-2021 Plan. Heat pumps will become an increasing focus of CEEF Residential Energy Efficiency Solutions efforts in both new and existing homes. In 2019, the Companies will implement an all-electric home residential new construction package. For existing homes, the Companies will implement a pilot offering targeted at installing heat pumps to provide reductions in heating energy through higher efficiency. This latter effort, which may initially be limited in scope, will be offered in the latter half of 2019. Specific goals for these efforts in 2020 and 2021 will be considered during subsequent Plan updates, with prior review by the Energy Efficiency Board.
- Implementing demand response efforts is a principal focus of the 2019-2021 Plan. The Energy Efficiency Board has strongly communicated its expectations that the Companies move forward from pilot phase efforts to broader program offerings, subject to cost-effectiveness considerations. These efforts are expected to leverage the growth of smart thermostats as well as connected appliances and HVAC/DHW equipment. The Energy Efficiency Board has and will engage the Companies on whether and how these products should be promoted within the HVAC, New Construction, Additions & Major Renovations, HES, HES-Income Eligible, and Consumer Products solutions. As an example, the Companies will be developing a Smart Home offering as part of their New Construction, Additions & Major Renovations solution.
- Currently, the Companies provide energy code training as part of their new construction program efforts. The Energy Efficiency Board looks forward to reviewing the statewide construction best practices field study report cited in NEEP's comments. This study, as well as input from DEEP and others, will inform discussions regarding the possible implementation of a code savings attribution model in Connecticut.

# APPENDIX E: COMPLIANCE ORDERS

## E.1 2016-2018 COMPLIANCE ORDERS

### From the Final DEEP 2016-2018 Plan Decision

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 1 | District Heating Loops | The Companies shall submit to DEEP's Bureau of Energy and Technology Policy ("BETP") for DEEP's records, the status of implementation of the new statutory authorization that allows energy savings resulting from connection to district heating loops that use waste heat to be eligible for incentives. The funding of such incentives is incremental to the Conservation and Load Management budget, pursuant to Section 242 of Public Act 15-5 (June Special Session). The Companies describe on page 400 of the Plan how they intend to implement this provision. The report would be used to educate others and inform action in this sector. | 09/01/16 | Filed 09/01/16<br><br>Item Completed |
| 2 | Demand Response | The Companies shall submit to BETP for DEEP's review and approval a report that documents progress developing implementation strategies to advance the deployment of Demand Response technology, particularly in the Commercial and Industrial sector, including a timeline for action. DEEP is pleased to see that Demand Response pilots are included in the Plan, with specific plans noted for the residential sector, and a note that a pilot will occur for the Commercial and Industrial sector. DEEP is interested in an increased focus on the Commercial and Industrial sector.<br><br>Such report on the status of demand response shall identify the locational and durational nature of demand issues and identifying opportunities that are related to geography and peak demand. Such report will help inform state planning and design of future actions, regardless of the outcome of current pending litigation on certain demand reduction programs. The Companies shall provide recommendations on the timeline for developing permanent programs and on the funding mechanism for such programs.<br><br>These recommendations will be especially important in the Commercial and Industrial Sector if regional independent system operator demand response programs are not supported by court decisions. | 07/01/18 | Initial report separately filed 04/01/16<br><br>Chapter 3 of the 2017 Plan Update<br><br>Item Complete as per DEEP's 2018 Condition of Approval #2 |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 2 | Demand Response (Continued) | Additionally, such report shall include a summary of the state of Time Varying Rates or Time-of-Use Rates in Connecticut. Such report shall include a summary of all customer participation and<br><br>the energy savings associated with Time Varying Rates or Time-of-Use Rates in each electric utility's service territory; the potential to achieve additional cost-effective energy savings through optimization of Time Varying Rates or Time-of-Use Rates and other regulatory and incentive mechanisms in Connecticut. The Companies should include implementation recommendations for integrating information about Time Varying Rates or Time-of-Use Rates with the customer engagement platforms to better allow customers to receive economic signals and to encourage greater participation in the United Illuminating territory.<br><br>Such report shall include an update on Eversource's progress in deploying advanced metering systems consistent with CGS 16-243w and provide an update on efforts to provide two-way communication using equipment other than meters to increase the ability of customers to participate in Time- of-Use Rates and demand response programs. For the 2016 report, United Illuminating shall describe how they are encouraging participation and use of Time Varying Rates currently and how they will develop a plan for implementing critical peak pricing and additional dynamic pricing options. In 2017, United Illuminating shall summarize the effectiveness of Time Varying Rates or Time-of-Use Rates and any new dynamic pricing structures in United Illuminating territory. In 2018, Eversource shall assess how Eversource can apply the results of the information provided by United Illuminating to enable customers to use Time Varying Rates or Time-of-Use Rates and other dynamic pricing options. | | |
| 3 | Street Lighting | The Companies shall submit to BETP for DEEP's records a report that summarizes the state of street lighting in Connecticut. Specifically, the Companies shall provide best estimates of the numbers of street lighting fixtures owned by the utilities, municipalities, and the State of Connecticut. To the extent such information is available to the Companies, the report shall quantify how many street lights in each category have been upgraded to LED technology and/or with advanced lighting controls. The Companies will provide recommendations on the timeline for upgrading street lights in each of these categories, and the recommended funding mechanism for such upgrades. | 09/01/16 | Filed 08/09/16 (Eversource) Filed 09/01/16 (United Illuminating)<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 4 | Comprehensive Coordinated Plan for Public Education and the Education of Students | DEEP does not concur with the Board's response to DEEP's question which noted that the Board "does not feel an additional 'overall plan for education in the future' is needed at this time" (*Energy Efficiency Board Responses to DEEP Requests for Information*, November 16, 2015).<br><br>DEEP only approves the "Educate the Public" and "Educate the Students" portions of the budget for the first three quarters of calendar year 2016. The remainder of 2016 and years 2017 and 2018 are not approved and a proposed budget shall be provided in the 2017 Annual Update, not to exceed the currently proposed 2017 and 2018 budget levels, that is reflective of planning conducted through the following process:<br><br>In the first half of calendar year 2016, the Companies, in consultation with the Board and DEEP, shall initiate a discernment process to clarify the roles and responsibilities of the Connecticut Energy Efficiency Fund, DEEP, and other stakeholders in providing energy education for the public and for students. Such discernment process shall provide for stakeholder engagement to discern the key elements of the plan and the roles of various entities in planning and implementing energy education services for the public and students.<br><br>Given the scale of this ratepayer investment in education for the general public and students DEEP believes it is critical for a comprehensive proactive plan to accompany the budget. For example, a comprehensive plan would ensure that duplication of effort does not occur between *eesmarts* and Green LEAF activities.<br><br>The Companies shall submit a comprehensive education plan for DEEP's review and approval by July 1, 2016 that describes a scope of services for the education of the public and the education of students regarding sustainable resource and energy conservation. The comprehensive education plan shall ensure that services are demographically and geographically inclusive. Based on the stakeholder engagement and discernment process conducted, the comprehensive education plan shall describe the roles of various entities planning and implementing energy education services for the public and students.<br><br>Funding from the Connecticut Energy Efficiency Fund should be exclusively focused on supporting efficiency and conservation education themes but may deployed as part of education | *07/01/16 Submittal of comprehensive education plan (*moved for inclusion in the 2017 Plan Update) 11/01/16<br><br>Initiation of procurement process for education services **3/01/17 (**extension granted to 04/30/17) | Chapter 4 of the 2017 Plan Update<br><br>Procurement Process for Education services filed 4/19/17<br>RFP and Vendor Questions with Companies' Responses filed 8/15/17<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 4 | Comprehensive Coordinated Plan for Public Education and the Education of Students (continued) | programs and channels (funded in part by other sources) that touch on a broader range of themes. The plan must identify how<br><br>funding from the Connecticut Energy Efficiency Fund will be integrated with other energy education services and funding sources to ensure energy conservation education is conducted statewide.<br><br>Such comprehensive education plan shall include a description of the scope of services that will be acquired through professional services and describe a competitive process to initiate by October 1, 2016 an open, competitive process to procure those services. | | |
| 5 | Transition to Grant Process for Services Delivered by Colleges and Universities | DEEP is pleased to approve the budget for ISE's work [which is spread across different elements of the Plan budget and summarized in the Plan's Appendix F) for calendar year 2016. DEEP believes that some additional time is needed for DEEP to consider and discuss with stakeholders the comments received on DEEP's proposed condition of approval relating to "transition to grant process for services delivered by colleges and universities". To allow for that additional time without delaying a decision on the remaining Plan budget for 2016-2018, in the coming weeks, DEEP will issue a supplemental conditional approval related to whether to retain this condition of approval regarding the items in the 2017 and 2018 budgets that relate to the work performed by ISE. | | Informational only<br><br>Appendix E of the 2017 Plan Update<br><br>Item Completed |
| 6 | Residential Weatherization Barriers | The Companies shall submit an annual report on residential weatherization barriers for customers of each Company to BETP for DEEP's records which DEEP would share with the Department of Housing, Department of Public Health, and make available to other interested parties. Pre-weatherization barriers include, but are not limited to: asbestos, knob and tube wiring, mold, and unvented appliances.<br><br>Such an annual report should include charts and the information contained in the Plan's summary of the issue. The report should summarize the data that Eversource collected from HES contractors for visits performed since January 2014. The report should include charts that depict the results of the HES contractor barrier reporting and assist with quantifying the level of funding and financing that may be needed to remediate health and safety barriers, as this is an important ongoing step needed to achieve the 80 percent weatherization goal by 2030. | 03/01/18 and annually on March 1st of each year | Filed 03/02/17<br><br>Revised and Filed 03/10/17<br><br>Filed separately 2/28/18<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 7 | Home Energy Solutions Co-Pay | The HES co-pay shall be increased by at least $25.00 on an annual basis as follows: no later than September 1, 2016, the co-pay shall be raised to at least $124; no later than September 1, 2017 the co-pay shall be raised to at least $149; and no later than September 1, 2018, the co-pay shall be raised to at least $174.<br><br>The purpose of this modification is to increase the share of participants' investments to advance a long-term goal of market transformation and increasing the scalability of residential efficiency programs – a priority that was emphasized in the 2013 Comprehensive Energy Strategy. As participants provide a greater share of the program cost, the ratepayer-funded incentives will be able to reach more customers. DEEP is setting out the required schedule in this decision in order to ensure that vendors can prepare for the co-pay increases well in advance and to incent the Companies and vendors to focus on strategic marketing to promote the value of home performance to customers. These numbers are based on data collected in a price elasticity study conducted by the Companies in August 2015 and reported to the Board on November 12, 2015. That study documented that respondents indicated an increased willingness to pay a higher price for the co-pay, once they are informed of the benefits of improving their homes' performance. DEEP considers it essential that the Companies continue to provide education to residential property owners on the economic value of improving the energy performance of homes.<br><br>DEEP appreciates the role of the Board in providing careful, regular oversight of customer participation, equitable distribution, and budget expenditure for the residential program. In the event that, despite demonstrated substantial effort and investment in strategic marketing by the Companies and vendors to promote the value of home performance, customer demand is insufficient to expend annual budgets (including demand among customers for particular income levels), DEEP will consider a request from the Companies and the Board to amend the schedule of co-pay increases. Such request should be informed by compelling documentation of need, such as discussion with representatives from the home energy performance services industry, elasticity studies, market conditions, education efforts, and customer and vendor feedback. | 09/01/18<br><br>By September 1 of each year, notify vendors of annual co-pay increase<br><br>04/01/16 Review of HES co-pay rebate for insulation and HVAC | Filed<br><br>04/01/16<br><br>Chapter Two of the 2017 Plan Update<br><br>Filed 09/01/2017<br><br>Filed 06/12/2018<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 8 | Modification of C&LM Budget Tables (A,A-1,B,C,D) | Modify Tables A, A-1,B, C, and D for all Companies by reallocating the program subtotals presently at the bottom of each table back into the respective customer classes for Residential, Commercial and Industrial, and Other. This reallocation dollar amount should be displayed as a new line item for each customer class. The purpose<br><br>of such modification is to clarify how much of a total investment is made in each of the residential and the commercial and industrial classes. The net result will be that the sum of the individual customer classes in the main portion of the table will equal the grand totals at the bottom of the table.<br><br>This methodology should be employed with other tables in the Plan where a similar discrepancy exists between subtotals of investment dollars. All budget tables for all companies should show no program subtotals at the bottom of the table as currently displayed. Also, the table submitted by the Companies showing the percentage allocations of Residential and Commercial and Industrial from the Other customer class should be included with these revised budget tables, along with the associated investment dollars by customer class for each year of the Plan. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |
| 9 | Refinement of Consultant Services | The Board must collaborate with the Companies to develop, by no later than March 14, 2016, a work plan that describes a comprehensive list of specific tasks that Board consultants will perform in 2016,2017,and 2018 to fulfill the Board's statutory responsibilities. The Board shall submit such work plan to DEEP by March 14, 2016.<br><br>Such work plan shall provide for a Consultant Compensation Budget for 2016 not to exceed $650,000 and shall propose a budget for 2017 and 2018 not to exceed the 2016 level. DEEP believes that this level of funding is sufficient to provide the level of consultant services required to ensure the Board's ability to fulfill its statutory assignments. The goal of reducing this budget item from last year is to shift these investments into direct energy savings for the Residential and the Commercial & Industrial sectors.<br><br>The work plan for consultant services need to be carefully and continually reviewed by the Board to determine whether the work effort coincides with the budget proposed. A reduction in labor hours and/or labor rates may be required, in addition to a focusing of the work plans for the services the Board seeks. The budgets for each year of the three-year Plan are expected to vary with the tasks needed in those years. The Board may subsequently request an expansion in the scope of the work plan and/or an increase in the | 03/14/16 Energy Efficiency Board to submit Budget not to exceed $650,000 and work plan for task-driven consultant services | Filed 03/01/16<br><br>Item Completed |

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| 9 | Refinement of Consultant Services (continued) | budget if the need for additional services arises. Such request for DEEP's review and approval of an increased budget shall include sufficient documentation of specific priority tasks requiring additional work.<br><br>DEEP recognizes that the Board is a voluntary board and its members generously donate their time to advance the Board's mission. Thus, it makes sense to contract with consultants to assist the Board in fulfilling its duties, particularly given that such consultants bring expertise with a national perspective. DEEP commends the Board on conducting a competitive RFP for consultant services. DEEP encourages the Board to carefully consider the roles and responsibilities of each Consultant as the EEB reviews responses to its most recent request for proposals for technical services and to move to a more task-driven model of acquiring the services of technical experts. It is important to ensure that work is assigned and performed in an efficient manner, and that work plans are sufficiently detailed and planned to ensure that available resources from the Companies, DEEP, and the Connecticut Green Bank are utilized as appropriate prior to initiating additional tasks for the Board consultants.<br><br>Over the past several years the Conservation and Load Management staffing levels at the Companies have increased, and a new Connecticut Green Bank and DEEP Bureau of Energy and Technology Policy have been established. Additional resources are now available to support the Board in its mission and this should be reflected in the scope of contracting for the Board's consultant services. The Board should ensure that the scope of work for any technical services contracts supporting the Board prevents redundancies and maximizes the use of each technical consultant's expertise.<br><br>To further illustrate this evolution, we note that the Connecticut Green Bank, in its comments to DEEP regarding DEEP's tentative determination to approve with conditions the Plan, has offered to the Board and the Companies "to provide expertise on financing." The Connecticut Green Bank noted in their comments that they have "a team of finance experts" working to attract "more affordable investment in clean energy in Connecticut for residential, commercial, industrial, institutional, multi-family, non-profit, and infrastructure sectors." The<br><br>Connecticut Green Bank also has offered its expertise to identify financing solutions that can address both pre-weatherization health and safety upgrades as well as energy efficiency upgrades. | | |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 9 | Refinement of Consultant Services (continued) | Connecticut Green Bank comments to DEEP, dated December 21, 2015, page 2]<br><br>In response to its publication of its tentative determination to approve with conditions the Plan, DEEP received comments expressing concern about reductions to the Board consultants' budget, and noting that the level of investment needed must be sufficient to ensure the maintenance of energy efficiency planning in Connecticut at "deep strategic, programmatic, and technical levels well before any final regulatory decision is made" [Comment from Acadia Center, dated December 22, 2015, page 2]. The Office of Consumer Counsel expressed concerns in its comments [p. 2] submitted in response to DEEP's tentative determination to approve with conditions the Plan about the sufficiency of the budget to cover the workload of the consultants. The Office of Consumer Counsel noted in its comments [p. 2] that "there is only a very small amount of work that would qualify to be moved from a consultant... [because the Board] is an independent Board." DEEP has carefully considered these concerns and has concluded that a sufficient level of expertise may be obtained for the $650,000 budget approved for Energy Efficiency Board consultant services in 2016. | | |
| 10 | Evaluation, Measurement, and Verification | By no later than March 1, 2016, the Companies and the EEB shall revise the "2016-2018 Evaluation Plan Recommended Project List." Projects should be classified as either "Fundamental" or "Discretionary" with priority given to fundamental projects to be completed. Evaluation studies that are essential for complying with ISO specifications should be considered fundamental. The importance, timing, and data quality objective required must be articulated for each proposed study.<br><br>While the evaluations are important to ensure program cost-effectiveness, it is critical that the timing of the evaluations be synchronized to enable incorporation of program design recommendations into the program planning process. Additionally, the number and scheduling of the evaluations must be monitored to ensure that sufficient capacity exists on the part of the EEB members, EEB Committees, the Companies, the technical consultants, and the Evaluation Administrator to adequately review the results and respond timely to recommendations.<br><br>The update should focus on process and impact evaluations as required by Connecticut General Statute's section 16-245m, while continuing to transfer market assessment and other sector-based research studies to sector-based budgets. Based on a review of | 03/01/16 | Filed 03/01/16<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 10 | Evaluation, Measurement, and Verification (continued) | Table 8, DEEP believes that this budget provides sufficient capacity to conduct impact and process studies to evaluate program cost-effectiveness at the level of precision needed to quantify and verify savings and continually improve program design.<br><br>The balance of funds in the proposed Evaluation Budget above $3,000,000 may be reallocated to provide for initiation and development of direct measurement and verification capabilities. Such funds may be coordinated with and support Demand Response technology implementation. | | |
| 11 | Evaluation Administrator/ Consultant Budget | The Companies and the Board shall modify the Evaluation Administrator/Consultant budget downward to a level not to exceed $300,000, to reflect the modified "2016-2018 Evaluation Plan Recommended Project List." An inventory of administrative or consultant tasks and projects for each year may reveal cost saving opportunities in projects that are reviews or routine for now matured programs. The Evaluation Administrator budget must reflect an increased focus on ensuring quality and effective timing of Evaluation, Measurement, and Verification activities. The Board may propose a modification of this budget in the 2017 Update if sufficient documentation is provided.<br><br>Despite comments from the Evaluation Administrator to the contrary, DEEP notes that DEEP did not vote to approve the Evaluation Projects, Evaluation Budget, and Evaluation Administrator/Consultant Budgets at either the EEB meeting or Evaluation Committee meetings. Since we have the responsibility of reviewing, analyzing, and approving these items, it is DEEP's practice to abstain from voting on any plan or budget proposed by the Evaluation Committee or the full Board.<br><br>After a September 2015 Evaluation Committee meeting staff members from the Office of Consumer Counsel and DEEP reviewed the evaluation projects proposed by the Evaluation Administrator and raised questions with each project in order to determine whether these projects were necessary to be funded. These questions were sent to the Evaluation Administrator requesting a response back to both DEEP and OCC with the answers to them so that DEEP could determine whether the proposed studies were fundamentally necessary to be completed by a third-party Evaluation Administrator on in the timeframe of the Plan. The Evaluation Administrator declined to address those questions specifically and published the project list almost entirely similar to the initially proposed list. In a November 8, 2015 response to DEEP's request for information [BETP-52] from the | 03/01/16 | Filed 03/01/16<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 11 | Evaluation Administrator/ Consultant Budget (continued) | Board regarding the proposed Plan, the Evaluation Administrator did provide an especially useful table [Figure 8] to illustrate criteria for consideration of Evaluation Studies. This summary of criteria provided for prioritization in a meaningful way. In DEEP's review of this table it was evident that no more than $3 million is needed to complete the statutorily required task of evaluating, measuring, and verifying the savings from the Plan's investments. | | |
| 12 | Consistency in Company Reporting | Eversource and UI should utilize the same tables in reporting their data. As an example, Eversource currently uses Table B-1 and UI uses Table B for reporting benefit/cost ratios, and do not use common data reporting fields. This makes it unnecessarily difficult to compare and consolidate information between the Companies. The Companies should revise these tables to be consistent. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |
| 13 | Increase Effectiveness of Incentives in Multi-Family Property Energy Efficiency Retrofits and New Construction | As noted in the public comment from CHFA, DOH, and the Connecticut Green Bank, ongoing efforts to improve the coordination of financing with multi-family housing project development is important. As part of the overall process improvements underway that are described in the Plan, the Companies shall implement modified processes to increase the effectiveness of the coordination of financing with multi-family workflow process improvement. Specifically, assess the feasibility of issuing letters of agreement to the Connecticut Housing Finance Authority rather than developers to prevent energy efficiency improvements from being either engineered out of multi-family projects or used to increase the pricing of developers. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |
| 14 | HES-Income Eligible | The Companies shall modify the Home Energy Solutions-Income Eligible program to provide a baseline payment to Community Action Agencies to compensate such agencies for their intake services and provide a focus on the Agencies' core strengths. The Companies shall develop such modification with a focus on streamlining and harmonizing the HES-IE program with other weatherization programs in cooperation with the Connecticut Association for Community Action ("CAFCA") and DEEP. | 07/01/16 | Chapter Two of the 2017 and 2018 Plan Updates<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 15 | Clean Energy Communities | The Companies shall in cooperation with DEEP, municipalities, and stakeholders, modify the Clean Energy Communities model to better incorporate the sustainability work of municipalities, and the sustainability and climate change work of DEEP and to ensure a community driven process to continuously improve the Clean Energy Communities program.<br><br>Through the Companies' participation in stakeholder consultations led by DEEP, such modification should reflect the input from municipalities and various stakeholders The Companies shall cooperate with DEEP to support DEEP's identification of the steps that can be taken to integrate the work of municipalities, other advocacy organizations, and DEEP.<br><br>The Companies shall develop the capacity to generate public reports that aggregate energy consumption information on a municipality-wide basis to support the work of municipalities. The Companies shall review the effectiveness of the Clean Energy Communities dashboard in consultation with DEEP and municipalities. | 09/01/16 | Chapter 4 of the 2016-2018 Plan<br><br>Item Completed |
| 16 | Data Management | The Companies shall develop the capacity to efficiently provide information electronically to the EPA Portfolio Manager. While current law requires the Companies to provide data to the EPA Portfolio Manager, a direct correlation between buildings and accounts does not currently exist, which prevents the Companies from directly uploading this information. This condition of approval is to specifically require the Companies to develop the technology or staff resource capacity to correlate the data between buildings and companies so that it is ultimately possible for data to be migrated directly to the EPA Portfolio Manager platform. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |
| 17 | Budget Modification | The Companies shall propose a plan to reallocate unexpended 2015 revenue or any additional revenue, into 2016, to necessary investments that will ensure high priority work is completed. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
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| 18 | Budget Table Presentation | The Companies shall provide a statewide budget table that totals each of the companies into a consolidated column when submitting a revised Plan. | 11/01/17 | Filed 03/01/16 Revision filed 10/31/16 Revision filed 03/01/18 2018 Plan Update (pp. 39-43) Item Completed |
| 19 | Support for Municipalities | The Companies shall propose an allocation of the Commercial and Industrial budgets to ensure sufficient support is available to provide support to municipalities engaged in energy efficiency, particularly those municipalities pursuing Energy Savings Performance Contracts. | 03/01/16 | Filed 03/01/16<br><br>Item Completed |
| 20 | Performance Management Incentive | The Companies shall revise the budget for the performance management incentive to reflect a scale of 4.25% payment when 100% of goals are achieved for 2016 and 2017. Given the increasing difficulty in achieving savings as progress in mainstreaming energy efficiency is accomplished, the Companies may revise the 2018 payment to the originally proposed 4.5% scale if 100% of goals are achieved for 2018. | 03/01/18 | Filed 03/01/16 and 3/01/17 2018 Plan Revision filed 03/01/18 Update Appendix E |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 21 | Energy Efficiency Coincidence with Natural Gas Conversion | Propose a plan and submit a report on a semi-annual basis to BETP for DEEP's records to provide information on the instances of the installation of high efficiency equipment installed coincident with the conversion to natural gas supply at residential and commercial and industrial properties. Additionally, include reporting of insulation installed in such properties from January 2012 onward. Propose a plan to annually survey customers that determines motivators for converting to natural gas, determines motivators and barriers to installing energy-efficient natural gas equipment at the time of conversion, and determines awareness of energy-efficient natural gas equipment incentives and opportunities. Propose a plan to annually survey natural gas conversion contractors that may include assessment of the contractor's awareness of available energy-efficient heating and cooling equipment incentives and financing products, determine how contractors are presenting the energy-efficient equipment information to customers, and assessment of a contractor's willingness to promote energy efficient equipment as part of the value proposition of the conversion to the use of natural gas at the property.<br><br>In response to Company's March 2017 Filing, DEEP requested the following:<br>• Document to DEEP the inclusion of the following elements into their contractors' training program<br>• Practical educational materials that support contractors in their discussions with customers considering converting to natural gas. The contractors receiving training must include both those contractors working in the conservation and load management<br><br>heating equipment programs as well as contractors working with natural gas conversion customers. Specifically, the materials should illustrate the comparisons between high efficiency option and a standard efficiency option, including installation and operating costs, using industry standard estimates of fuel prices, to help inform the customer's decision. The Companies should develop a plan to make this a uniform comparison for all customers that wish to switch to natural gas.<br>• The Companies' training material should ensure that contractors are educated regarding the consolidated sources of information related to financing, incentives, and rebates for high efficiency equipment and must have all contractors provide an acknowledgement checklist to the Companies documenting that they have reviewed and regularly review the webpage or printed materials that contain the consolidated financing, rebates, and other incentives information. | 09/01/17 filing And 11/15/17 (Presentation Due)<br>Due semi-annually in March and September | Semi-annuals Filed<br>03/01/16<br>9/01/16<br>03/02/17<br>06/30/17<br>09/01/17<br>02/28/18<br>09/04/18<br>(Survey Plan Filed)<br><br>Item Completed |

| | | | | |
|---|---|---|---|---|
| 21 | Energy Efficiency Coincidence with Natural Gas Conversion (continued) | No later than July 1, 2017 the Companies must provide DEEP with a Survey Plan that specifies how the surveys will be performed to achieve continuous improvement in the information being collected.<br>• The survey results must be used to improve contractor training.<br>The Companies must present the results of the surveys to the Board by November 15, 2017 and November 15, 2018. | | |
| 22 | Heat Pumps [Geothermal and Other] | The Companies shall review the rebate program for geothermal heat pumps and other heat pumps and determine the merits of increasing incentives for this equipment for the purpose of increasing participation in investment of this technology, with the incentives tied to properly installed performance. The Companies shall also consult with the Connecticut Green Bank to ensure the availability of adequate financing products for this equipment to customers. The Companies shall summarize the status of financing products provided by the Connecticut Green Bank and the Companies. The Companies shall submit a report summarizing its review by July 1, 2016. In their report the Companies shall review the specifications and incentives used for heat pumps in other northeastern states and recommend whether to align specifications and incentives with those of other northeastern states, to leverage regional action to lower the cost of such equipment. | 07/01/16 | Filed 07/01/16<br><br>Item Completed |

## From the 2017 Update Decision

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 1 | Increase Focus on Reducing Peak Demand | DEEP directs the Companies to quantify the system benefits of shifting peak demand to provide sufficient data to inform additional investments in peak demand reduction programs for 2018 and beyond.<br><br>"Pursuant to DEEP motion ruling dated 06/28/17, DEEP grants an extension of time until August 1, 2017 to file Order 1." | 08/1/17 | Eversource filed 06/29/17 and refer to Chapter two<br><br>United Illuminating filed 08/01/17<br><br>Item Completed |
| 2 | Increase Effectiveness of Existing TOU Rate in United Illuminating Region | DEEP directs UI to also develop during 2017 a proposal to implement a broader basic Residential Peak Demand Reduction program for 2018 and implement such program in 2018. Such proposal shall be submitted in the 2018 Update of the Plan. Such proposed program shall target all customers on the residential time of use rate ("Rate RT"), utilize UI's existing meters, the data from these meters, along with the residential time of use rate to reduce peak demand and/or shift consumption to off-peak periods. The proposed program must include the following elements:<br>• The Residential Peak Demand Reduction program goals must include measurable customer-specific actual demand reduction and energy targets (i.e., reducing individual peak consumption and/or shifting consumption to off-peak times);<br>• The Residential Peak Demand Reduction program must increase the number of customers on the residential time of use rate;<br>• UI must submit annual reports on the effectiveness of the program's goals, and may present such data on the CT Energy Efficiency Dashboard;<br>• UI must establish and maintain historical and current peak demand information, aggregated for all customer classes, to be displayed on UI's website and EnergizeCT.com; and<br>• The program must propose a reasonable performance incentive for UI for both the Residential Peak Demand Reduction basic program and for the future program that develops from the Peak Time Rebate pilot;<br>• The Companies may propose reallocations to increase the budget for implementing this program. | 11/1/17 | Chapter Three of the 2018 Plan Update<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 2 | Increase Effectiveness of Existing TOU Rate in United Illuminating Region (continued) | • Such proposal shall be submitted with the 2018 Update of the Plan.<br>• UI shall submit a summary of actions and progress as part of the 2018 Update of the Plan. | | |
| 3 | Increasing Data Sharing Among Low-Income Programs | The Companies must develop a secure electronic data sharing portal or reporting system that can ensure the accessibility of energy consumption data for LHEAP households to the CT Department of Social Services.<br><br>03/15/17: Pursuant to letter from DEEP, extending due date from April 1, 2017 to November 1, 2017 and may be combined with the submittal of the 2018 Update of the C&LM Plan. | 11/1/17<br><br>Extension filed | See Chapter Two of the 2018 Plan Update Pg. 20<br><br>Item Completed |
| 4 | Benefit Cost Testing | The Companies are directed to submit an outline of the specific proposed changes in Benefit-Cost Testing that are proposed to be incorporated in 2017. | 03/01/17 | Filed 02/28/17<br><br>Item Completed |
| 5 | Revision of Wording Describing US DOE Grant | DEEP directs the Companies to update the language on pages 32-34 to the attached language in the Response. | 03/01/17 | Filed 03/01/17 With revised 2017 Plan Update<br><br>Item Completed |

## From the 2018 Update Decision

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 1 | Legislature's Seizure of the Plan's Revenue Sources | The legislature's seizure of the Plan's revenue sources is retroactive to July 1, 2017 but was identified in the budget passed October 31, 2017 for State fiscal years 2018 and 2019. The Plan's implementation progress meant that the 2017 budget was substantially expended by that date, with budget remaining for only two months in calendar year 2017, resulting in a negative balance for the CEEF. Therefore, DEEP is authorizing the carrying forward of whatever variance exists in the fund balance from 2017 to 2018 to complete 2017 obligations. This is consistent with the flexibility intended in following a three-year implementation plan. DEEP is applying this condition to reduce the impact of the budget reduction on the commitments to the contractor network and the jobs that had been planned based on the original budget for 2017. Since 2018 is the third year of the Plan, it is critical that adjustments to the 2018 budget are made as needed to ensure that the overall three-year budget is reconciled by the close of calendar year 2018. | 12/26/17 | Information Only |
| 2 | Educate Customers on TOU Rates | DEEP provided direction to UI in its approval of the 2017 Update of the 2016-2018 Conservation and Load Management Plan to execute steps to educate customers regarding time of use rates and motivate customers to participate in such rates. DEEP is withdrawing that direction due to the budget reductions imposed by June SS P.A. 17-2, to enable those funds to be reallocated for direct services. DEEP also is suspending the metric related to advancing the Time of Use rate for 2017 and 2018. DEEP intends to revisit efforts to advance TOU rate adoption as soon as practical after implementation of the budget diversions and as part of the next three-year plan. | 12/26/17 | Information Only |
| 3 | HES-IE Penalty Metrics | Given the reduction in spending for the Home Energy Solutions-Income Eligible (HES-IE) program that the legislative budget reduction prompted, we are suspending the penalty metric for not achieving the spending for HES-IE in 2017 and 2018. While per the Board's condition of approval a budget allocation was increased for HES-IE from other budget categories to restore services to 1,000 residential units. This effectively changed the budget reduction from 29% to 25%. The budget reductions imposed by the legislature still result in the HES-IE 20108 budget being reduced by $5,600,569, resulting in the exclusion of 5,600 low-income homes from receiving weatherization services. This direction only applies to the penalty metric. The performance metrics based on achieving the targets for service delivery shall remain in place. | 12/26/17 | Information Only |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 4 | Narrative Update on 2017-2018 Spending and Savings | The Companies shall submit an updated narrative with the 2017 actual spending and savings reconciliation and final 2018 budget that should be submitted no later than March 1, 2018. The narrative should incorporate the program changes identified as part of the process of revising the budget. | 03/01/18 | Filed 03/01/18<br><br>Item Completed |
| 5 | Clean Energy Communities Program Update | While DEEP recognizes the Board's prioritization of direct services, DEEP is concerned about the reduction of services to municipalities that is represented by the significant budget reduction to the Clean Energy Communities program. The Companies must identify in the updated narrative that is due no later than March 1, 2018, how, outside of the Clean Energy Communities program, it may be possible to maintain the public facing availability of energy data that municipalities rely on to inform their energy management. | 03/01/18 | Filed 03/01/18<br><br>Item Completed |
| 6 | Program Revisions Updated Narrative | The Companies shall describe the program revisions being made to the programs, including those identified in the Board's December Residential committee special and regular meetings, in the updated narrative for the 2018 Update, which is due no later than March 1, 2018. The updated narrative shall also identify a protocol for informing contractors and communicating to customers that legislated funding constraints limit certain services to residents and businesses that do not contribute equitably to the utility assessment on electric and natural gas consumption. | 03/01/18 | Filed 03/01/18<br><br>Item Completed |
| 7 | DEEP Review of Compliance Items 27 and 28 | Due to the Board's conditions of approval #27 and #28, noting that the Board did not complete its review of the consultant budget and the Evaluator Administrator budget. Those budget line items will need to be addressed at the Board's January meeting. The Board will need to identify the budgeted amount for those elements and provide a rationale for any figures that are below the pro rata 33% reduction that the Board identified as the standard budget reduction during its November 8, 2017 meeting. DEEP anticipates, based on the Board's prioritization of direct services over other Plan categories that are of an administrative or other supporting nature, that the Board will revise the placeholder budget amount to represent at least a 33% reduction. DEEP will review those numbers and provide a response that can be incorporated into the Companies' submittal of the reconciled 2017 figures and final budget for 2018, which shall be due by March 1, 2018. | 03/01/18 | Filed 03/01/18<br><br>Item Completed |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 8 | Evaluation Studies | When DEEP approved the 2016-2018 Electric and Natural Gas Conservation and Load Management Plan in 2015, DEEP approved an evaluation budget for 2016-2018 totaling $9 million [approximately $3 million per year] for Evaluation Studies. DEEP will not authorize any amount in 2018 that brings the total beyond that amount for the three Plan years.<br><br>DEEP has summarized the studies to be completed in 2018 in Tables 1 in Attachment A to this letter. DEEP is approving the studies listed in Table 1 which are planned for initiation, are underway, or are completed. DEEP is eliminating or deferring the studies listed in Table 3. DEEP recommends revisiting and reprioritizing the list of evaluation studies as part of the development of the next three year plan.<br><br>The Companies shall confirm the amount spent through December 31, 2017 for the approved studies in Tables 1 of Attachment A. The Companies shall submit this information to DEEP by January 30, 2018.<br><br>DEEP will review and confirm the final amount to be budgeted in 2018 for Evaluation Studies, and the Companies shall include this amount in the submittal of the final Plan budget for 2018, which shall be due by March 1, 2018. | 03/01/18 | Filed 03/01/18<br><br>Item Completed |
| 9 | Equitable Distribution Data | The Companies must convene a joint meeting with DEEP prior to submittal of the 2017 Equitable Distribution data to reduce inconsistencies in data collection and presentation and to collectively clarify interpretations of the statute that affect the data submittal. The companies must also submit an updated method of census tract identification and economic status that determines whether the census tract is distressed. The Companies must submit the 2017 Equitable Distribution data on a form prescribed and provided by DEEP no later than July 1, 2018. | 07/01/18 | 07/01/18<br><br>Item Completed |

## From the 2019-2021 Plan Decision[108]

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 1 | Heat Pump Pilot Program | DEEP has determined that the pilot can proceed with the additional incentives for oil and propane heating consumers that were proposed in the November 19, 2018 Conservation and Load Management Plan (C&LM Plan), provided the Companies develop and submit for DEEP's review a more detailed description of the pilot, no later than March 1, 2019.<br><br>DEEP appreciates the multiple stakeholders' time and effort to attend the public meeting and to provide written comments. DEEP has weighed stakeholders' concerns about moving forward with strategic electrification against concerns over the use of Conservation and Load Management funds for fuel switching as well as concerns of alignment with the 2018 Comprehensive Energy Strategy.<br><br>This updated description should clearly articulate the goals for the pilot, including proposed tracking and analysis methodology, and at a minimum information regarding:<br>• Total cost: Identify the total cost of the 100 Heat Pump Pilot Program and how this compares to what was previously spent on the cost of the incentives in the last ten years.<br>• Incentive/rebate levels: Provide a breakdown of the specific rebate or incentive levels offered per installation and clarify whether the rebate is for each customer or intended as an incentive to HES vendors to successfully acquire customers willing to install and use heat pumps for heating. Identify how incentive levels were calculated. Identify any market research or data used to determine the "additional" incentives for oil/propane customers.<br>• Customer use cases: Clearly identify the specific customer use cases the pilot envisions to target. For example, clarify whether the pilot targets partial home or whole house conversions and whether the targeting reflects the assumptions used in incentive development.<br>• Financing products: Summarize the existing or new financing products (in addition to these incentives) available to help customers purchase and install heat pumps.<br><br>All other educational and promotional efforts for renewable heating and cooling equipment, including heat pumps, as well as other high efficiency HVAC equipment should continue as described in the Plan. While allowing this pilot to proceed, DEEP is | 03/01/19 | Filed on 3/1/19 |

[108] DEEP, Approval with Conditions of the 2019-2021 Plan (dated Nov. 11, 2018), filed Dec. 20, 2018.

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| | | not endorsing the use of conservation and load management dollars for fuel switching. DEEP looks forward to learning how to transform this market successfully and this pilot should contribute to this knowledge. To date, the C&LM Plan Program Administrators have not recommended one fuel over another but provide an incentive to encourage adoption of high efficiency equipment based on the customer's preferred fuel choice. Fuel switching at scale remains crucial to achieve the state's greenhouse gas emission reduction targets to address climate change and will require identifying sustainable incentive sources to catalyze the transition of oil and propane equipment.<br><br>As outlined in the Plan, the Energy Efficiency Board plans to review and assess the 2019 pilot results in September 2019, in time for the 2020 Plan Update. The future efforts regarding low-carbon heating technologies will be considered during the 2020 and 2021 Plan Update planning processes, and any such efforts will be reviewed by the Energy Efficiency Board as part of the Plan Updates, with subsequent review and approval by DEEP. | | |
| 2 | Equitable Distribution Data | Pursuant to CGS Sec. 16-245ee, each EDC must annually submit to DEEP and the Energy Efficiency Board the prior calendar year's Equitable Distribution data on a form prescribed and provided by DEEP no later than July 1, and also submit an updated method of census tract identification and economic status that determines whether the census tract is distressed. This data shall be provided on a census tract basis, or if not available by census tract, on a town-by town basis, the amount of conservation program funds assessed and the amount of incentives expended, disaggregated as small or large customers according the 100kW peak demand threshold, and further disaggregated by customer class (i.e. Residential and C&I). The residential data component for small customers shall be disaggregated by the HES and HES-IE programs, and identify the total number of projects participating in each program and disaggregate those project numbers by housing stock (i.e., single family, multi-family (2-4 units), and multi-family (>4 units)). Though the statute requires submission on a census tract basis, the companies have noted in the past that a town-by-town submission is less costly, generally more useful to municipalities, and would streamline the analysis. DEEP requests that the companies provide written explanations of their position no later than February 1, 2019. This could include an analysis of the approximate number of homes that could be served in place of expending the budget on third-party census tract analysis. | 02/01/19<br><br>07/01/19 | Filed on 02/25/19 |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 3 | Propose a Frequency to Conduct Financial and Operational Audits; Conduct Such Audits on the Approved Frequency Schedule | No later than March 1, 2019, the Companies shall propose, with a revised budget as needed, a process and frequency to routinely conduct a Financial Audit or alternately, Agreed Upon Procedures review, and to routinely conduct an Operational Audit of the Conservation and Load Management Plan, consistent with standard practices. The processes should cover each program year for each audit, however multiple years may be included in a single audit. No later than July 1, 2019, the Companies shall develop and propose the timeline for routinely conducting the audits of the Conservation and Load Management Plan. | 03/01/19<br><br>07/01/19 | Filed on 2/14/19<br><br>Requested extension from 7/1/19 to 9/30/19 |
| 4 | EnergizeCT Center | No later than March 1, 2019, additional information is required to be made available to the Energy Efficiency Board and the public prior to implementing this proposed decision. Therefore, DEEP instructs the Companies to provide an analysis of the number and types of groups served (prior to legislative diversion) and other usage data such as the use of the center for C&LM trainings, to illustrate how this center supports education. The analysis should include a breakdown of the budget and the activities planned after the Center shutdown. This analysis should include the effective budget decrease of the closure. | 03/01/19 | Filed on 3/1/19 |
| 5 | Benefit-Cost Testing Methodologies and Input | No later than March 1, 2019, the Companies shall provide a written rationale for the inclusion and impact of the Pooled Transmission Facilities, Capacity DRIPE and the Reliability components. The number of years for each DRIPE component needs to be specified. A comparison of the 2015 to 2018 AESC benefits should be included. A nominal discount rate of 3% shall be used, for the reasons detailed in Attachment B to DEEP's Approval with Conditions, for all Benefit/Cost Ratio calculations provided on or after March 1, 2019. | 03/01/19 | Filed on 3/1/19 |
| 6 | Performance Management Incentives (PMI) | DEEP approves the concept and percentages of the PMI. More work is needed on the secondary metric descriptions to ensure clear and effective metrics. No later than March 1, 2019 DEEP directs the Companies to provide additional detail on the secondary metrics and their progression from the previous plans/or the importance of the added metric and offer suggestions for modifications of existing or for additional secondary metrics that would catalyze increased opportunities for progress in achieving the Plan's goals. DEEP expects to revisit PMI in 2019 for a review of entire program. | 03/01/19 | Filed on 2/28/19 |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 7 | Winter Reliability and Winter Demand | No later than March 1, 2019, the Companies shall provide a quantification and discussion of the effect of conservation, load management, and energy efficiency investments, both electric and gas, on winter peak demand and as applicable, winter fuel reliability. | 03/01/19 | Requested Extension on 2/15/19 to file with Plan Update 11/1/19 |
| 8 | Street Lighting | No later than March 1, 2019, the Companies shall submit to BETP for DEEP's records a report that summarizes the state of street lighting in Connecticut. Specifically, the Companies shall provide best estimates of the numbers of street lighting fixtures and exterior private area lighting fixtures owned by the utilities, municipalities, and the State of Connecticut. UI's Outdoor Lighting Solutions programs, previously known as Private Area Lighting and any equivalent Eversource program should be included in this analysis. To the extent such information is available to the Companies; the report shall quantify how many street lights in each category have been upgraded to LED technology and/or with advanced lighting controls. The Companies will provide recommendations on the timeline for upgrading Company-owned street lights in each of these categories and identify the funding source(s). The Companies shall also propose a process for monthly reporting of any Service Address/Point of Delivery changes as the lights are upgraded to LEDs. An alternative to monthly would be a one-time conversion table of old-to-new, depending on where the Companies are in the conversion process. | 03/01/19 | Filed on 3/1/19 |
| 9 | Demand Management Programs and Pilots | No later than June 1, 2019 the Companies are to provide additional detail on Demand Management programs and pilots as developed and report related results. DEEP supports the expansion of the UI Wi-Fi enabled Heat Pump Water Heaters program and directs the expansion be undertaken in 2019 for both UI and Eversource if pilot results are successful. Additionally, the report should propose, as needed, updates in 2019 or future years to further align the Plan's demand management programs with work performed to advance the Distribution System Planning and Grid Modernization actions described in PURA dockets on those topics. | 06/01/19 | |
| 10 | Modernization Initiatives (Early Retirement/Post-Useful Life) | DEEP is supportive of this initiative. No later than June 1, 2019 additional reporting requirements need to be carved out of normal reporting and a reporting template should be provided. | 06/01/19 | |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 11 | Market Based Solutions for Mid-sized Businesses | DEEP is supportive of this initiative. No later than June 1, 2019 Eversource shall provide a discussion on the incentives and other benefits being offered in this program and how they compare to the Small Business and Energy Opportunities programs. | 06/01/19 | |
| 12 | HES and HES-Income Eligible Solutions | No later than June 1, 2019, the Companies shall provide an additional, detailed description of the programs, including detailed budgets that provide detail on the planning assumptions used in the Program. Detail on the percentage of budgets for multi-family work should be included. This should report on the planned evolution of HES program over next three years, expanding beyond narrative in this Plan. | 06/01/19 | |
| 13 | Energy Efficiency Coincidence with HVAC Installation | No later than July 1, 2019, propose a plan including a timeline for implementation to analyze market share on an annual basis and annually submit a report to DEEP for DEEP's records to provide information on the instance of high efficiency equipment installed compared with standard equipment, using market share, municipal permits, or other reasonably reliable proxies for estimating the installation of high-efficiency HVAC at residential and commercial and industrial properties. The continued movement of product incentives to upstream locations requires different approaches to determine the status of market transformation. | 07/01/19 | |
| 14 | US DOE Home Energy Score | In the 2019-2021 C&LM Plan, the Companies state that they will "explore the correlations between the DOE Home Energy Score and customers implementing add-on measures," in order to better understand the effectiveness and value of including the score in HES. No later than September 1, 2019, the Companies shall perform this analysis with consideration to other effects such as funding diversions, and the February 2018 implementation of "opt-in-only" language. | 09/01/19 | |
| 15 | Commercial and Industrial Lighting Technologies | DEEP recognizes the importance of developing the infrastructure to promote advanced lighting technology. DEEP needs to ensure LED conversions in the retrofit market continues until the market has been saturated. This measure type provides for important winter peak savings. No later than October 1, 2019 the Companies should provide a methodology to assess remaining market potential for C&I sector retrofit and provide a discussion on this market. | 10/01/19 | |

| Item # | Topic or Program | Condition of Approval | Due Date | Status |
|---|---|---|---|---|
| 16 | Heat Pump Technologies Specifications | No later than October 1, 2019, the Companies are to incorporate the heat pump specifications of the U.S. Department of Energy's Regional Energy Efficiency Organization, Northeast Energy Efficiency Partnerships (NEEP), into the heat pump program or to provide a detailed analysis on why they believe these specifications are not satisfactory. This analysis should include the impact of not participating in a regional standard and its impact on the market. | 10/01/19 | |
| 17 | Residential Lighting Technologies | DEEP is providing an approval of a three-year plan, however, since it has been noted that planning assumptions are in flux for residential programs in 2020 and 2021, these programs will require additional approvals when the Companies have reached a consensus on planning assumptions. This should be done through the Plan update process and may require the Companies to supply more detailed analysis than typically provided for Plan updates. | On-going | |
| 18 | Electronic Data Coordination-DSS | The Companies shall continue to work collaboratively with the Department of Social Services and DEEP to coordinate data related to households served through energy assistance and energy conservation and weatherization programs to ensure the state is able to optimize program coordination and to fulfill its obligations to report detailed demographic and other information to federal agencies on grants received from the US Department of Health and Human Services through the Low-Income Home Energy Assistance Program and from the U.S. Department of Energy Weatherization Assistance Program for Low-Income Households. | On-going | |
| 19 | Electronic Data Coordination and Accessibility—DEEP and Municipalities | The Companies shall cooperate and collaborate with DEEP to continue to coordinate electronic data availability and connectivity related to the Companies' statutory requirements pursuant to CGS Sec. 16-245ii to maintain building energy data, that can be made available to the public, in a format compatible for uploading to the United States Environmental Protection Agency's ENERGY STAR Portfolio Manager or similar system. Such similar system includes the state's energy management platform specified by DEEP and DAS for use by state facilities, pursuant to CGS Sec. 16a-38i. | On-going | |

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# APPENDIX F: BUDGET & SAVINGS TABLES

## BUDGET SUMMARY OF THE 2019-2021 PLAN PROGRAM YEARS

### 2018 Combined Budgets (Electric and Natural Gas)

| Statewide EE BUDGET | 2018 Eversource CT Electric Actual Results 12/31/18 | 2018 UI Actual Results 12/31/18 | 2018 Eversource CT Gas Actual Results 12/31/18 | 2018 CNG Actual Results 12/31/2018 | 2018 SCG Actual Results 12/31/2018 | 2018 Statewide Combined Total 12/31/2018 |
|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | |
| Residential Retail Products | $ 6,529,899 | $ 1,069,953 | $ - | $ - | $ - | $ 7,599,852 |
| **Total - Consumer Products** | **$ 6,529,899** | **$ 1,069,953** | **$ -** | **$ -** | **$ -** | **$ 7,599,852** |
| New Construction, Additions & Major Renovations | $ 2,204,292 | $ (35,586) | $ 918,565 | $ 479,749 | $ (255,564) | $ 3,311,456 |
| Home Energy Solutions - Core Services | $ 10,336,611 | $ 2,116,512 | $ 1,843,187 | $ 1,846,216 | $ 1,425,026 | $ 17,567,552 |
| Home Energy Solutions - HVAC, Water Heaters | $ 4,048,082 | $ 1,229,383 | $ 2,938,795 | $ 2,051,069 | $ 2,811,800 | $ 13,079,129 |
| HES-Income Eligible | $ 11,599,849 | $ 2,731,548 | $ 4,400,007 | $ 4,987,179 | $ 3,217,032 | $ 26,935,615 |
| Residential Behavior | $ 526,083 | $ 461 | $ 167,458 | $ 137,830 | $ 125,944 | $ 957,776 |
| **Subtotal: Residential** | **$ 35,244,816** | **$ 7,112,271** | **$ 10,268,012** | **$ 9,502,043** | **$ 7,324,238** | **$ 69,451,380** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | |
| Energy Conscious Blueprint | $ 6,632,890 | $ 1,720,970 | $ 1,831,447 | $ 1,901,649 | $ 759,888 | $ 12,846,844 |
| **Total - Lost Opportunity** | **$ 6,632,890** | **$ 1,720,970** | **$ 1,831,447** | **$ 1,901,649** | **$ 759,888** | **$ 12,846,844** |
| **C&I LARGE RETROFIT** | | | | | | |
| Energy Opportunities | $ 29,689,128 | $ 4,208,266 | $ 4,097,336 | $ 716,275 | $ 1,208,221 | $ 39,919,226 |
| Business & Energy Sustainability (O&M, RetroCx, BSC, PRIME) | $ 2,977,133 | $ 357,593 | $ 569,494 | $ 1,011,601 | $ 130,461 | $ 5,046,282 |
| **Total - C&I Large Retrofit** | **$ 32,666,260** | **$ 4,565,859** | **$ 4,666,830** | **$ 1,727,876** | **$ 1,338,682** | **$ 44,965,507** |
| Small Business Energy Advantage | $ 11,613,734 | $ 2,285,024 | $ 247,416 | $ 211,943 | $ 72,863 | $ 14,430,980 |
| **Subtotal: C&I** | **$ 50,912,884** | **$ 8,571,853** | **$ 6,745,693** | **$ 3,841,468** | **$ 2,171,433** | **$ 72,243,331** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | |
| Educate the Public | $ 562,325 | $ 293,599 | $ 62,878 | $ 68,326 | $ 68,327 | $ 1,055,455 |
| Customer Engagement | $ 1,350,290 | $ 8,199 | $ 193,660 | $ 32,815 | $ 4,807 | $ 1,589,771 |
| Educate the Students | $ (1,626) | $ 83,189 | $ 41,953 | $ 25,981 | $ 25,891 | $ 175,388 |
| Educate the Workforce | $ 84,770 | $ 35,954 | $ 9,314 | $ 12,456 | $ 12,836 | $ 155,330 |
| **Subtotal: Education & Engagement** | **$ 1,995,759** | **$ 420,941** | **$ 307,805** | **$ 139,578** | **$ 111,861** | **$ 2,975,944** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | |
| Residential Loan Program (Includes ECLF and OBR) | $ 1,032,277 | $ 74,473 | $ 84,550 | $ - | $ 7,638 | $ 1,198,938 |
| C&I Financing Support | $ 2,677,386 | $ - | $ - | $ - | $ - | $ 2,677,386 |
| Time Of Use | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ 281,632 | $ 80,132 | $ 34,459 | $ 54,781 | $ 58,531 | $ 509,535 |
| **Subtotal: Programs/Requirements** | **$ 3,991,295** | **$ 154,605** | **$ 119,009** | **$ 54,781** | **$ 66,169** | **$ 4,385,859** |
| **OTHER - LOAD MANAGEMENT** | | | | | | |
| ISO Load Response Program | $ 1,230,295 | $ - | $ - | $ - | $ - | $ 1,230,295 |
| Residential Demand Response | $ 528,780 | $ 558,333 | $ - | $ - | $ - | $ 1,087,113 |
| C&I Demand Response | $ 237,674 | $ 157,542 | $ - | $ - | $ - | $ 395,216 |
| **Subtotal: Load Management** | **$ 1,996,750** | **$ 715,875** | **$ -** | **$ -** | **$ -** | **$ 2,712,625** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | |
| Administration | $ 813,659 | $ 378,468 | $ 133,366 | $ 142,237 | $ 143,273 | $ 1,611,003 |
| Marketing Plan | $ 139,080 | $ 72,657 | $ 22,597 | $ 31,196 | $ 29,900 | $ 295,430 |
| Planning | $ 601,069 | $ 204,556 | $ 123,125 | $ 108,069 | $ 98,428 | $ 1,135,247 |
| Evaluation Measurement and Verification | $ 1,829,414 | $ 255,806 | $ 145,595 | $ 217,514 | $ 217,523 | $ 2,665,852 |
| Evaluation Administrator | $ 176,199 | $ 44,800 | $ 19,902 | $ 18,667 | $ 18,667 | $ 278,235 |
| Information Technology | $ 1,147,062 | $ 334,862 | $ 148,381 | $ 150,315 | $ 140,182 | $ 1,920,802 |
| Energy Efficiency Board Consultants | $ 306,176 | $ 76,424 | $ 33,163 | $ 31,893 | $ 31,893 | $ 479,549 |
| Audits - Financial and Operational | $ 60,000 | $ 12,000 | $ 10,000 | $ 4,200 | $ 4,200 | $ 90,400 |
| Performance Management Incentive (PMI) | $ 6,953,613 | $ 1,320,905 | $ 1,088,866 | $ 877,258 | $ 709,031 | $ 10,949,673 |
| **Subtotal: Admin/Planning Expenditures** | **$ 12,026,273** | **$ 2,700,478** | **$ 1,724,995** | **$ 1,581,349** | **$ 1,393,097** | **$ 19,426,192** |
| **TOTAL** | **$ 106,167,776** | **$ 19,676,023** | **$ 19,165,514** | **$ 15,119,219** | **$ 11,066,798** | **$ 171,195,330** |

## 2019 Combined Budgets (Electric and Natural Gas)

| Statewide EE BUDGET | 2019 Eversource CT Electric Proposed Budget 03/01/19 | 2019 UI Proposed Budget 03/01/19 | 2019 Eversource CT Gas Proposed Budget 03/01/19 | 2019 CNG Proposed Budget 3/1/2019 | 2019 SCG Proposed Budget 3/1/2019 | 2019 Statewide Combined Total 3/1/2019 |
|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | |
| Residential Retail Products | $ 8,505,986 | $ 2,065,085 | $ - | $ - | $ - | $ 10,571,071 |
| **Total - Consumer Products** | **$ 8,505,986** | **$ 2,065,085** | **$ -** | **$ -** | **$ -** | **$ 10,571,071** |
| New Construction, Additions & Major Renovations | $ 2,644,901 | $ 607,378 | $ 821,137 | $ 719,950 | $ 1,099,837 | $ 5,893,202 |
| Home Energy Solutions - Core Services | $ 17,912,103 | $ 3,644,267 | $ 1,996,353 | $ 3,236,505 | $ 1,944,962 | $ 28,734,190 |
| Home Energy Solutions - HVAC, Water Heaters | $ 3,989,546 | $ 1,457,707 | $ 2,364,019 | $ 1,824,189 | $ 3,571,838 | $ 13,207,298 |
| HES Income Eligible | $ 15,971,230 | $ 4,251,647 | $ 3,725,172 | $ 4,206,424 | $ 3,321,827 | $ 31,476,299 |
| Residential Behavior | $ 1,700,000 | $ 121,476 | $ 410,000 | $ 156,228 | $ 179,676 | $ 2,567,380 |
| **Subtotal Residential** | **$ 50,723,766** | **$ 12,147,561** | **$ 9,316,680** | **$ 10,143,296** | **$ 10,118,139** | **$ 92,449,442** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | |
| Energy Conscious Blueprint | $ 12,402,540 | $ 4,184,555 | $ 2,829,007 | $ 2,151,328 | $ 2,011,328 | $ 23,578,758 |
| **Total - Lost Opportunity** | **$ 12,402,540** | **$ 4,184,555** | **$ 2,829,007** | **$ 2,151,328** | **$ 2,011,328** | **$ 23,578,758** |
| **C&I LARGE RETROFIT** | | | | | | |
| Energy Opportunities | $ 35,615,415 | $ 7,987,195 | $ 5,096,626 | $ 1,262,498 | $ 1,327,765 | $ 51,289,499 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 3,315,763 | $ 1,224,171 | $ 629,672 | $ 733,821 | $ 574,069 | $ 6,477,495 |
| **Total - C&I Large Retrofit** | **$ 38,931,178** | **$ 9,211,366** | **$ 5,726,298** | **$ 1,996,318** | **$ 1,901,834** | **$ 57,766,994** |
| Small Business Energy Advantage | $ 15,142,544 | $ 4,092,233 | $ 749,000 | $ 334,736 | $ 286,415 | $ 20,604,928 |
| **Subtotal C&I** | **$ 66,476,261** | **$ 17,488,154** | **$ 9,304,305** | **$ 4,482,383** | **$ 4,199,577** | **$ 101,950,679** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | |
| Educate the Public | $ 656,954 | $ 294,279 | $ 63,267 | $ 65,796 | $ 65,796 | $ 1,146,092 |
| Customer Engagement | $ 1,539,419 | $ - | $ 211,479 | $ - | $ - | $ 1,750,898 |
| Educate the Students | $ 274,562 | $ 116,992 | $ 22,202 | $ 22,859 | $ 22,859 | $ 459,474 |
| Educate the Workforce | $ 166,125 | $ 47,633 | $ 13,146 | $ 13,671 | $ 13,671 | $ 254,246 |
| **Subtotal Education & Engagement** | **$ 2,637,061** | **$ 458,904** | **$ 310,093** | **$ 102,326** | **$ 102,326** | **$ 3,610,710** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | |
| Residential Loan Program (Includes ECLF and OBR) | $ 1,500,000 | $ 148,004 | $ 80,075 | $ 86,292 | $ 86,292 | $ 1,900,662 |
| C&I Financing Support | $ 17,569,775 | $ - | $ 86,332 | $ 20,000 | $ 75,000 | $ 17,751,107 |
| Time Of Use | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ 168,878 | $ 151,250 | $ 50,000 | $ 50,000 | $ 50,000 | $ 470,128 |
| **Subtotal Programs/Requirements** | **$ 19,238,653** | **$ 299,254** | **$ 216,407** | **$ 156,292** | **$ 211,292** | **$ 20,121,898** |
| **OTHER - LOAD MANAGEMENT** | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 837,411 | $ 852,299 | $ - | $ - | $ - | $ 1,689,710 |
| C&I Demand Response | $ 400,452 | $ 151,267 | $ - | $ - | $ - | $ 551,719 |
| **Subtotal Load Management** | **$ 1,237,863** | **$ 1,003,566** | **$ -** | **$ -** | **$ -** | **$ 2,241,429** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | |
| Administration | $ 622,665 | $ 258,752 | $ 114,208 | $ 150,463 | $ 150,465 | $ 1,296,554 |
| Marketing Plan | $ 131,670 | $ 33,440 | $ 14,630 | $ 14,630 | $ 14,630 | $ 209,000 |
| Planning | $ 480,234 | $ 134,434 | $ 74,992 | $ 96,583 | $ 96,583 | $ 882,827 |
| Evaluation Measurement and Verification | $ 1,023,226 | $ 255,806 | $ 217,523 | $ 217,523 | $ 217,523 | $ 1,931,601 |
| Evaluation Administrator | $ 186,825 | $ 44,800 | $ 18,667 | $ 18,667 | $ 18,667 | $ 287,626 |
| Information Technology | $ 1,627,322 | $ 452,520 | $ 133,320 | $ 137,531 | $ 137,532 | $ 2,488,225 |
| Energy Efficiency Board Consultants | $ 318,423 | $ 76,544 | $ 31,893 | $ 31,893 | $ 31,893 | $ 490,646 |
| Audits - Financial and Operational | $ 60,000 | $ 24,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 114,000 |
| Performance Management Incentive (PMI) | $ 6,488,942 | $ 1,463,958 | $ 886,597 | $ 697,546 | $ 686,163 | $ 10,223,206 |
| **Admin/Planning Expenditures** | **$ 10,939,307** | **$ 2,744,254** | **$ 1,501,831** | **$ 1,374,837** | **$ 1,363,456** | **$ 17,923,685** |
| **TOTAL** | **$ 151,252,912** | **$ 34,141,692** | **$ 20,649,315** | **$ 16,259,133** | **$ 15,994,790** | **$ 238,297,842** |

## 2020 Combined Budgets (Electric and Natural Gas)

| Statewide EE BUDGET | 2020 Eversource CT Electric Proposed Budget 03/01/19 | 2020 UI Proposed Budget 03/01/19 | 2020 Eversource CT Gas Proposed Budget 03/01/19 | 2020 CNG Proposed Budget 3/1/2019 | 2020 SCG Proposed Budget 3/1/2019 | 2020 Statewide Combined Total 3/1/2019 |
|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | |
| Residential Retail Products | $ 6,000,000 | $ 2,001,074 | $ - | $ - | $ - | $ 8,001,074 |
| **Total - Consumer Products** | **$ 6,000,000** | **$ 2,001,074** | **$ -** | **$ -** | **$ -** | **$ 8,001,074** |
| New Construction, Additions & Major Renovations | $ 2,700,000 | $ 625,335 | $ 939,541 | $ 695,034 | $ 958,519 | $ 5,918,429 |
| Home Energy Solutions - Core Services | $ 20,906,676 | $ 3,752,014 | $ 2,312,732 | $ 3,092,712 | $ 1,742,346 | $ 31,806,480 |
| Home Energy Solutions - HVAC, Water Heaters | $ 4,000,000 | $ 1,500,805 | $ 2,659,505 | $ 1,804,983 | $ 3,138,217 | $ 13,103,510 |
| HES Income Eligible | $ 16,500,000 | $ 4,377,349 | $ 4,346,973 | $ 4,096,485 | $ 3,043,129 | $ 32,363,936 |
| Residential Behavior | $ 3,100,000 | $ 250,134 | $ 364,920 | $ 153,445 | $ 159,643 | $ 4,028,142 |
| **Subtotal Residential** | **$ 53,206,676** | **$ 12,506,712** | **$ 10,623,670** | **$ 9,842,659** | **$ 9,041,855** | **$ 95,221,571** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | |
| Energy Conscious Blueprint | $ 12,565,032 | $ 4,396,007 | $ 4,673,397 | $ 2,059,924 | $ 1,722,875 | $ 25,417,235 |
| **Total - Lost Opportunity** | **$ 12,565,032** | **$ 4,396,007** | **$ 4,673,397** | **$ 2,059,924** | **$ 1,722,875** | **$ 25,417,235** |
| **C&I LARGE RETROFIT** | | | | | | |
| Energy Opportunities | $ 39,670,751 | $ 7,955,445 | $ 4,356,861 | $ 1,176,759 | $ 1,131,751 | $ 54,291,568 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 3,485,670 | $ 1,237,571 | $ 715,324 | $ 682,351 | $ 507,317 | $ 6,628,231 |
| **Total - C&I Large Retrofit** | **$ 43,156,421** | **$ 8,990,526** | **$ 5,072,185** | **$ 1,859,110** | **$ 1,639,068** | **$ 60,717,309** |
| Small Business Energy Advantage | $ 16,697,946 | $ 4,090,569 | $ 850,000 | $ 318,826 | $ 248,811 | $ 22,206,152 |
| **Subtotal C&I** | **$ 72,419,399** | **$ 17,477,102** | **$ 10,595,582** | **$ 4,237,860** | **$ 3,610,753** | **$ 108,340,696** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | |
| Educate the Public | $ 657,285 | $ 299,292 | $ 63,168 | $ 65,796 | $ 65,796 | $ 1,151,337 |
| Customer Engagement | $ 1,968,000 | $ 475,000 | $ 270,612 | $ 150,000 | $ 150,000 | $ 3,013,612 |
| Educate the Students | $ 412,236 | $ 101,242 | $ 43,340 | $ 45,164 | $ 45,164 | $ 647,146 |
| Educate the Workforce | $ 500,000 | $ 37,943 | $ 33,620 | $ 35,034 | $ 35,034 | $ 641,629 |
| **Subtotal Education & Engagement** | **$ 3,537,521** | **$ 913,477** | **$ 410,739** | **$ 295,994** | **$ 295,994** | **$ 5,453,725** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | |
| Residential Loan Program (Includes ECLF and OBR) | $ 458,365 | $ 149,381 | $ 80,075 | $ 86,292 | $ 86,292 | $ 860,405 |
| C&I Financing Support | $ 2,528,933 | $ - | $ 78,256 | $ 20,000 | $ 75,000 | $ 2,702,189 |
| Time Of Use | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ 164,016 | $ 151,250 | $ 50,000 | $ 50,000 | $ 50,000 | $ 465,266 |
| **Subtotal Programs/Requirements** | **$ 3,151,315** | **$ 300,630** | **$ 208,331** | **$ 156,292** | **$ 211,292** | **$ 4,027,860** |
| **OTHER - LOAD MANAGEMENT** | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 2,500,000 | $ 1,353,839 | $ - | $ - | $ - | $ 3,853,839 |
| C&I Demand Response | $ 1,228,154 | $ 214,662 | $ - | $ - | $ - | $ 1,442,816 |
| **Subtotal Load Management** | **$ 3,728,155** | **$ 1,568,501** | **$ -** | **$ -** | **$ -** | **$ 5,296,656** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | |
| Administration | $ 902,597 | $ 265,833 | $ 114,209 | $ 154,854 | $ 154,855 | $ 1,592,349 |
| Marketing Plan | $ 300,000 | $ 89,100 | $ 53,000 | $ 31,100 | $ 31,100 | $ 504,300 |
| Planning | $ 703,170 | $ 137,367 | $ 74,993 | $ 99,480 | $ 99,480 | $ 1,114,491 |
| Evaluation Measurement and Verification | $ 1,920,000 | $ 480,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 3,000,000 |
| Evaluation Administrator | $ 192,000 | $ 48,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 300,000 |
| Information Technology | $ 1,859,385 | $ 455,300 | $ 133,321 | $ 139,037 | $ 139,038 | $ 2,726,082 |
| Energy Efficiency Board Consultants | $ 416,000 | $ 104,000 | $ 43,333 | $ 43,333 | $ 43,333 | $ 649,999 |
| Audits - Financial and Operational | $ 60,000 | $ 24,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 114,000 |
| Performance Management Incentive (PMI) | $ 6,377,770 | $ 1,547,843 | $ 1,008,623 | $ 682,077 | $ 620,297 | $ 10,236,610 |
| **Admin/Planning Expenditures** | **$ 12,730,923** | **$ 3,151,444** | **$ 1,657,479** | **$ 1,379,882** | **$ 1,318,103** | **$ 20,237,831** |
| **TOTAL** | **$ 148,773,988** | **$ 36,120,356** | **$ 23,495,801** | **$ 15,912,687** | **$ 14,477,997** | **$ 238,780,829** |

## 2021 Combined Budgets (Electric and Natural Gas)

| Statewide EE BUDGET | 2021 Eversource CT Electric Proposed Budget 03/01/19 | 2021 UI Proposed Budget 03/01/19 | 2021 Eversource CT Gas Proposed Budget 03/01/19 | 2021 CNG Proposed Budget 3/1/2019 | 2021 SCG Proposed Budget 3/1/2019 | 2021 Statewide Combined Total 3/1/2019 |
|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | |
| Residential Retail Products | $ 5,000,000 | $ 1,786,803 | $ - | $ - | $ - | $ 6,786,803 |
| **Total - Consumer Products** | **$ 5,000,000** | **$ 1,786,803** | **$ -** | **$ -** | **$ -** | **$ 6,786,803** |
| New Construction, Additions & Major Renovations | $ 2,800,000 | $ 595,600 | $ 953,286 | $ 727,207 | $ 935,682 | $ 6,011,775 |
| Home Energy Solutions - Core Services | $ 19,968,292 | $ 3,573,606 | $ 2,363,188 | $ 3,309,076 | $ 1,702,007 | $ 30,916,170 |
| Home Energy Solutions - HVAC, Water Heaters | $ 3,750,000 | $ 1,429,442 | $ 2,678,330 | $ 1,884,061 | $ 3,128,519 | $ 12,870,352 |
| HES Income Eligible | $ 16,000,000 | $ 4,169,206 | $ 4,387,998 | $ 4,255,325 | $ 3,015,868 | $ 31,828,396 |
| Residential Behavior | $ 3,100,000 | $ 357,361 | $ 370,258 | $ 160,533 | $ 154,881 | $ 4,143,032 |
| **Subtotal Residential** | **$ 50,618,292** | **$ 11,912,018** | **$ 10,753,060** | **$ 10,336,201** | **$ 8,936,957** | **$ 92,556,529** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | |
| Energy Conscious Blueprint | $ 12,918,272 | $ 4,082,985 | $ 4,676,277 | $ 2,095,137 | $ 1,743,640 | $ 25,516,312 |
| **Total - Lost Opportunity** | **$ 12,918,272** | **$ 4,082,985** | **$ 4,676,277** | **$ 2,095,137** | **$ 1,743,640** | **$ 25,516,312** |
| **C&I LARGE RETROFIT** | | | | | | |
| Energy Opportunities | $ 37,002,063 | $ 7,366,718 | $ 4,359,404 | $ 1,192,975 | $ 1,146,268 | $ 51,067,427 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 3,547,310 | $ 1,147,785 | $ 725,684 | $ 690,456 | $ 512,992 | $ 6,624,226 |
| **Total - C&I Large Retrofit** | **$ 40,549,372** | **$ 8,514,503** | **$ 5,085,088** | **$ 1,883,431** | **$ 1,659,259** | **$ 57,691,653** |
| Small Business Energy Advantage | $ 17,279,390 | $ 3,799,435 | $ 950,000 | $ 322,674 | $ 252,114 | $ 22,603,613 |
| **Subtotal C&I** | **$ 70,747,035** | **$ 16,396,922** | **$ 10,711,364** | **$ 4,301,242** | **$ 3,655,014** | **$ 105,811,577** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | |
| Educate the Public | $ 472,084 | $ 304,455 | $ 66,183 | $ 65,796 | $ 65,796 | $ 974,313 |
| Customer Engagement | $ 1,968,000 | $ 475,000 | $ 282,000 | $ 150,000 | $ 150,000 | $ 3,025,000 |
| Educate the Students | $ 412,236 | $ 102,752 | $ 45,164 | $ 45,164 | $ 45,164 | $ 650,480 |
| Educate the Workforce | $ 750,000 | $ 38,509 | $ 35,034 | $ 35,034 | $ 35,034 | $ 893,610 |
| **Subtotal Education & Engagement** | **$ 3,602,320** | **$ 920,715** | **$ 428,381** | **$ 295,994** | **$ 295,994** | **$ 5,543,404** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | |
| Residential Loan Program (Includes ECLF and OBR) | $ 453,364 | $ 150,799 | $ 84,523 | $ 86,292 | $ 86,292 | $ 861,270 |
| C&I Financing Support | $ 2,501,339 | $ - | $ 93,905 | $ 20,000 | $ 75,000 | $ 2,690,245 |
| Time Of Use | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ 162,227 | $ 151,250 | $ 50,000 | $ 50,000 | $ 50,000 | $ 463,477 |
| **Subtotal Programs/Requirements** | **$ 3,116,930** | **$ 302,049** | **$ 228,428** | **$ 156,292** | **$ 211,292** | **$ 4,014,991** |
| **OTHER - LOAD MANAGEMENT** | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 4,800,000 | $ 2,524,099 | $ - | $ - | $ - | $ 7,324,099 |
| C&I Demand Response | $ 1,563,771 | $ 214,662 | $ - | $ - | $ - | $ 1,778,433 |
| **Subtotal Load Management** | **$ 6,363,771** | **$ 2,738,761** | **$ -** | **$ -** | **$ -** | **$ 9,102,532** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | |
| Administration | $ 902,597 | $ 273,127 | $ 120,553 | $ 159,218 | $ 159,219 | $ 1,614,714 |
| Marketing Plan | $ 400,000 | $ 121,400 | $ 70,480 | $ 40,100 | $ 40,100 | $ 672,081 |
| Planning | $ 703,170 | $ 140,393 | $ 79,158 | $ 102,465 | $ 102,465 | $ 1,127,651 |
| Evaluation Measurement and Verification | $ 1,920,000 | $ 480,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 3,000,000 |
| Evaluation Administrator | $ 192,000 | $ 48,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 300,000 |
| Information Technology | $ 1,839,097 | $ 458,164 | $ 140,726 | $ 140,589 | $ 140,590 | $ 2,719,165 |
| Energy Efficiency Board Consultants | $ 416,000 | $ 104,000 | $ 43,333 | $ 43,333 | $ 43,333 | $ 649,999 |
| Audits - Financial and Operational | $ 60,000 | $ 24,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 114,000 |
| Performance Management Incentive (PMI) | $ 6,309,595 | $ 1,518,460 | $ 1,022,947 | $ 689,487 | $ 627,482 | $ 10,167,970 |
| **Admin/Planning Expenditures** | **$ 12,742,459** | **$ 3,167,543** | **$ 1,707,198** | **$ 1,405,192** | **$ 1,343,188** | **$ 20,365,579** |
| **TOTAL** | **$ 147,190,807** | **$ 35,438,008** | **$ 23,828,432** | **$ 16,084,757** | **$ 14,644,852** | **$ 237,186,856** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2019)

| 2019 | Costs ($000) Electric | | | Costs ($000) Gas | | Benefits ($000) | | | Benefit Cost Ratios | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test |
| **Residential** | | | | | | | | | | | |
| Retail Products | 10,571 | 10,571 | 20,181 | | | 27,006 | 23,024 | 33,408 | 2.55 | 2.18 | 1.66 |
| New Construction | 2,492 | 3,252 | 7,700 | 2,641 | 7,043 | 20,136 | 27,924 | 41,055 | 3.92 | 4.74 | 2.78 |
| Home Energy Solutions | 11,313 | 21,556 | 27,444 | 7,178 | 8,978 | 48,808 | 111,762 | 153,439 | 2.64 | 3.89 | 4.21 |
| HVAC | 5,447 | 5,447 | 15,299 | 7,760 | 23,620 | 23,248 | 25,541 | 37,232 | 1.76 | 1.93 | 0.96 |
| HES - Income Eligible | 14,768 | 20,223 | 20,476 | 11,253 | 11,338 | 39,396 | 57,390 | 84,587 | 1.51 | 1.82 | 2.66 |
| Behavior | 1,821 | 1,821 | 1,821 | 746 | 746 | 8,233 | 8,233 | 10,910 | 3.21 | 3.21 | 4.25 |
| **Subtotal: Residential** | 46,413 | 62,871 | 92,922 | 29,578 | 51,725 | 166,827 | 253,874 | 360,631 | 2.20 | 2.75 | 2.49 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | 16,587 | 16,587 | 22,553 | 6,992 | 9,604 | 99,538 | 98,882 | 129,522 | 4.22 | 4.19 | 4.03 |
| Energy Opportunities | 43,603 | 43,603 | 100,703 | 7,687 | 19,534 | 217,270 | 214,635 | 277,892 | 4.24 | 4.18 | 2.31 |
| BES | 4,540 | 4,540 | 9,116 | 1,251 | 2,647 | 18,627 | 18,592 | 30,215 | 3.22 | 3.21 | 2.57 |
| Small Business | 19,235 | 19,235 | 37,862 | 2,057 | 4,230 | 99,442 | 97,781 | 126,303 | 4.67 | 4.59 | 3.00 |
| **Subtotal: C&I** | 83,964 | 83,964 | 170,234 | 17,986 | 36,014 | 434,878 | 429,889 | 563,932 | 4.27 | 4.22 | 2.73 |
| **Residential DR** | 837 | 837 | 837 | | | | 429,889 | | | | |
| **C&I DR** | 400 | 400 | 400 | | | | | | | | |
| **Subtotal: DR** | $1,238 | $1,238 | $1,238 | | | | | | | | |
| **Subtotal: Other** | 37,321 | 37,321 | 37,321 | 5,339 | 5,339 | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **168,937** | **185,395** | **301,714** | **52,903** | **93,078** | **601,705** | **683,763** | **924,563** | **2.71** | **2.87** | **2.34** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2019) continued

| 2019 | Electric Savings | | | Natural Gas Savings | | | Oil/Propane Savings | | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | **Residential** | | | | | | | | | | | | |
| Retail Products | 32,685 | 174,821 | 4,241 | | | | -256,546 | -1,151,877 | -9,875 | -49,375 | 75,040 | 11,355 | 65,034 |
| New Construction | 4,782 | 75,341 | 1,060 | 382,535 | 9,563,368 | 3,528 | 0 | 0 | 142,326 | 3,665,738 | 68,679 | 6,095 | 143,029 |
| Home Energy Solutions | 24,930 | 207,271 | 4,911 | 637,825 | 12,886,043 | 6,165 | 914,752 | 20,056,630 | 79,329 | 1,834,917 | 284,806 | 29,032 | 479,318 |
| HVAC | 4,280 | 71,644 | 1,059 | 701,177 | 14,005,784 | 6,300 | 14,890 | 193,569 | 22,613 | 293,974 | 90,885 | 7,408 | 138,479 |
| HES - Income Eligible | 22,646 | 199,977 | 2,350 | 881,037 | 18,605,789 | 8,644 | 309,816 | 6,990,075 | -1,575 | -36,827 | 210,752 | 20,059 | 314,082 |
| Behavior | 15,395 | 39,765 | 1,757 | 342,104 | 766,968 | 1,387 | 0 | 0 | 0 | 0 | 87,730 | 10,052 | 25,263 |
| **Subtotal: Residential** | 104,719 | 768,818 | 15,378 | 2,944,678 | 55,827,953 | 26,024 | 982,912 | 26,088,396 | 232,819 | 5,708,427 | 817,891 | 84,001 | 1,165,205 |
| **Commercial & Industrial** | **Commercial & Industrial** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 36,817 | 562,592 | 5,896 | 960,971 | 13,898,167 | 10,734 | 0 | 0 | 0 | 0 | 224,503 | 24,054 | 362,392 |
| Energy Opportunities | 106,334 | 1,233,504 | 14,000 | 1,444,968 | 16,660,275 | 8,873 | 0 | 0 | 0 | 0 | 511,499 | 60,353 | 698,768 |
| BES | 11,358 | 68,271 | 1,560 | 768,181 | 6,053,356 | 5,973 | 0 | 0 | 0 | 0 | 117,799 | 12,155 | 84,567 |
| Small Business | 46,230 | 566,301 | 6,755 | 1,061,626 | 7,858,210 | 4,056 | 0 | 0 | 0 | 0 | 266,978 | 28,139 | 313,833 |
| **Subtotal: C&I** | 200,739 | 2,430,669 | 28,211 | 4,235,746 | 44,470,008 | 29,637 | 0 | 0 | 0 | 0 | 1,120,980 | 124,701 | 1,459,560 |
| **Residential DR** | | | 1,005 | | | | | | | | | | |
| **C&I DR** | | | 3,010 | | | | | | | | | | |
| **Subtotal: DR** | | | 4,015 | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **TOTAL** | **305,457** | **3,199,487** | **47,604** | **7,180,424** | **100,297,961** | **55,661** | **982,912** | **26,088,396** | **232,819** | **5,708,427** | **1,938,870** | **208,702** | **2,624,766** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2020)

| 2020 | Costs ($000) | | | Costs ($000) Gas | | Benefits ($000) | | | Benefit Cost Ratios | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test |
| **Residential** | | | | | | | | | | | |
| Retail Products | 7,253 | 7,253 | 16,863 | | | 16,407 | 14,937 | 20,800 | 2.26 | 2.06 | 1.23 |
| New Construction | 2,773 | 3,408 | 7,856 | 2,593 | 6,653 | 15,928 | 23,153 | 21,194 | 2.97 | 3.86 | 1.46 |
| Home Energy Solutions | 11,357 | 25,892 | 31,779 | 7,148 | 8,780 | 51,517 | 120,452 | 142,732 | 2.78 | 3.65 | 3.52 |
| HVAC | 4,902 | 4,902 | 14,754 | 7,603 | 22,624 | 29,032 | 31,866 | 24,800 | 2.32 | 2.55 | 0.66 |
| HES - Income Eligible | 14,776 | 20,409 | 20,662 | 11,487 | 11,571 | 33,562 | 51,299 | 50,286 | 1.28 | 1.61 | 1.56 |
| Behavior | 3,574 | 3,574 | 3,598 | 678 | 678 | 8,837 | 8,837 | 9,962 | 2.08 | 2.08 | 2.33 |
| **Subtotal: Residential** | 44,635 | 65,438 | 95,512 | 29,508 | 50,306 | 155,284 | 250,543 | 269,775 | 2.09 | 2.64 | 1.85 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | 16,864 | 16,864 | 23,020 | 8,456 | 10,960 | 100,028 | 99,811 | 107,157 | 3.95 | 3.94 | 3.15 |
| Energy Opportunities | 47,451 | 47,451 | 104,507 | 6,665 | 18,038 | 225,577 | 223,436 | 267,082 | 4.17 | 4.13 | 2.18 |
| BES | 4,696 | 4,696 | 8,439 | 1,283 | 2,602 | 23,304 | 23,323 | 25,855 | 3.90 | 3.90 | 2.34 |
| Small Business | 20,698 | 20,698 | 37,455 | 2,040 | 4,102 | 88,025 | 86,800 | 100,418 | 3.87 | 3.82 | 2.42 |
| **Subtotal: C&I** | 89,710 | 89,710 | 173,420 | 18,444 | 35,702 | 436,934 | 433,370 | 500,512 | 4.04 | 4.01 | 2.39 |
| **Residential DR** | 2,500 | 2,500 | 2,500 | | | | 433,370 | | | | |
| **C&I DR** | 1,228 | 1,228 | 1,228 | | | | | | | | |
| **Subtotal: DR** | $3,728 | $3,728 | $3,728 | | | | | | | | |
| **Subtotal: Other** | 26,019 | 26,019 | 26,019 | 5,934 | 5,934 | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **164,091** | **184,894** | **294,951** | **53,886** | **91,943** | **592,219** | **683,913** | **770,286** | **2.72** | **2.86** | **1.99** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2020) continued

| 2020 | Electric Savings | | | Natural Gas Savings | | | Oil/Propane Savings | | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | | | | | | | **Residential** | | | | | | |
| Retail Products | 22,118 | 104,985 | 2,805 | | | | -151,009 | -410,823 | -6,358 | -30,193 | 53,944 | 9,739 | 86,022 |
| New Construction | 2,949 | 63,979 | 589 | 319,774 | 7,994,343 | 2,965 | 0 | 0 | 101,423 | 2,575,159 | 52,228 | 5,337 | 121,609 |
| Home Energy Solutions | 20,908 | 182,558 | 4,962 | 776,282 | 15,782,726 | 7,018 | 985,283 | 20,407,466 | 113,120 | 2,405,485 | 298,197 | 27,899 | 467,192 |
| HVAC | 4,946 | 79,893 | 1,641 | 695,503 | 13,890,973 | 6,253 | 30,872 | 401,330 | 46,885 | 609,503 | 97,006 | 9,680 | 144,287 |
| HES - Income Eligible | 21,058 | 145,487 | 2,131 | 896,656 | 18,833,555 | 8,774 | 323,294 | 6,485,460 | 6,937 | 154,581 | 209,586 | 28,508 | 378,916 |
| Behavior | 19,037 | 48,117 | 1,655 | 382,160 | 861,326 | 1,820 | 0 | 0 | 0 | 0 | 104,279 | 9,911 | 24,478 |
| **Subtotal: Residential** | 91,016 | 625,019 | 13,783 | 3,070,375 | 57,362,923 | 26,830 | 1,188,439 | 26,883,433 | 262,007 | 5,714,535 | 815,242 | 91,073 | 1,222,506 |
| **Commercial & Industrial** | | | 13,783 | | | | | | | | | | |
| Energy Conscious Blueprint | 35,963 | 549,583 | 5,781 | 1,127,459 | 16,618,799 | 11,101 | 0 | 0 | 0 | 0 | 238,720 | 22,517 | 320,818 |
| Energy Opportunities | 112,209 | 1,300,651 | 14,795 | 1,119,159 | 12,903,745 | 6,897 | 0 | 0 | 0 | 0 | 498,017 | 55,669 | 646,096 |
| BES | 14,582 | 94,134 | 2,532 | 812,103 | 6,256,653 | 5,386 | 0 | 0 | 0 | 0 | 133,319 | 30,697 | 319,268 |
| Small Business | 42,005 | 521,788 | 5,548 | 1,069,623 | 7,117,512 | 4,130 | 0 | 0 | 0 | 0 | 253,384 | 22,547 | 247,733 |
| **Subtotal: C&I** | 204,758 | 2,466,156 | 28,657 | 4,128,344 | 42,896,709 | 27,514 | 0 | 0 | 0 | 0 | 1,123,440 | 131,431 | 1,533,914 |
| **Residential DR** | | | 3,000 | | | | | | | | | | |
| **C&I DR** | | | 8,950 | | | | | | | | | | |
| **Subtotal: DR** | | | 11,950 | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **TOTAL** | **295,774** | **3,091,175** | **54,390** | **7,198,719** | **100,259,632** | **54,344** | **1,188,439** | **26,883,433** | **262,007** | **5,714,535** | **1,938,681** | **222,504** | **2,756,420** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2021)

| 2021 | Costs ($000) | | | Costs ($000) Gas | | Benefits ($000) | | | Benefit Cost Ratios | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test |
| **Residential** | | | | | | | | | | | |
| Retail Products | 6,787 | 6,787 | 16,397 | | | 9,163 | 10,096 | 14,000 | 1.35 | 1.49 | 0.85 |
| New Construction | 2,878 | 3,396 | 7,844 | 2,622 | 6,700 | 16,607 | 24,952 | 33,631 | 3.02 | 4.15 | 2.31 |
| Home Energy Solutions | 10,028 | 23,542 | 29,429 | 7,245 | 8,539 | 44,870 | 121,667 | 165,528 | 2.60 | 3.95 | 4.36 |
| HVAC | 5,179 | 5,179 | 15,031 | 7,652 | 22,729 | 27,018 | 29,790 | 41,256 | 2.11 | 2.32 | 1.09 |
| HES - Income Eligible | 14,220 | 20,169 | 20,422 | 11,615 | 11,700 | 29,623 | 50,357 | 75,423 | 1.15 | 1.58 | 2.35 |
| Behavior | 3,457 | 3,457 | 3,513 | 685 | 685 | 7,712 | 7,712 | 10,365 | 1.86 | 1.86 | 2.47 |
| **Subtotal: Residential** | 42,550 | 62,530 | 92,636 | 29,818 | 50,353 | 134,994 | 244,575 | 340,203 | 1.87 | 2.65 | 2.38 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | 17,001 | 17,001 | 22,843 | 8,515 | 11,038 | 93,848 | 93,271 | 124,133 | 3.68 | 3.66 | 3.66 |
| Energy Opportunities | 44,369 | 44,369 | 100,823 | 6,699 | 18,112 | 205,855 | 203,286 | 264,086 | 4.03 | 3.98 | 2.22 |
| BES | 4,695 | 4,695 | 8,346 | 1,300 | 2,625 | 22,912 | 22,867 | 36,286 | 3.82 | 3.81 | 3.31 |
| Small Business | 21,079 | 21,079 | 37,747 | 2,153 | 4,228 | 86,961 | 85,456 | 112,464 | 3.74 | 3.68 | 2.68 |
| **Subtotal:C&I** | 87,144 | 87,144 | 169,758 | 18,668 | 36,003 | 409,576 | 404,880 | 536,969 | 3.87 | 3.83 | 2.61 |
| **Residential DR** | 4,800 | 4,800 | 4,800 | | | | | | | | |
| **C&I DR** | 1,564 | 1,564 | 1,564 | | | | | | | | |
| **Subtotal: DR** | $6,364 | $6,364 | $6,364 | | | | | | | | |
| **Subtotal: Other** | 26,591 | 26,591 | 26,591 | 6,072 | 6,072 | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **162,648** | **182,629** | **295,349** | **54,558** | **92,428** | **544,569** | **649,455** | **877,172** | **2.51** | **2.74** | **2.26** |

## Table B – Statewide Electric and Natural Gas Costs and Benefits (2021) continued

| 2021 | Electric Savings | | | Natural Gas Savings | | | Oil/Propane Savings | | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Statewide | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | **Residential** | | | | | | | | | | | | |
| Retail Products | 12,446 | 63,707 | 1,449 | | | | -39,895 | 222,074 | -3,239 | -14,623 | 36,637 | 5,448 | 36,168 |
| New Construction | 2,966 | 68,876 | 601 | 323,909 | 8,097,728 | 3,003 | 0 | 0 | 113,271 | 2,854,697 | 53,795 | 4,755 | 116,889 |
| Home Energy Solutions | 11,671 | 151,100 | 3,951 | 643,867 | 12,961,752 | 6,209 | 1,110,518 | 21,625,022 | 132,483 | 2,579,140 | 272,193 | 26,574 | 489,352 |
| HVAC | 4,622 | 74,658 | 1,410 | 699,595 | 13,972,657 | 6,290 | 28,884 | 375,496 | 43,867 | 570,269 | 95,771 | 8,195 | 149,750 |
| HES - Income Eligible | 19,491 | 120,176 | 1,916 | 898,930 | 18,903,061 | 8,019 | 308,345 | 6,693,923 | 9,137 | 196,919 | 202,601 | 18,920 | 285,834 |
| Behavior | 17,037 | 43,051 | 1,427 | 354,160 | 790,402 | 1,540 | 0 | 0 | 0 | 0 | 94,574 | 8,727 | 21,479 |
| **Subtotal: Residential** | 68,233 | 521,568 | 10,755 | 2,920,461 | 54,725,600 | 25,061 | 1,407,852 | 28,916,515 | 295,518 | 6,186,403 | 755,571 | 72,620 | 1,099,471 |
| **Commercial & Industrial** | **Commercial & Industrial** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 33,989 | 519,239 | 5,466 | 1,060,156 | 15,619,580 | 10,472 | 0 | 0 | 0 | 0 | 225,060 | 24,164 | 363,837 |
| Energy Opportunities | 103,750 | 1,201,780 | 13,551 | 1,047,456 | 12,101,560 | 6,461 | 0 | 0 | 0 | 0 | 461,779 | 56,931 | 658,549 |
| BES | 14,209 | 92,225 | 2,632 | 728,652 | 5,636,894 | 4,984 | 0 | 0 | 0 | 0 | 123,460 | 12,284 | 86,198 |
| Small Business | 40,997 | 528,088 | 5,314 | 890,143 | 6,745,620 | 3,566 | 0 | 0 | 0 | 0 | 231,477 | 25,787 | 297,001 |
| **Subtotal:C&I** | 192,945 | 2,341,331 | 26,963 | 3,726,407 | 40,103,655 | 25,483 | 0 | 0 | 0 | 0 | 1,041,775 | 119,165 | 1,405,585 |
| **Residential DR** | | | 5,760 | | | | | | | | | | |
| **C&I DR** | | | 10,950 | | | | | | | | | | |
| **Subtotal: DR** | | | 16,710 | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **TOTAL** | **261,178** | **2,862,899** | **54,428** | **6,646,868** | **94,829,255** | **50,544** | **1,407,852** | **28,916,515** | **295,518** | **6,186,403** | **1,797,346** | **191,785** | **2,505,057** |

# STATEWIDE ELECTRIC TABLES

## COMBINED ELECTRIC TABLE A1 (2019–2021)

| Eversource CT Electric/UI EE BUDGET | 2019 Eversource CT Electric Proposed Budget 03/01/19 | 2019 UI Proposed Budget 03/01/19 | 2019 Eversource CT Electric/UI Combined Total 03/01/19 | 2020 Eversource CT Electric Proposed Budget 03/01/19 | 2020 UI Proposed Budget 03/01/19 | 2020 Eversource CT Electric/UI Combined Total 03/01/19 | 2021 Eversource CT Electric Proposed Budget 03/01/19 | 2021 UI Proposed Budget 03/01/19 | 2021 Eversource CT Electric/UI Combined Total 03/01/19 |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| Residential Retail Products | $ 8,505,986 | $ 2,065,085 | $ 10,571,071 | $ 6,000,000 | $ 2,001,074 | $ 8,001,074 | $ 5,000,000 | $ 1,786,803 | $ 6,786,803 |
| **Total - Consumer Products** | **$ 8,505,986** | **$ 2,065,085** | **$ 10,571,071** | **$ 6,000,000** | **$ 2,001,074** | **$ 8,001,074** | **$ 5,000,000** | **$ 1,786,803** | **$ 6,786,803** |
| New Construction, Additions & Major Renovations | $ 2,644,901 | $ 607,378 | $ 3,252,279 | $ 2,700,000 | $ 625,335 | $ 3,325,335 | $ 2,800,000 | $ 595,600 | $ 3,395,600 |
| Home Energy Solutions - Core Services | $ 17,912,103 | $ 3,644,267 | $ 21,556,370 | $ 20,906,676 | $ 3,752,014 | $ 24,658,690 | $ 19,968,292 | $ 3,573,606 | $ 23,541,898 |
| Home Energy Solutions - HVAC, Water Heaters | $ 3,989,546 | $ 1,457,707 | $ 5,447,253 | $ 4,000,000 | $ 1,500,805 | $ 5,500,805 | $ 3,750,000 | $ 1,429,442 | $ 5,179,442 |
| HES-Income Eligible | $ 15,971,230 | $ 4,251,647 | $ 20,222,877 | $ 16,500,000 | $ 4,377,349 | $ 20,877,349 | $ 16,000,000 | $ 4,169,206 | $ 20,169,206 |
| Residential Behavior | $ 1,700,000 | $ 121,476 | $ 1,821,476 | $ 3,100,000 | $ 250,134 | $ 3,350,134 | $ 3,100,000 | $ 357,361 | $ 3,457,361 |
| **Subtotal: Residential** | **$ 50,723,766** | **$ 12,147,561** | **$ 62,871,327** | **$ 53,206,676** | **$ 12,506,712** | **$ 65,713,388** | **$ 50,618,292** | **$ 11,912,018** | **$ 62,530,310** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 12,402,540 | $ 4,184,555 | $ 16,587,095 | $ 12,565,032 | $ 4,396,007 | $ 16,961,039 | $ 12,918,272 | $ 4,082,985 | $ 17,001,257 |
| **Total - Lost Opportunity** | **$ 12,402,540** | **$ 4,184,555** | **$ 16,587,095** | **$ 12,565,032** | **$ 4,396,007** | **$ 16,961,039** | **$ 12,918,272** | **$ 4,082,985** | **$ 17,001,257** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 35,615,415 | $ 7,987,195 | $ 43,602,610 | $ 39,670,751 | $ 7,955,445 | $ 47,626,197 | $ 37,002,063 | $ 7,366,718 | $ 44,368,780 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 3,315,763 | $ 1,224,171 | $ 4,539,934 | $ 3,485,670 | $ 1,237,571 | $ 4,723,240 | $ 3,547,310 | $ 1,147,785 | $ 4,695,094 |
| **Total - C&I Large Retrofit** | **$ 38,931,178** | **$ 9,211,366** | **$ 48,142,544** | **$ 43,156,421** | **$ 9,193,016** | **$ 52,349,437** | **$ 40,549,372** | **$ 8,514,503** | **$ 49,063,875** |
| Small Business Energy Advantage | $ 15,142,544 | $ 4,092,233 | $ 19,234,776 | $ 16,697,946 | $ 4,090,569 | $ 20,788,515 | $ 17,279,390 | $ 3,799,435 | $ 21,078,825 |
| **Subtotal: C&I** | **$ 66,476,261** | **$ 17,488,154** | **$ 83,964,415** | **$ 72,419,399** | **$ 17,679,592** | **$ 90,098,991** | **$ 70,747,035** | **$ 16,396,922** | **$ 87,143,957** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 656,954 | $ 294,279 | $ 951,233 | $ 657,285 | $ 299,292 | $ 956,577 | $ 472,084 | $ 304,455 | $ 776,539 |
| Customer Engagement | $ 1,539,419 | $ - | $ 1,539,419 | $ 1,968,000 | $ 475,000 | $ 2,443,000 | $ 1,968,000 | $ 475,000 | $ 2,443,000 |
| Educate the Students | $ 274,562 | $ 116,992 | $ 391,554 | $ 412,236 | $ 101,242 | $ 513,478 | $ 412,236 | $ 102,752 | $ 514,988 |
| Educate the Workforce | $ 166,125 | $ 47,633 | $ 213,759 | $ 500,000 | $ 37,943 | $ 537,943 | $ 750,000 | $ 38,509 | $ 788,509 |
| **Subtotal: Education & Engagement** | **$ 2,637,061** | **$ 458,904** | **$ 3,095,965** | **$ 3,537,521** | **$ 913,477** | **$ 4,450,998** | **$ 3,602,320** | **$ 920,715** | **$ 4,523,036** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (Includes ECLF and OBR) | $ 1,500,000 | $ 148,004 | $ 1,648,004 | $ 458,365 | $ 149,381 | $ 607,746 | $ 453,364 | $ 150,799 | $ 604,163 |
| C&I Financing Support | $ 17,569,775 | $ - | $ 17,569,775 | $ 2,528,933 | $ - | $ 2,528,933 | $ 2,501,339 | $ - | $ 2,501,339 |
| Research, Development & Demonstration | $ 168,878 | $ 151,250 | $ 320,128 | $ 164,016 | $ 151,250 | $ 315,266 | $ 162,227 | $ 151,250 | $ 313,477 |
| **Subtotal: Programs/Requirements** | **$ 19,238,653** | **$ 299,254** | **$ 19,537,907** | **$ 3,151,315** | **$ 300,630** | **$ 3,451,945** | **$ 3,116,930** | **$ 302,049** | **$ 3,418,979** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 837,411 | $ 852,299 | $ 1,689,710 | $ 2,500,000 | $ 1,353,839 | $ 3,853,839 | $ 4,800,000 | $ 2,524,099 | $ 7,324,099 |
| C&I Demand Response | $ 400,452 | $ 151,267 | $ 551,719 | $ 1,228,154 | $ 214,662 | $ 1,442,816 | $ 1,563,771 | $ 214,662 | $ 1,778,433 |
| **Subtotal: Load Management** | **$ 1,237,863** | **$ 1,003,566** | **$ 2,241,429** | **$ 3,728,155** | **$ 1,568,501** | **$ 5,296,656** | **$ 6,363,771** | **$ 2,738,761** | **$ 9,102,532** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 622,665 | $ 258,752 | $ 881,417 | $ 902,597 | $ 265,833 | $ 1,168,431 | $ 902,597 | $ 273,127 | $ 1,175,724 |
| Marketing Plan | $ 131,670 | $ 33,440 | $ 165,110 | $ 300,000 | $ 89,100 | $ 389,100 | $ 400,000 | $ 121,400 | $ 521,400 |
| Planning | $ 480,234 | $ 134,434 | $ 614,668 | $ 703,170 | $ 137,367 | $ 840,537 | $ 703,170 | $ 140,393 | $ 843,563 |
| Evaluation Measurement and Verification | $ 1,023,226 | $ 255,806 | $ 1,279,032 | $ 1,920,000 | $ 480,000 | $ 2,400,000 | $ 1,920,000 | $ 480,000 | $ 2,400,000 |
| Evaluation Administrator | $ 186,825 | $ 44,800 | $ 231,625 | $ 192,000 | $ 48,000 | $ 240,000 | $ 192,000 | $ 48,000 | $ 240,000 |
| Information Technology | $ 1,627,322 | $ 452,520 | $ 2,079,842 | $ 1,859,385 | $ 455,300 | $ 2,314,686 | $ 1,839,097 | $ 458,164 | $ 2,297,261 |
| Energy Efficiency Board Consultants | $ 318,423 | $ 76,544 | $ 394,967 | $ 416,000 | $ 104,000 | $ 520,000 | $ 416,000 | $ 104,000 | $ 520,000 |
| Audits - Financial and Operational | $ 60,000 | $ 24,000 | $ 84,000 | $ 60,000 | $ 24,000 | $ 84,000 | $ 60,000 | $ 24,000 | $ 84,000 |
| Performance Management Incentive (PMI) | $ 6,488,942 | $ 1,463,958 | $ 7,952,900 | $ 6,377,770 | $ 1,547,843 | $ 7,925,613 | $ 6,309,595 | $ 1,518,460 | $ 7,828,054 |
| **Subtotal: Admin/Planning Expenditures** | **$ 10,939,307** | **$ 2,744,254** | **$ 13,683,562** | **$ 12,730,923** | **$ 3,151,444** | **$ 15,882,366** | **$ 12,742,459** | **$ 3,167,543** | **$ 15,910,001** |
| **TOTAL** | **$ 151,252,912** | **$ 34,141,692** | **$ 185,394,604** | **$ 148,773,988** | **$ 36,120,356** | **$ 184,894,344** | **$ 147,190,807** | **$ 35,438,008** | **$ 182,628,815** |

# COMBINED ELECTRIC TABLE A2 (2019-2021)

**Table A2**
**2018 - 2021**
**Eversource CT Electric/UI EE Revenues**

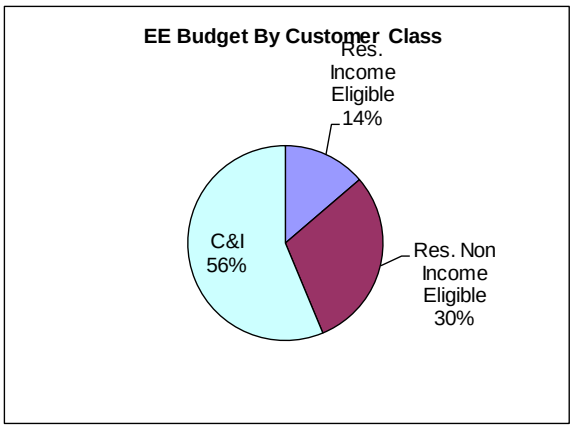
| ES CT Electric/UI EE REVENUES | 2018 Eversource CT Electric Revenues 12/31/2018 | 2018 UI Revenues 12/31/18 | 2018 Eversource CT Electric/UI Total 12/31/2018 | 2019 Eversource CT Electric Revenues 03/01/19 | 2019 UI Revenues 03/01/19 | 2019 Eversource CT Electric/UI Total 3/1/2019 |
|---|---|---|---|---|---|---|
| Collections (Mill Rate) | $ 63,848,361 | $ 15,610,891 | $ 79,459,252 | $ 62,337,614 | $ 15,045,000 | $ 77,382,614 |
| ISO-NE Forward Capacity Market Revenues | $ 32,458,593 | $ 8,328,954 | $ 40,787,547 | $ 29,695,383 | $ 8,064,731 | $ 37,760,115 |
| Class III Renewable Energy Credits | $ - | $ - | $ - | | | |
| RGGI* | $ 645,277 | $ 161,319 | $ 806,596 | $ 8,908,443 | $ 1,668,763 | $ 10,577,206 |
| RGGI Diversion | $ - | $ - | $ - | $ (433,484) | $ (106,246) | $ (539,730) |
| CAM (Net of Gross Receipts Tax) | $ 59,268,019 | $ 14,505,937 | $ 73,773,956 | $ 57,936,204 | $ 14,050,492 | $ 71,986,696 |
| Prior Period Over/(Under) Collections | $ (10,118,935) | $ (2,696,047) | $ (12,814,982) | $ (711,592) | $ 1,408,499 | $ 696,907 |
| Prior Period Under/(Over) Budget | $ 5,393,360 | $ (3,907,156) | $ 1,486,204 | $ (248,261) | $ (326,677) | $ (574,938) |
| Estimated Interest Due to Company/Other Revenues** | $ 517,675 | $ (113,222) | $ 404,453 | $ 15,168,604 | $ (312,870) | $ 14,855,734 |
| Transfer to State General Fund | $ (46,800,000) | $ (11,700,000) | $ (58,500,000) | $ (21,400,000) | $ (5,350,000) | $ (26,750,000) |
| **Total - EE Revenues** | **$ 105,212,350** | **$ 20,190,676** | **$ 125,403,026** | **$ 151,252,912** | **$ 34,141,692** | **$ 185,394,604** |

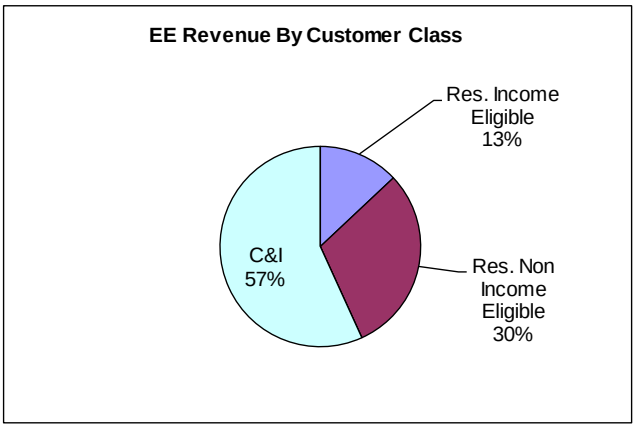
| ES CT Electric/UI EE REVENUES | 2020 Eversource CT Electric Revenues 03/01/19 | 2020 UI Revenues 03/01/19 | 2020 Eversource CT Electric/UI Total 3/1/2019 | 2021 Eversource CT Electric Revenues 03/01/19 | 2021 UI Revenues 03/01/19 | 2021 Eversource CT Electric/UI Total 3/1/2019 |
|---|---|---|---|---|---|---|
| Collections (Mill Rate) | $ - | $ - | $ - | $ - | $ - | $ - |
| ISO-NE Forward Capacity Market Revenues | $ 27,160,387 | $ 6,227,061 | $ 33,387,449 | $ 27,531,907 | $ 5,769,761 | $ 33,301,668 |
| RGGI* | $ 7,662,340 | $ 1,915,585 | $ 9,577,925 | $ 7,815,587 | $ 1,953,897 | $ 9,769,484 |
| RGGI Diversion | $ - | | $ - | | | $ - |
| CAM (Net of Gross Receipts Tax) | $ 113,951,260 | $ 27,977,710 | $ 141,928,970 | $ 111,843,313 | $ 27,714,351 | $ 139,557,664 |
| Transfer to State General Fund | $ - | | $ - | | | $ - |
| **Total - EE Revenues** | **$ 148,773,988** | **$ 36,120,356** | **$ 184,894,344** | **$ 147,190,807** | **$ 35,438,008** | **$ 182,628,815** |

*RGGI Budget is based on calculation by the Companies and DEEP; Revenues are adjusted down for Public Act 17-2 diverting $10M to the State of CT's General Fund for 2017and FY 2018
Sec. 683. of Public Act 17-2 transfers $63.5 million to the State's General Fund for FY 2017 and FY 2018; in FY 2018 $10 million was restored due to Public Act 18-50.
The EE FCM Payment Rates are: FCA-8-$7.03/kW-month, FCA-9-$9.55/kW-month, FCA-10-$7.03/kW-month, FCA-11-$5.30/kW-month, and FCA-12-$4.63/kW-month. 2018 Demand Response Portfolio is Retired as of June 2018.
**Proceeds from Eversource's Sale of Small Business Loans $15.2M

## Combined Electric Table Pie Chart (2019)

### A1 Pie Chart: 2019



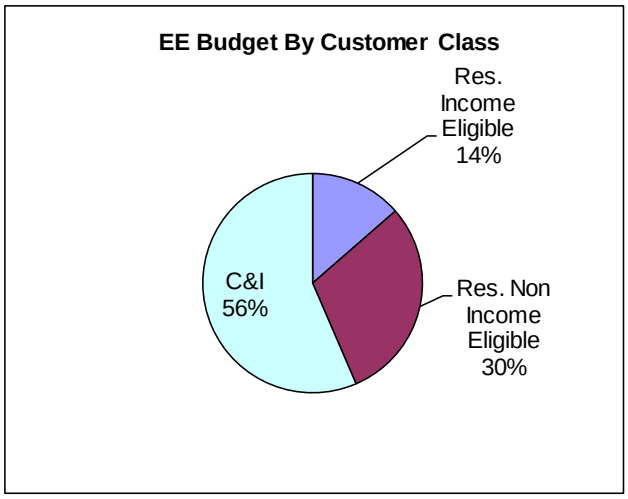



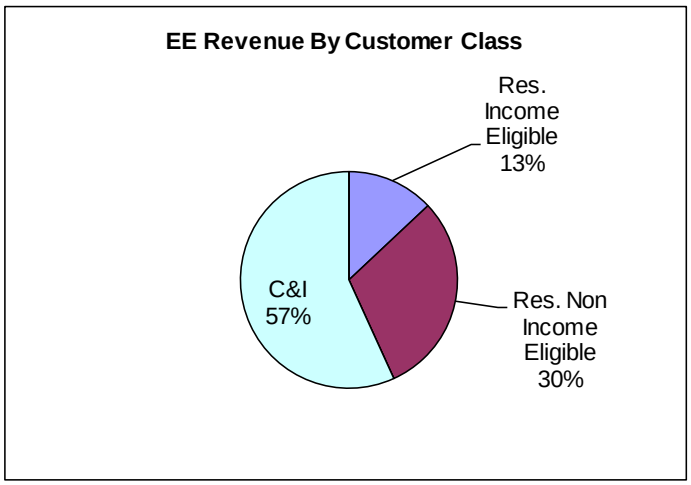

| Customer Class | Budget ($,000) * | % of Total Budget | % of Residential & C&I Budget | % of Residential & C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Income Eligible | $21,482,345 | 12% | 14% | 13% | 0.7% |
| Res. Non Income Eligible | $46,986,058 | 25% | 30% | 30% | 0% |
| **Residential Subtotal** | $68,468,403 | 37% | 44% | 43% | 1% |
| C&I | $88,110,016 | 48% | 56% | 57% | -1% |
| **C&I Subtotal** | $88,110,016 | 48% | 56% | 57% | -1% |
| **Residential and C&I Subtotal** | $156,578,419 | 84% | 100% | 100% | 0% |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $28,816,185 | 16% | | | |
| **Other Expenditures Subtotal** | $28,816,185 | 16% | | | |
| **EE TOTAL** | **$185,394,604** | **100%** | | | |
| **Eversource CT Electric** | **$151,252,912** | **82%** | | | |
| **UI** | **$34,141,692** | **18%** | | | |

Totals may vary due to rounding

## Combined Electric Table Pie Chart (2020)

### A1 Pie Chart: 2020



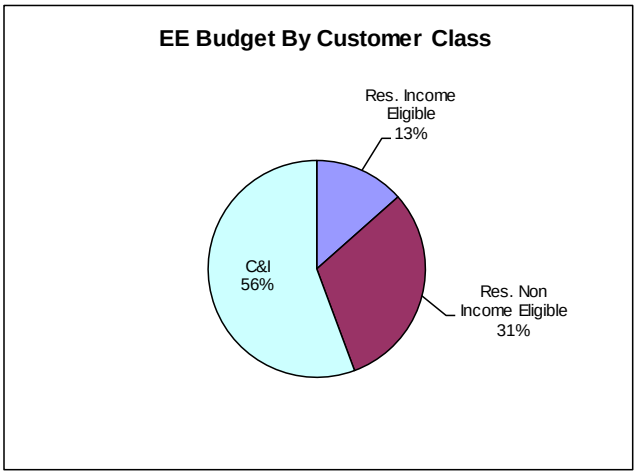



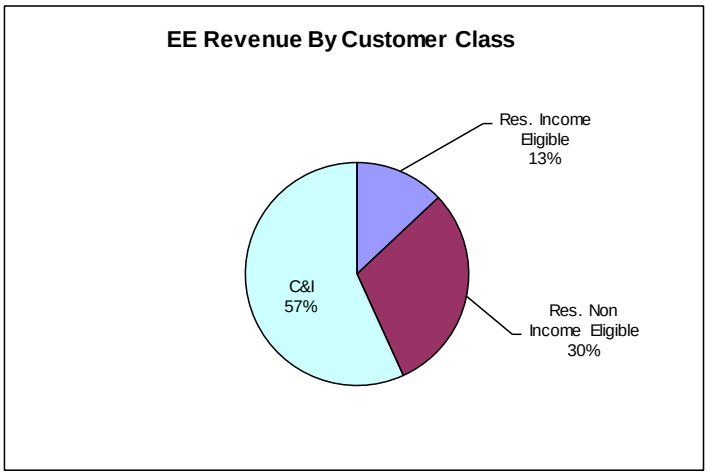

| Customer Class | Budget ($,000) * | % of Total Budget | % of Residential and C&I Budget | % of Residential and C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Income Eligible | $22,962,104 | 12% | 14% | 13% | 1% |
| Res. Non-Income Eligible | $50,636,591 | 27% | 30% | 30% | 0% |
| **Residential Subtotal** | $73,598,696 | 40% | 44% | 43% | 0% |
| C&I | $95,487,115 | 52% | 56% | 57% | 0% |
| **C&I Subtotal** | $95,487,115 | 52% | 56% | 57% | 0% |
| **Residential and C&I Subtotal** | $169,085,811 | 91% | 100% | 100% | 0% |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $15,808,533 | 9% | | | |
| **Other Expenditures Subtotal** | $15,808,533 | 9% | | | |
| **EE TOTAL** | **$184,894,344** | **100%** | | | |
| **Eversource CT Electric** | $148,773,988 | 80% | | | |
| **UI** | $36,120,356 | 20% | | | |

Totals may vary due to rounding.

## Combined Electric Table Pie Chart (2021)

### A1 Pie Chart: 2021




| Customer Class | Budget ($,000) * | % of Total Budget | % of Residential and C&I Budget | % of Residential and C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Income Eligible | $22,444,553 | 12% | 13% | 13% | 0% |
| Res. Non-Income Eligible | $51,580,053 | 28% | 31% | 30% | 1% |
| **Residential Subtotal** | $74,024,606 | 41% | 44% | 43% | 1% |
| C&I | $92,902,131 | 51% | 56% | 57% | -1% |
| **C&I Subtotal** | $92,902,131 | 51% | 56% | 57% | -1% |
| **Residential and C&I Subtotal** | $166,926,737 | 91% | 100% | 100% | 0% |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $15,702,078 | 9% | | | |
| **Other Expenditures Subtotal** | $15,702,078 | 9% | | | |
| **EE TOTAL** | **$182,628,815** | **100%** | | | |
| **Eversource CT Electric** | **$147,190,807** | **81%** | | | |
| **UI** | **$35,438,008** | **19%** | | | |

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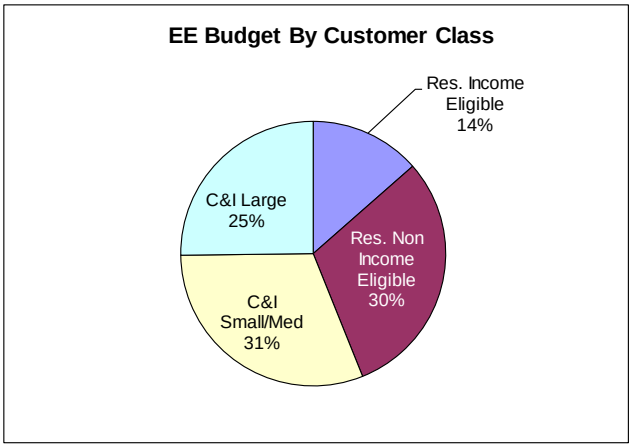
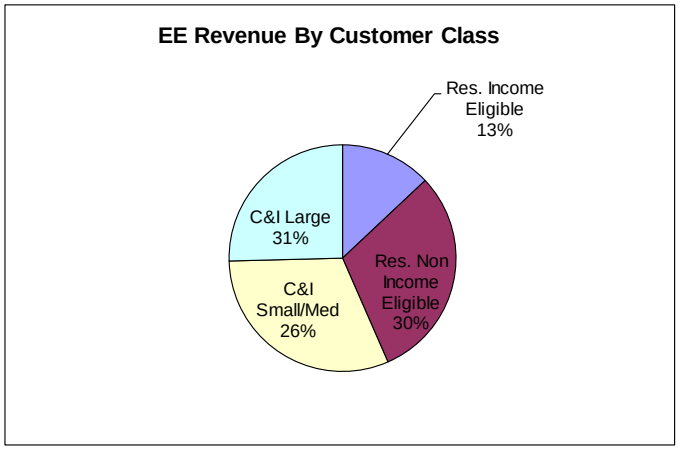
# EVERSOURCE ELECTRIC TABLES

## Eversource Electric Table A (2018-2021)

| EVERSOURCE CT ELECTRIC EE BUDGET | 2018 ES CT Electric Actual Results 12/31/18 | 2019 ES CT Electric Proposed Budget 11/19/18 | 2019 ES CT Electric Proposed Budget 03/01/19 | 2020 ES CT Electric Proposed Budget 03/01/19 | 2021 ES CT Electric Proposed Budget 03/01/19 |
|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | |
| Residential Retail Products | $ 6,529,899 | $ 8,357,915 | $ 8,505,986 | $ 6,000,000 | $ 5,000,000 |
| **Total: Consumer Products** | **$ 6,529,899** | **$ 8,357,915** | **$ 8,505,986** | **$ 6,000,000** | **$ 5,000,000** |
| New Construction, Additions & Major Renovations | $ 2,204,292 | $ 2,598,859 | $ 2,644,901 | $ 2,700,000 | $ 2,800,000 |
| Home Energy Solutions - Core Services | $ 10,336,611 | $ 17,600,293 | $ 17,912,103 | $ 20,906,676 | $ 19,968,292 |
| Home Energy Solutions - HVAC, Water Heaters | $ 4,048,082 | $ 3,920,096 | $ 3,989,546 | $ 4,000,000 | $ 3,750,000 |
| HES-Income Eligible | $ 11,599,849 | $ 15,647,648 | $ 15,971,230 | $ 16,500,000 | $ 16,000,000 |
| Residential Behavior | $ 526,083 | $ 2,617,051 | $ 1,700,000 | $ 3,100,000 | $ 3,100,000 |
| **Subtotal: Residential** | **$ 35,244,816** | **$ 50,741,863** | **$ 50,723,766** | **$ 53,206,676** | **$ 50,618,292** |
| **COMMERCIAL & INDUSTRIAL** | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | |
| Energy Conscious Blueprint | $ 6,632,890 | $ 12,186,639 | $ 12,402,540 | 12,565,032 | $ 12,918,272 |
| **Total: Lost Opportunity** | **$ 6,632,890** | **$ 12,186,639** | **$ 12,402,540** | **12,565,032** | **$ 12,918,272** |
| **C&I LARGE RETROFIT** | | | | | |
| Energy Opportunities | $ 29,689,128 | $ 34,995,428 | $ 35,615,415 | 39,670,751 | $ 37,002,063 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 2,977,133 | $ 3,258,043 | $ 3,315,763 | 3,485,670 | $ 3,547,310 |
| **Total: C&I Large Retrofit** | **$ 32,666,260** | **$ 38,253,471** | **$ 38,931,178** | **43,156,421** | **$ 40,549,372** |
| Small Business Energy Advantage | $ 11,613,734 | $ 14,878,945 | $ 15,142,544 | 16,697,946 | $ 17,279,390 |
| **Subtotal: C&I** | **$ 50,912,884** | **$ 65,319,055** | **$ 66,476,261** | **72,419,399** | **$ 70,747,035** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | |
| Educate the Public | $ 562,325 | $ 656,954 | $ 656,954 | $ 657,285 | $ 472,084 |
| Customer Engagement | $ 1,350,290 | $ 1,539,419 | $ 1,539,419 | $ 1,968,000 | $ 1,968,000 |
| Educate the Students | $ (1,626) | $ 219,562 | $ 274,562 | $ 412,236 | $ 412,236 |
| Educate the Workforce | $ 84,770 | $ 141,125 | $ 166,125 | $ 500,000 | $ 750,000 |
| **Subtotal: Education & Engagement** | **$ 1,995,759** | **$ 2,557,061** | **$ 2,637,061** | **$ 3,537,521** | **$ 3,602,320** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | |
| Residential Loan Program (Includes ECLF and OBR)* | $ 1,032,277 | $ 471,951 | $ 1,500,000 | $ 458,365 | $ 453,364 |
| C&I Financing Support | $ 2,677,386 | $ 2,592,169 | $ 17,569,775 | $ 2,528,933 | $ 2,501,339 |
| Research, Development & Demonstration | $ 281,632 | $ 168,878 | $ 168,878 | $ 164,016 | $ 162,227 |
| **Subtotal: Programs/Requirements** | **$ 3,991,295** | **$ 3,232,998** | **$ 19,238,653** | **$ 3,151,315** | **$ 3,116,930** |
| **OTHER - LOAD MANAGEMENT** | | | | | |
| ISO Load Response | $ 1,230,295 | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 528,780 | $ 837,411 | $ 837,411 | $ 2,500,000 | $ 4,800,000 |
| C&I Demand Response | $ 237,674 | $ 400,452 | $ 400,452 | $ 1,228,154 | $ 1,563,771 |
| **Subtotal: Load Management** | **$ 1,996,750** | **$ 1,237,863** | **$ 1,237,863** | **$ 3,728,155** | **$ 6,363,771** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | |
| Administration | $ 813,659 | $ 622,665 | $ 622,665 | $ 902,597 | $ 902,597 |
| Marketing Plan | $ 139,080 | $ 131,670 | $ 131,670 | $ 300,000 | $ 400,000 |
| Planning | $ 601,069 | $ 480,234 | $ 480,234 | $ 703,170 | $ 703,170 |
| Evaluation Measurement and Verification | $ 1,829,414 | $ 1,023,226 | $ 1,023,226 | $ 1,920,000 | $ 1,920,000 |
| Evaluation Administrator | $ 176,199 | $ 186,825 | $ 186,825 | $ 192,000 | $ 192,000 |
| Information Technology | $ 1,147,062 | $ 1,627,322 | $ 1,627,322 | $ 1,859,385 | $ 1,839,097 |
| Energy Efficiency Board Consultants | $ 306,176 | $ 318,423 | $ 318,423 | $ 416,000 | $ 416,000 |
| Audits - Financial and Operational | $ 60,000 | $ 60,000 | $ 60,000 | $ 60,000 | $ 60,000 |
| Performance Management Incentive (PMI) | $ 6,953,613 | $ 5,713,828 | $ 6,488,942 | $ 6,377,770 | $ 6,309,595 |
| **Subtotal: Admin/Planning Expenditures** | **$ 12,026,273** | **$ 10,164,193** | **$ 10,939,307** | **$ 12,730,923** | **$ 12,742,459** |
| **TOTAL** | **$ 106,167,776** | **$ 133,253,033** | **$ 151,252,912** | **$ 148,773,988** | **$ 147,190,807** |

## Eversource Electric Table A Pie Chart (2019)

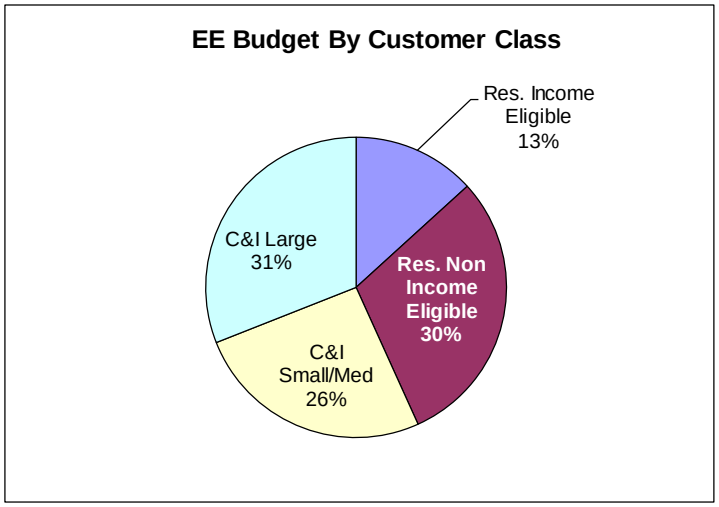


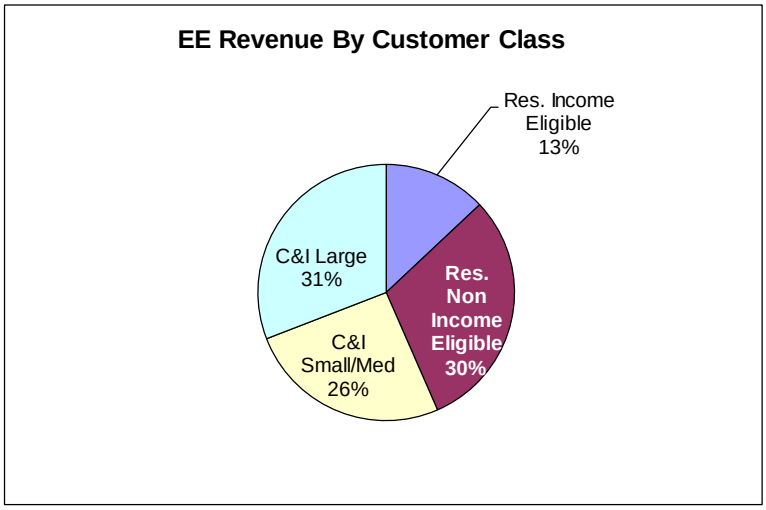




| Customer Class | Budget* | % of Total Budget | % of Residential & C&I Budget | % of Residential & C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Non Income Eligible | $38,092,832 | 25% | 30% | 30% | 0% |
| **Residential Subtotal** | $55,029,238 | 36% | 44% | 43% | 0% |
| C&I Small/Med | $38,702,210 | 26% | 31% | 31% | 0% |
| C&I Large | $31,567,343 | 21% | 25% | 25% | 0% |
| **C&I Subtotal** | $70,269,553 | 46% | 56% | 57% | 0% |
| **Residential and C&I Subtotal** | $125,298,790 | 83% | 100% | 100% | 0% |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $25,954,121 | 17% | | | |
| **Other Expenditures Subtotal** | $25,954,121 | 17% | | | |
| **EE TOTAL** | **$151,252,912** | 100% | | | |

Note - Municipalities and state facilities are eligible to participate in C&I Program offerings as applicable.

## Eversource Electric Table A Pie Chart (2020)

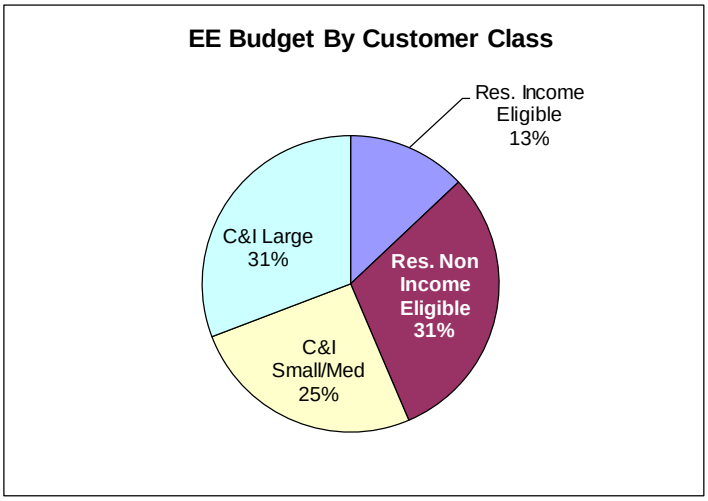


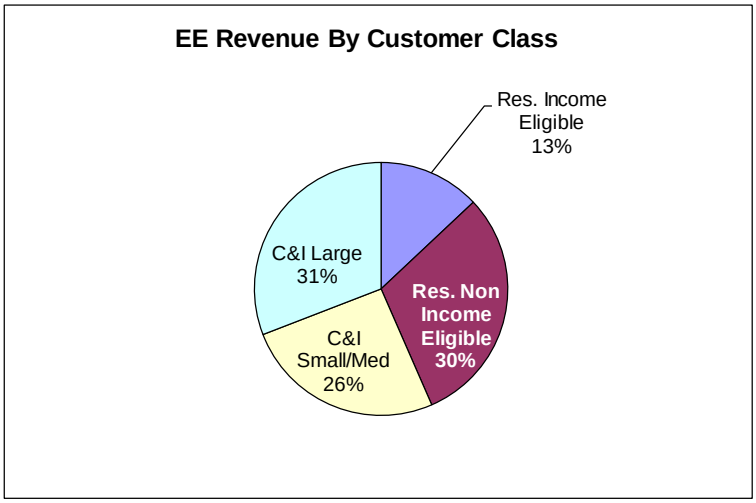




| Customer Class | Budget* | % of Total Budget | % of Residential and C&I Budget | % of Residential and C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Income Eligible | $18,028,680 | 12% | 13% | 13% | 0% |
| Res. Non-Income Eligible | $40,859,193 | 27% | 30% | 30% | 0% |
| **Residential Subtotal** | **$58,887,873** | **40%** | **43%** | **43%** | **0%** |
| C&I Small/Medium | $35,090,194 | 24% | 26% | 26% | 0% |
| C&I Large | $42,200,982 | 28% | 31% | 31% | 0% |
| **C&I Subtotal** | **$77,291,176** | **52%** | **57%** | **57%** | **0%** |
| **Residential and C&I Subtotal** | **$136,179,049** | **92%** | **100%** | **100%** | **0%** |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $12,594,939 | 8% | | | |
| **Other Expenditures Subtotal** | **$12,594,939** | **8%** | | | |
| **EE TOTAL** | **$148,773,988** | **100%** | | | |

Note: Municipalities and state facilities are eligible to participate in C&I program offerings as applicable.

## Eversource Electric Table A Pie Chart (2021)




| Customer Class | Budget* | % of Total Budget | % of Residential and C&I Budget | % of Residential and C&I Revenue | Difference |
|---|---|---|---|---|---|
| Res. Income Eligible | $17,444,078 | 12% | 13% | 13% | 0% |
| Res. Non-Income Eligible | $41,262,809 | 28% | 31% | 30% | 0% |
| **Residential Subtotal** | $58,706,887 | 40% | 44% | 43% | 0% |
| C&I Small/Medium | $34,494,573 | 23% | 26% | 26% | 0% |
| C&I Large | $41,484,662 | 28% | 31% | 31% | 0% |
| **C&I Subtotal** | $75,979,235 | 52% | 56% | 57% | 0% |
| **Residential and C&I Subtotal** | $134,686,121 | 92% | 100% | 100% | 0% |
| ***Other Expenditures*** | | | | | |
| Other Expenditures | $12,504,685 | 8% | | | |
| **Other Expenditures Subtotal** | $12,504,685 | 8% | | | |
| **EE TOTAL** | **$147,190,807** | **100%** | | | |

Note: Municipalities and state facilities are eligible to participate in C&I program offerings as applicable.

## Table B – Eversource CT Electric Costs and Benefits (2019)

| 2019 | Costs ($000) | | | Benefits ($000) | | | Benefit Cost Ratios | | | Quantities | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure |
| **Residential** | | | | | | | | | | | |
| Retail Products | $8,506 | $8,506 | $16,312 | $22,265 | $18,995 | $28,090 | 2.62 | 2.23 | 1.72 | 2,595,609 | Products |
| New Construction | $1,885 | $2,645 | $5,917 | $11,480 | $18,982 | $27,003 | 6.09 | 7.18 | 4.56 | 920 | Homes |
| Home Energy Solutions | $9,489 | $17,912 | $22,489 | $32,194 | $88,035 | $117,830 | 3.39 | 4.91 | 5.24 | 19,945 | Homes |
| HVAC | $3,990 | $3,990 | $11,805 | $8,571 | $10,702 | $14,346 | 2.15 | 2.68 | 1.22 | 15,553 | Units |
| HES-Income Eligible | $11,259 | $15,971 | $16,171 | $19,815 | $34,396 | $47,874 | 1.76 | 2.15 | 2.96 | 25,831 | Homes |
| Behavior | $1,700 | $1,700 | $1,700 | $7,149 | $7,149 | $9,292 | 4.21 | 4.21 | 5.47 | 140,000 | Customers |
| **Subtotal: Residential** | $36,828 | $50,724 | $74,394 | $101,474 | $178,260 | $244,434 | 2.76 | 3.51 | 3.29 | | |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $12,403 | $12,403 | $14,902 | $68,167 | $67,511 | $85,291 | 5.50 | 5.44 | 5.72 | 360 | Projects |
| Energy Opportunities | $35,615 | $35,615 | $85,525 | $167,461 | $164,826 | $209,388 | 4.70 | 4.63 | 2.45 | 1,216 | Projects |
| BES | $3,316 | $3,316 | $6,064 | $8,672 | $8,637 | $15,649 | 2.62 | 2.60 | 2.58 | 177 | Projects |
| Small Business Energy Advantage | $15,143 | $15,143 | $29,217 | $76,063 | $74,401 | $94,335 | 5.02 | 4.91 | 3.23 | 1,766 | Projects |
| **Subtotal: C&I** | $66,476 | $66,476 | $135,708 | $320,364 | $315,375 | $404,663 | 4.82 | 4.74 | 2.98 | | |
| Residential DR | $837 | $837 | $837 | | | | | | | 3,350 | Customers |
| C&I DR | $400 | $400 | $400 | | | | | | | 12 | Customers |
| **Subtotal: DR** | $1,238 | $1,238 | $1,238 | $0 | $0 | $0 | | | | | |
| **Subtotal: Other** | $32,815 | $32,815 | $32,815 | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$137,357** | **$151,253** | **$244,155** | **$421,838** | **$493,635** | **$649,097** | **3.07** | **3.26** | **2.66** | | |

# Table B – Eversource CT Electric Costs and Benefits (2019) continued

| 2019 | Electric Savings | | | Electric Cost Rates | | | | Oil/Propane Savings | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Electric Cost Rate $/kWh Annualize | Electric Cost Ratio $/LT-kWh | Electric Demand Cost $/kW | Electric Demand Cost $/kW-yr | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| | Residential | | | | | | | | | | | | | | | | |
| Retail Products | 26,635 | 142,457 | 3,456 | $0.319 | $0.060 | $2,461 | $460 | -209,054 | -938,640 | -8,047 | -40,235 | 61,175 | 352,353 | $139 | $24 | 9,253 | 52,994 |
| New Construction | 4,308 | 69,040 | 915 | $0.437 | $0.027 | $2,060 | $129 | 0 | 0 | 136,281 | 3,509,639 | 27,151 | 556,168 | $97 | $5 | 3,164 | 71,686 |
| Home Energy Solutions | 20,059 | 173,320 | 3,831 | $0.473 | $0.055 | $2,477 | $287 | 775,678 | 17,017,984 | 77,715 | 1,797,583 | 183,137 | 3,115,938 | $98 | $6 | 20,514 | 330,904 |
| HVAC | 3,089 | 50,746 | 693 | $1.291 | $0.079 | $5,754 | $350 | 12,811 | 166,544 | 19,456 | 252,932 | 14,097 | 219,396 | $283 | $18 | 1,846 | 29,169 |
| HES-Income Eligible | 17,340 | 152,851 | 1,790 | $0.649 | $0.074 | $6,291 | $714 | 245,132 | 5,500,018 | -1,575 | -36,827 | 93,037 | 1,281,113 | $172 | $12 | 10,419 | 138,697 |
| Behavior | 15,395 | 39,765 | 1,757 | $0.110 | $0.043 | $967 | $375 | 0 | 0 | 0 | 0 | 52,543 | 135,718 | $32 | $13 | 7,520 | 19,424 |
| **Subtotal: Residential** | 86,826 | 628,179 | 12,442 | $0.424 | $0.059 | $2,960 | $409 | 824,568 | 21,745,906 | 223,831 | 5,483,092 | 431,140 | 5,660,686 | $118 | $9 | 52,715 | 642,875 |
| | Commercial & Industrial | | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 27,643 | 419,777 | 4,449 | $0.449 | $0.030 | $2,788 | $184 | 0 | 0 | 0 | 0 | 94,345 | 1,432,700 | $131 | $9 | 13,191 | 200,517 |
| Energy Opportunities | 86,641 | 1,001,964 | 11,529 | $0.411 | $0.036 | $3,089 | $267 | 0 | 0 | 0 | 0 | 295,707 | 3,419,704 | $120 | $10 | 40,857 | 472,465 |
| BES | 7,816 | 48,436 | 1,178 | $0.424 | $0.068 | $2,815 | $454 | 0 | 0 | 0 | 0 | 26,676 | 165,314 | $124 | $20 | 5,045 | 33,572 |
| Small Business Energy Advantage | 37,904 | 462,155 | 5,678 | $0.399 | $0.033 | $2,667 | $219 | 0 | 0 | 0 | 0 | 129,367 | 1,577,334 | $117 | $10 | 17,591 | 214,486 |
| **Subtotal: C&I** | 160,004 | 1,932,333 | 22,833 | $0.415 | $0.0344 | $2,911 | $241 | 0 | 0 | 0 | 0 | 546,094 | 6,595,052 | $122 | $10 | 76,684 | 921,039 |
| Residential DR | | | 1,005 | | | $833 | | | | | | | | | | | |
| C&I DR | | | 3,010 | | | $133 | | | | | | | | | | | |
| **Subtotal: DR** | | | 4,015 | | | | | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| **TOTAL** | **246,830** | **2,560,512** | **39,290** | **$0.556** | **$0.054** | **$3,496** | **$337** | **824,568** | **21,745,906** | **223,831** | **5,483,092** | **977,234** | **12,255,738** | **$155** | **$12** | **129,399** | **1,563,914** |

## Table B - Eversource CT Electric Costs and Benefits (2020)

| 2020 | Costs ($000) | | | Benefits ($000) | | | Benefit Cost Ratios | | | Quantities | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure |
| **Residential** | | | | | | | | | | | |
| Retail Products | $6,000 | $6,000 | $13,806 | $12,475 | $11,373 | $15,864 | 2.08 | 1.90 | 1.15 | 1,682,051 | Products |
| New Construction | $2,065 | $2,700 | $5,972 | $8,588 | $15,481 | $19,299 | 4.16 | 5.73 | 3.23 | 982 | Homes |
| Home Energy Solutions | $9,630 | $20,907 | $25,484 | $32,220 | $94,227 | $124,389 | 3.35 | 4.51 | 4.88 | 25,760 | Homes |
| HVAC | $4,000 | $4,000 | $11,815 | $12,696 | $14,672 | $17,698 | 3.17 | 3.67 | 1.50 | 13,850 | Units |
| HES-Income Eligible | $11,141 | $16,500 | $16,700 | $14,135 | $29,012 | $39,945 | 1.27 | 1.76 | 2.39 | 26,095 | Homes |
| Behavior | $3,100 | $3,100 | $3,100 | $5,909 | $5,909 | $7,624 | 1.91 | 1.91 | 2.46 | 250,000 | Customers |
| **Subtotal: Residential** | $35,936 | $53,207 | $76,877 | $86,024 | $170,675 | $224,819 | 2.39 | 3.21 | 2.92 | | |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $12,565 | $12,565 | $15,065 | $65,526 | $64,911 | $82,101 | 5.21 | 5.17 | 5.45 | 344 | Projects |
| Energy Opportunities | $39,671 | $39,671 | $89,580 | $180,998 | $178,217 | $226,528 | 4.56 | 4.49 | 2.53 | 1,306 | Projects |
| BES | $3,486 | $3,486 | $6,234 | $13,065 | $13,024 | $21,954 | 3.75 | 3.74 | 3.52 | 175 | Projects |
| Small Business Energy Advantage | $16,698 | $16,698 | $30,773 | $66,921 | $65,434 | $83,742 | 4.01 | 3.92 | 2.72 | 1,605 | Projects |
| **Subtotal: C&I** | $72,419 | $72,419 | $141,651 | $326,510 | $321,586 | $414,325 | 4.51 | 4.44 | 2.92 | | |
| Residential DR | $2,500 | $2,500 | $2,500 | | | | | | | 10,000 | Customers |
| C&I DR | $1,228 | $1,228 | $1,228 | | | | | | | 34 | Customers |
| **Subtotal: DR** | $3,728 | $3,728 | $3,728 | $0 | $0 | $0 | | | | | |
| **Subtotal: Other** | $19,420 | $19,420 | $19,420 | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$131,504** | **$148,774** | **$241,676** | **$412,534** | **$492,261** | **$639,144** | **3.14** | **3.31** | **2.64** | | |

# Table B - Eversource CT Electric Costs and Benefits (2020) — continued

| 2020 | Electric Savings | | | Electric Cost Rates | | | | Oil/Propane Savings | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Electric Cost Rate $/kWh Annualize | Electric Cost Ratio $/LT-kWh | Electric Demand Cost $/kW | Electric Demand Cost $/kW-yr | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| | Residential | | | | | | | | | | | | | | | | |
| Retail Products | 16,568 | 78,641 | 2,101 | $0.362 | $0.076 | $2,855 | $602 | -113,116 | -307,734 | -4,762 | -23,812 | 40,424 | 223,548 | $148 | $27 | 6,086 | 33,320 |
| New Construction | 2,601 | 58,315 | 450 | $0.794 | $0.035 | $4,587 | $205 | 0 | 0 | 95,063 | 2,413,467 | 17,558 | 419,451 | $154 | $6 | 2,031 | 48,172 |
| Home Energy Solutions | 16,819 | 153,198 | 3,832 | $0.573 | $0.063 | $2,513 | $276 | 848,054 | 17,588,600 | 111,161 | 2,363,822 | 185,173 | 3,178,114 | $113 | $7 | 20,383 | 335,913 |
| HVAC | 3,603 | 58,488 | 1,045 | $1.110 | $0.068 | $3,830 | $236 | 20,476 | 266,190 | 31,097 | 404,265 | 17,978 | 273,459 | $222 | $15 | 2,299 | 35,571 |
| HES-Income Eligible | 16,096 | 104,375 | 1,614 | $0.692 | $0.107 | $6,901 | $1,064 | 264,601 | 5,166,952 | 6,937 | 154,581 | 92,268 | 1,086,953 | $179 | $15 | 10,014 | 115,515 |
| Behavior | 14,500 | 36,729 | 1,655 | $0.214 | $0.084 | $1,873 | $739 | 0 | 0 | 0 | 0 | 49,489 | 125,354 | $63 | $25 | 7,083 | 17,941 |
| **Subtotal: Residential** | 70,188 | 489,745 | 10,698 | $0.512 | $0.073 | $3,359 | $481 | 1,020,014 | 22,714,008 | 239,496 | 5,312,324 | 402,890 | 5,306,880 | $132 | $10 | 47,895 | 586,432 |
| | Commercial & Industrial | | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 26,479 | 401,955 | 4,285 | $0.475 | $0.031 | $2,932 | $193 | 0 | 0 | 0 | 0 | 90,374 | 1,371,872 | $139 | $9 | 12,639 | 192,041 |
| Energy Opportunities | 93,030 | 1,075,156 | 12,324 | $0.426 | $0.037 | $3,219 | $279 | 0 | 0 | 0 | 0 | 317,511 | 3,669,507 | $125 | $11 | 43,869 | 506,965 |
| BES | 11,073 | 74,482 | 2,150 | $0.315 | $0.047 | $1,621 | $241 | 0 | 0 | 0 | 0 | 37,791 | 254,208 | $92 | $14 | 5,366 | 36,170 |
| Small Business Energy Advantage | 34,493 | 427,797 | 4,471 | $0.484 | $0.039 | $3,735 | $301 | 0 | 0 | 0 | 0 | 117,724 | 1,460,072 | $142 | $11 | 16,007 | 198,525 |
| **Subtotal: C&I** | 165,075 | 1,979,390 | 23,230 | $0.439 | $0.037 | $3,117 | $260 | 0 | 0 | 0 | 0 | 563,399 | 6,755,658 | $129 | $11 | 77,882 | 933,700 |
| Residential DR | | | 3,000 | | | $833 | | | | | | | | | | | |
| C&I DR | | | 8,950 | | | $137 | | | | | | | | | | | |
| **Subtotal: DR** | | | 11,950 | | | | | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| **TOTAL** | **235,262** | **2,469,135** | **45,878** | **$0.559** | **$0.053** | **$2,866** | **$273** | **1,020,014** | **22,714,008** | **239,496** | **5,312,324** | **966,290** | **12,062,539** | **$154** | **$12** | **125,776** | **1,520,133** |

## Table B – Eversource CT Electric Costs and Benefits (2021)

| 2021 | Costs ($000) | | | Benefits ($000) | | | Benefit Cost Ratios | | | Quantities | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Utility Cost | Modified Utility Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility Cost Test | Modified Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure |
| **Residential** | | | | | | | | | | | |
| Retail Products | $5,000 | $5,000 | $12,806 | $6,856 | $7,572 | $10,014 | 1.37 | 1.51 | 0.78 | 868,609 | Products |
| New Construction | $2,283 | $2,800 | $6,072 | $9,316 | $17,326 | $21,604 | 4.08 | 6.19 | 3.56 | 1,098 | Homes |
| Home Energy Solutions | $7,873 | $19,968 | $24,546 | $29,044 | $98,964 | $130,713 | 3.69 | 4.96 | 5.33 | 31,574 | Homes |
| HVAC | $3,750 | $3,750 | $11,565 | $11,736 | $13,657 | $16,507 | 3.13 | 3.64 | 1.43 | 12,880 | Units |
| HES-Income Eligible | $10,793 | $16,000 | $16,200 | $11,037 | $29,959 | $41,662 | 1.02 | 1.87 | 2.57 | 25,418 | Homes |
| Behavior | $3,100 | $3,100 | $3,100 | $4,888 | $4,888 | $6,387 | 1.58 | 1.58 | 2.06 | 250,000 | Customers |
| **Subtotal: Residential** | $32,799 | $50,618 | $74,288 | $72,877 | $172,366 | $226,888 | 2.22 | 3.41 | 3.05 | | |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $12,918 | $12,918 | $15,418 | $62,352 | $61,774 | $78,503 | 4.83 | 4.78 | 5.09 | 331 | Projects |
| Energy Opportunities | $37,002 | $37,002 | $86,911 | $166,059 | $163,491 | $208,984 | 4.49 | 4.42 | 2.40 | 1,215 | Projects |
| BES | $3,547 | $3,547 | $6,295 | $13,905 | $13,860 | $22,847 | 3.92 | 3.91 | 3.63 | 169 | Projects |
| Small Business Energy Advantage | $17,279 | $17,279 | $31,354 | $67,511 | $66,006 | $85,406 | 3.91 | 3.82 | 2.72 | 1,576 | Projects |
| **Subtotal: C&I** | $70,747 | $70,747 | $139,979 | $309,826 | $305,131 | $395,740 | 4.38 | 4.31 | 2.83 | | |
| Residential DR | $4,800 | $4,800 | $4,800 | | | | | | | 19,200 | Customers |
| C&I DR | $1,564 | $1,564 | $1,564 | | | | | | | 46 | Customers |
| **Subtotal: DR** | $6,364 | $6,364 | $6,364 | $0 | $0 | $0 | | | | | |
| **Subtotal: Other** | $19,462 | $19,462 | $19,462 | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$129,372** | **$147,191** | **$240,093** | **$382,703** | **$477,497** | **$622,628** | **2.96** | **3.24** | **2.59** | | |

# Table B - Eversource CT Electric Costs and Benefits (2021) continued

| 2021 | Electric Savings | | | Electric Cost Rates | | | | Oil/Propane Savings | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Electric | Annual Savings (MWh) | Lifetime Savings (MWh) | Peak kW Impact (Y/E) | Electric Cost Rate $/kWh Annualize | Electric Cost Ratio $/LT-kWh | Electric Demand Cost $/kW | Electric Demand Cost $/kW-yr | Annual Oil Savings (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| | Residential | | | | | | | | | | | | | | | | |
| Retail Products | 9,100 | 46,580 | 1,060 | $0.549 | $0.107 | $4,718 | $922 | -29,170 | 162,373 | -2,452 | -12,262 | 26,789 | 180,377 | $187 | $28 | 3,983 | 26,432 |
| New Construction | 2,706 | 63,867 | 475 | $0.844 | $0.036 | $4,806 | $204 | 0 | 0 | 107,202 | 2,701,627 | 19,025 | 464,719 | $147 | $6 | 2,190 | 53,288 |
| Home Energy Solutions | 9,020 | 130,078 | 3,080 | $0.873 | $0.061 | $2,556 | $177 | 978,359 | 18,996,402 | 130,392 | 2,537,018 | 178,382 | 3,310,272 | $112 | $6 | 18,809 | 346,812 |
| HVAC | 3,351 | 54,393 | 971 | $1.119 | $0.069 | $3,860 | $238 | 19,043 | 247,554 | 28,920 | 375,962 | 16,720 | 254,314 | $224 | $15 | 2,138 | 33,081 |
| HES-Income Eligible | 14,802 | 84,986 | 1,429 | $0.729 | $0.127 | $7,555 | $1,316 | 272,514 | 5,907,201 | 9,137 | 196,919 | 89,149 | 1,127,311 | $179 | $14 | 9,790 | 119,270 |
| Behavior | 12,500 | 31,663 | 1,427 | $0.248 | $0.098 | $2,172 | $858 | 0 | 0 | 0 | 0 | 42,663 | 108,064 | $73 | $29 | 6,106 | 15,466 |
| **Subtotal: Residential** | 51,479 | 411,567 | 8,441 | $0.637 | $0.080 | $3,885 | $486 | 1,240,746 | 25,313,529 | 273,198 | 5,799,264 | 372,727 | 5,445,057 | $136 | $9 | 43,015 | 594,349 |
| | Commercial & Industrial | | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 25,493 | 386,987 | 4,126 | $0.507 | $0.033 | $3,131 | $206 | 0 | 0 | 0 | 0 | 87,009 | 1,320,787 | $148 | $10 | 12,168 | 184,890 |
| Energy Opportunities | 86,539 | 999,415 | 11,491 | $0.428 | $0.037 | $3,220 | $279 | 0 | 0 | 0 | 0 | 295,356 | 3,411,002 | $125 | $11 | 40,772 | 470,818 |
| BES | 11,090 | 74,755 | 2,296 | $0.320 | $0.047 | $1,545 | $229 | 0 | 0 | 0 | 0 | 37,848 | 255,139 | $94 | $14 | 5,367 | 36,269 |
| Small Business Energy Advantage | 33,876 | 438,966 | 4,392 | $0.510 | $0.039 | $3,935 | $304 | 0 | 0 | 0 | 0 | 115,619 | 1,498,190 | $149 | $12 | 15,721 | 203,667 |
| **Subtotal: C&I** | 156,998 | 1,900,122 | 22,304 | $0.451 | $0.037 | $3,172 | $262 | 0 | 0 | 0 | 0 | 535,833 | 6,485,118 | $132 | $11 | 74,028 | 895,643 |
| Residential DR | | | 5,760 | | | $833 | | | | | | | | | | | |
| C&I DR | | | 10,950 | | | $143 | | | | | | | | | | | |
| **Subtotal: DR** | | | 16,710 | | | | | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| **TOTAL** | **208,476** | **2,311,689** | **47,456** | **$0.621** | **$0.056** | **$2,726** | **$246** | **1,240,746** | **25,313,529** | **273,198** | **5,799,264** | **908,560** | **11,930,176** | **$162** | **$12** | **117,044** | **1,489,992** |

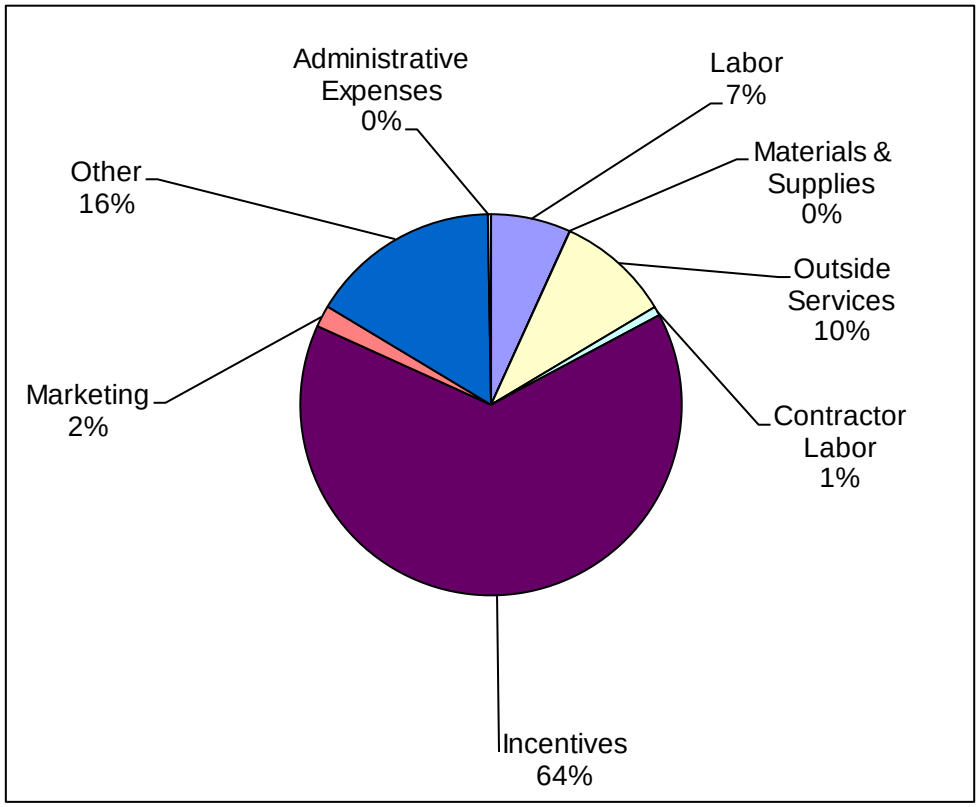
# Table C – Eversource CT Electric Energy Efficiency Budget Details (2019)

## Table C

### Eversource CT Electric 2019 EE Budget Details

| Eversource CT Electric EE BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other ** | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| Residential Retail Products | $ 104 | $ 1 | $ 786 | $ 0 | $ 7,113 | $ 456 | $ 36 | $ 9 | $ 8,506 |
| **Total - Consumer Products** | **$ 104** | **$ 1** | **$ 786** | **$ 0** | **$ 7,113** | **$ 456** | **$ 36** | **$ 9** | **$ 8,506** |
| New Construction, Additions & Major Renovations | $ 161 | $ 1 | $ 18 | $ 1 | $ 2,394 | $ 43 | $ 17 | $ 9 | $ 2,645 |
| Home Energy Solutions - Core Services | $ 1,141 | $ 4 | $ 650 | $ 100 | $ 15,318 | $ 642 | $ 21 | $ 36 | $ 17,912 |
| Home Energy Solutions - HVAC, Water Heaters | $ 61 | $ 1 | $ 384 | $ - | $ 3,416 | $ 91 | $ 18 | $ 18 | $ 3,990 |
| HES-Income Eligible | $ 1,375 | $ 5 | $ 315 | $ 39 | $ 13,529 | $ 608 | $ 46 | $ 54 | $ 15,971 |
| Residential Behavior | $ 80 | $ - | $ 1,620 | $ - | $ - | $ - | $ - | $ - | $ 1,700 |
| **Subtotal: Residential** | **$ 2,923** | **$ 12** | **$ 3,774** | **$ 141** | **$ 41,770** | **$ 1,841** | **$ 138** | **$ 126** | **$ 50,724** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,028 | $ 4 | $ 501 | $ 152 | $ 10,529 | $ 152 | $ 27 | $ 10 | $ 12,403 |
| **Total: Lost Opportunity** | **$ 1,028** | **$ 4** | **$ 501** | **$ 152** | **$ 10,529** | **$ 152** | **$ 27** | **$ 10** | **$ 12,403** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 2,988 | $ 5 | $ 2,020 | $ 688 | $ 29,415 | $ 310 | $ 90 | $ 100 | $ 35,615 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 124 | $ 2 | $ 798 | $ - | $ 2,289 | $ 75 | $ 6 | $ 22 | $ 3,316 |
| **Total: C&I Large Retrofit** | **$ 3,111** | **$ 7** | **$ 2,818** | **$ 688** | **$ 31,703** | **$ 385** | **$ 96** | **$ 122** | **$ 38,931** |
| Small Business Energy Advantage | $ 1,123 | $ 5 | $ 88 | $ - | $ 13,668 | $ 230 | $ 27 | $ 2 | $ 15,143 |
| **Subtotal: C&I** | **$ 5,262** | **$ 16** | **$ 3,407** | **$ 841** | **$ 55,900** | **$ 767** | **$ 150** | **$ 134** | **$ 66,476** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 68 | $ - | $ 534 | $ - | $ - | $ 35 | $ - | $ 19 | $ 657 |
| Customer Engagement | $ 284 | $ - | $ 1,170 | $ 85 | $ - | $ - | $ - | $ - | $ 1,539 |
| Educate the Students | $ 52 | $ - | $ 209 | $ - | $ - | $ 10 | $ 1 | $ 3 | $ 275 |
| Educate the Workforce | $ 52 | $ - | $ 114 | $ - | $ - | $ - | $ - | $ - | $ 166 |
| **Subtotal: Education & Engagement** | **$ 456** | **$ -** | **$ 2,028** | **$ 85** | **$ -** | **$ 45** | **$ 1** | **$ 22** | **$ 2,637** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 1,500 | $ - | $ - | $ - | $ - | $ - | $ 1,500 |
| C&I Financing Support | $ - | $ - | $ - | $ - | $ - | $ - | $ 17,570 | $ - | $ 17,570 |
| Research, Development & Demonstration | $ 62 | $ 2 | $ 98 | $ 2 | $ - | $ - | $ - | $ 5 | $ 169 |
| **Subtotal Programs/Requirements** | **$ 62** | **$ 2** | **$ 1,598** | **$ 2** | **$ -** | **$ -** | **$ 17,570** | **$ 5** | **$ 19,239** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 78 | $ - | $ 760 | $ - | $ - | $ - | $ - | $ - | $ 837 |
| C&I Demand Response | $ 78 | $ - | $ 323 | $ - | $ - | $ - | $ - | $ - | $ 400 |
| **Subtotal: Load Management** | **$ 155** | **$ -** | **$ 1,083** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 1,238** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 536 | $ 4 | $ - | $ 12 | $ - | $ - | $ 20 | $ 50 | $ 623 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 130 | $ 1 | $ 1 | $ 132 |
| Planning | $ 407 | $ 1 | $ - | $ 50 | $ - | $ - | $ 10 | $ 12 | $ 480 |
| Evaluation Measurement and Verification | $ 53 | $ 1 | $ 968 | $ - | $ - | $ - | $ 1 | $ 1 | $ 1,023 |
| Evaluation Administrator | $ - | $ - | $ 187 | $ - | $ - | $ - | $ - | $ - | $ 187 |
| Information Technology | $ 385 | $ - | $ 1,147 | $ 45 | $ - | $ - | $ - | $ 50 | $ 1,627 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 318 | $ - | $ - | $ - | $ - | $ - | $ 318 |
| Audits - Financial and Operational | $ - | $ - | $ 60 | $ - | $ - | $ - | $ - | $ - | $ 60 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 6,489 | $ - | $ 6,489 |
| **Subtotal: Admin/Planning Expenditures** | **$ 1,382** | **$ 6** | **$ 2,680** | **$ 107** | **$ -** | **$ 130** | **$ 6,521** | **$ 114** | **$ 10,939** |
| **TOTAL BUDGET** | **$ 10,239** | **$ 36** | **$ 14,570** | **$ 1,175** | **$ 97,670** | **$ 2,782** | **$ 24,380** | **$ 401** | **$ 151,253** |

## Eversource Electric Table C Pie Chart (2019)




| Expense Classes | Budget | % of Budget |
|---|---|---|
| Labor | $ 10,239 | 7% |
| Materials & Supplies | $ 36 | 0% |
| Outside Services | $ 14,570 | 10% |
| Contractor Labor | $ 1,175 | 1% |
| Incentives | $ 97,670 | 65% |
| Marketing | $ 2,782 | 2% |
| Other | $ 24,380 | 16% |
| Administrative Expenses | $ 401 | 0% |
| **Total** | **$ 151,253** | **100%** |

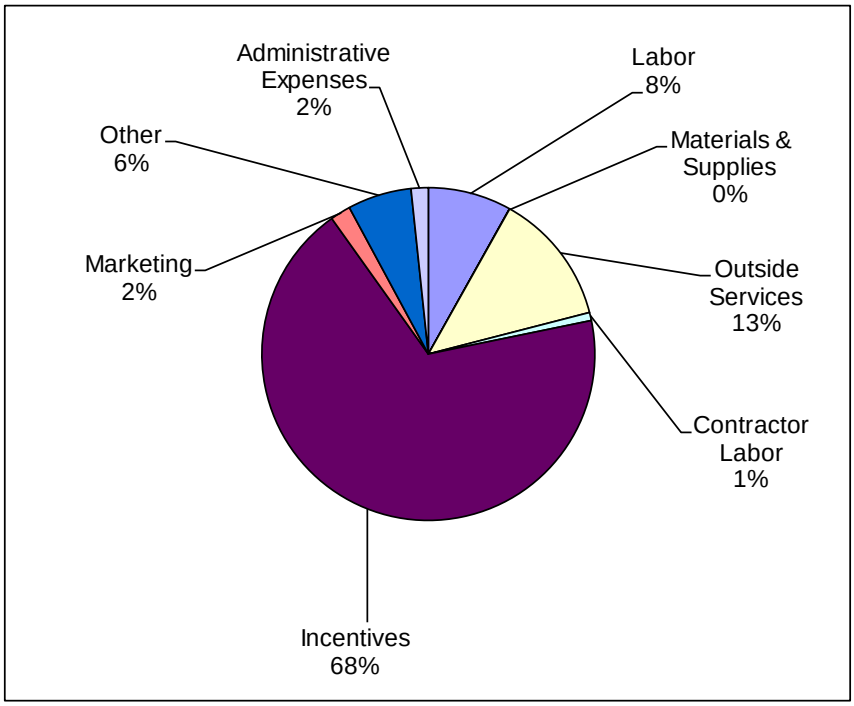
# Table C – Eversource CT Electric Energy Efficiency Budget Details (2020)

## Table C

### Eversource CT Electric 2020 EE Budget Details

| Eversource CT Electric EE BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other ** | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 107 | $ 1 | $ 786 | $ 0 | $ 4,604 | $ 456 | $ 36 | $ 9 | $ 6,000 |
| **Total: Consumer Products** | **$ 107** | **$ 1** | **$ 786** | **$ 0** | **$ 4,604** | **$ 456** | **$ 36** | **$ 9** | **$ 6,000** |
| New Construction, Additions & Major Renovations | $ 166 | $ 1 | $ 18 | $ 1 | $ 2,444 | $ 43 | $ 17 | $ 9 | $ 2,700 |
| Home Energy Solutions - Core Services | $ 1,369 | $ 4 | $ 596 | $ 100 | $ 18,138 | $ 642 | $ 21 | $ 36 | $ 20,907 |
| Home Energy Solutions - HVAC, Water Heaters | $ 73 | $ 1 | $ 196 | $ - | $ 3,602 | $ 91 | $ 18 | $ 18 | $ 4,000 |
| HES-Income Eligible | $ 1,581 | $ 5 | $ 315 | $ 39 | $ 13,852 | $ 608 | $ 46 | $ 54 | $ 16,500 |
| Residential Behavior | $ 82 | $ - | $ 3,018 | $ - | $ - | $ - | $ - | $ - | $ 3,100 |
| **Subtotal: Residential** | **$ 3,379** | **$ 12** | **$ 4,929** | **$ 141** | **$ 42,641** | **$ 1,841** | **$ 138** | **$ 126** | **$ 53,207** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,058 | $ 4 | $ 501 | $ 152 | $ 10,661 | $ 152 | $ 27 | $ 10 | $ 12,565 |
| **Total: Lost Opportunity** | **$ 1,058** | **$ 4** | **$ 501** | **$ 152** | **$ 10,661** | **$ 152** | **$ 27** | **$ 10** | **$ 12,565** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 3,436 | $ 5 | $ 2,020 | $ 688 | $ 32,942 | $ 310 | $ 90 | $ 180 | $ 39,671 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 155 | $ 2 | $ 798 | $ - | $ 2,428 | $ 75 | $ 6 | $ 22 | $ 3,486 |
| **Total: C&I Large Retrofit** | **$ 3,591** | **$ 7** | **$ 2,818** | **$ 688** | **$ 35,369** | **$ 385** | **$ 96** | **$ 202** | **$ 43,156** |
| Small Business Energy Advantage | $ 1,291 | $ 5 | $ 88 | $ - | $ 13,057 | $ 230 | $ 27 | $ 2,000 | $ 16,698 |
| **Subtotal: C&I** | **$ 5,940** | **$ 16** | **$ 3,407** | **$ 841** | **$ 59,087** | **$ 767** | **$ 150** | **$ 2,212** | **$ 72,419** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 70 | $ - | $ 533 | $ - | $ - | $ 35 | $ - | $ 19 | $ 657 |
| Customer Engagement | $ 292 | $ - | $ 1,591 | $ 85 | $ - | $ - | $ - | $ - | $ 1,968 |
| Educate the Students | $ 52 | $ - | $ 347 | $ - | $ - | $ 10 | $ 1 | $ 3 | $ 412 |
| Educate the Workforce | $ 52 | $ - | $ 448 | $ - | $ - | $ - | $ - | $ - | $ 500 |
| **Subtotal: Education & Engagement** | **$ 466** | **$ -** | **$ 2,919** | **$ 85** | **$ -** | **$ 45** | **$ 1** | **$ 22** | **$ 3,538** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 458 | $ - | $ - | $ - | $ - | $ - | $ 458 |
| C&I Financing Support | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,529 | $ - | $ 2,529 |
| Research, Development & Demonstration | $ 64 | $ 2 | $ 91 | $ 2 | $ - | $ - | $ - | $ 5 | $ 164 |
| **Subtotal: Programs/Requirements** | **$ 64** | **$ 2** | **$ 550** | **$ 2** | **$ -** | **$ -** | **$ 2,529** | **$ 5** | **$ 3,151** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 155 | $ - | $ 2,345 | $ - | $ - | $ - | $ - | $ - | $ 2,500 |
| C&I Demand Response | $ 155 | $ - | $ 1,073 | $ - | $ - | $ - | $ - | $ - | $ 1,228 |
| **Subtotal: Load Management** | **$ 310** | **$ -** | **$ 3,418** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 3,728** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 816 | $ 4 | $ - | $ 12 | $ - | $ - | $ 20 | $ 50 | $ 903 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 298 | $ 1 | $ 1 | $ 300 |
| Planning | $ 630 | $ 1 | $ - | $ 50 | $ - | $ - | $ 10 | $ 12 | $ 703 |
| Evaluation Measurement and Verification | $ 54 | $ 1 | $ 1,863 | $ - | $ - | $ - | $ 1 | $ 1 | $ 1,920 |
| Evaluation Administrator | $ - | $ - | $ 192 | $ - | $ - | $ - | $ - | $ - | $ 192 |
| Information Technology | $ 396 | $ - | $ 1,368 | $ 45 | $ - | $ - | $ - | $ 50 | $ 1,859 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 416 | $ - | $ - | $ - | $ - | $ - | $ 416 |
| Audits - Financial and Operational | $ - | $ - | $ 60 | $ - | $ - | $ - | $ - | $ - | $ 60 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 6,378 | $ - | $ 6,378 |
| **Subtotal: Admin/Planning Expenditures** | **$ 1,897** | **$ 6** | **$ 3,899** | **$ 107** | **$ -** | **$ 298** | **$ 6,410** | **$ 114** | **$ 12,731** |
| **TOTAL BUDGET** | **$ 12,057** | **$ 36** | **$ 19,121** | **$ 1,175** | **$ 101,728** | **$ 2,951** | **$ 9,228** | **$ 2,479** | **$ 148,774** |

## Eversource Electric Table C Pie Chart (2020)




| Expense Classes | Budget | % of Budget |
|---|---|---|
| Labor | $ 12,057 | 8% |
| Materials & Supplies | $ 36 | 0% |
| Outside Services | $ 19,121 | 13% |
| Contractor Labor | $ 1,175 | 1% |
| Incentives | $ 101,728 | 68% |
| Marketing | $ 2,951 | 2% |
| Other | $ 9,228 | 6% |
| Administrative Expenses | $ 2,479 | 2% |
| **Total** | **$ 148,774** | **100%** |

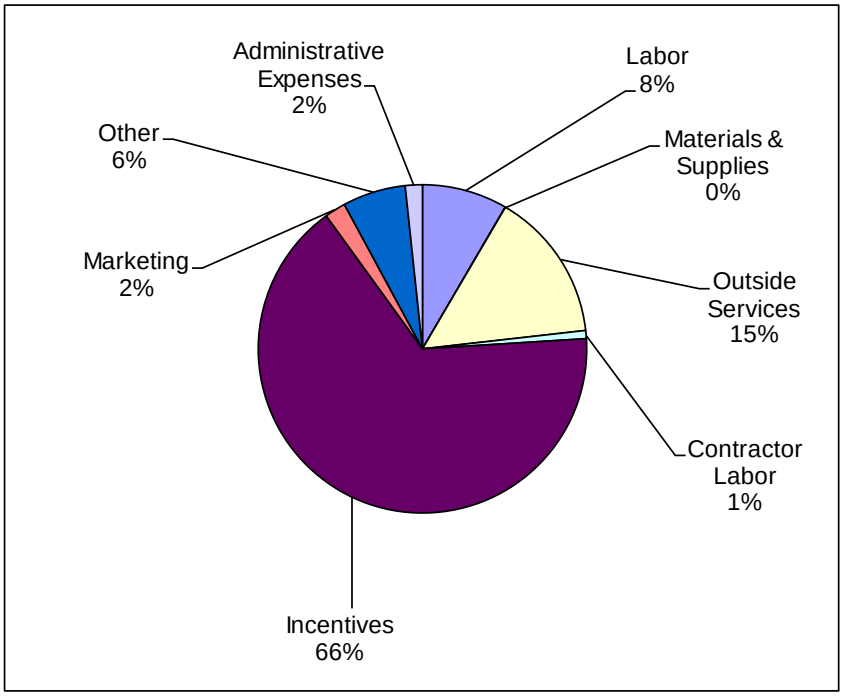
# Table C – Eversource CT Electric Energy Efficiency Budget Details (2021)

## Table C

### Eversource CT Electric 2021 EE Budget Details

| Eversource CT Electric EE BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other ** | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| Residential Retail Products | $ 110 | $ 1 | $ 786 | $ 0 | $ 3,601 | $ 456 | $ 36 | $ 9 | $ 5,000 |
| **Total: Consumer Products** | **$ 110** | **$ 1** | **$ 786** | **$ 0** | **$ 3,601** | **$ 456** | **$ 36** | **$ 9** | **$ 5,000** |
| New Construction, Additions & Major Renovations | $ 171 | $ 1 | $ 18 | $ 1 | $ 2,539 | $ 43 | $ 17 | $ 9 | $ 2,800 |
| Home Energy Solutions - Core Services | $ 1,410 | $ 4 | $ 596 | $ 100 | $ 17,159 | $ 642 | $ 21 | $ 36 | $ 19,968 |
| Home Energy Solutions - HVAC, Water Heaters | $ 76 | $ 1 | $ 196 | $ - | $ 3,350 | $ 91 | $ 18 | $ 18 | $ 3,750 |
| HES-Income Eligible | $ 1,629 | $ 5 | $ 315 | $ 39 | $ 13,304 | $ 608 | $ 46 | $ 54 | $ 16,000 |
| Residential Behavior | $ 85 | $ - | $ 3,015 | $ - | $ - | $ - | $ - | $ - | $ 3,100 |
| **Subtotal: Residential** | **$ 3,481** | **$ 12** | **$ 4,927** | **$ 141** | **$ 39,953** | **$ 1,841** | **$ 138** | **$ 126** | **$ 50,618** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,090 | $ 4 | $ 501 | $ 152 | $ 10,983 | $ 152 | $ 27 | $ 10 | $ 12,918 |
| **Total: Lost Opportunity** | **$ 1,090** | **$ 4** | **$ 501** | **$ 152** | **$ 10,983** | **$ 152** | **$ 27** | **$ 10** | **$ 12,918** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 3,539 | $ 5 | $ 2,020 | $ 688 | $ 30,170 | $ 310 | $ 90 | $ 180 | $ 37,002 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 160 | $ 2 | $ 798 | $ - | $ 2,485 | $ 75 | $ 6 | $ 22 | $ 3,547 |
| **Total: C&I Large Retrofit** | **$ 3,698** | **$ 7** | **$ 2,818** | **$ 688** | **$ 32,654** | **$ 385** | **$ 96** | **$ 202** | **$ 40,549** |
| Small Business Energy Advantage | $ 1,330 | $ 5 | $ 88 | $ - | $ 13,600 | $ 230 | $ 27 | $ 2,000 | $ 17,279 |
| **Subtotal: C&I** | **$ 6,118** | **$ 16** | **$ 3,407** | **$ 841** | **$ 57,237** | **$ 767** | **$ 150** | **$ 2,212** | **$ 70,747** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 73 | $ - | $ 345 | $ - | $ - | $ 35 | $ - | $ 19 | $ 472 |
| Customer Engagement | $ 301 | $ - | $ 1,582 | $ 85 | $ - | $ - | $ - | $ - | $ 1,968 |
| Educate the Students | $ 53 | $ - | $ 345 | $ - | $ - | $ 10 | $ 1 | $ 3 | $ 412 |
| Educate the Workforce | $ 53 | $ - | $ 697 | $ - | $ - | $ - | $ - | $ - | $ 750 |
| **Subtotal: Education & Engagement** | **$ 480** | **$ -** | **$ 2,969** | **$ 85** | **$ -** | **$ 45** | **$ 1** | **$ 22** | **$ 3,602** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 453 | $ - | $ - | $ - | $ - | $ - | $ 453 |
| C&I Financing Support | $ - | $ - | $ - | $ - | $ - | $ - | $ 2,501 | $ - | $ 2,501 |
| Research, Development & Demonstration | $ 66 | $ 2 | $ 88 | $ 2 | $ - | $ - | $ - | $ 5 | $ 162 |
| **Subtotal: Programs/Requirements** | **$ 66** | **$ 2** | **$ 541** | **$ 2** | **$ -** | **$ -** | **$ 2,501** | **$ 5** | **$ 3,117** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | |
| ISO Load Response Program | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Demand Response | $ 160 | $ - | $ 4,640 | $ - | $ - | $ - | $ - | $ - | $ 4,800 |
| C&I Demand Response | $ 160 | $ - | $ 1,404 | $ - | $ - | $ - | $ - | $ - | $ 1,564 |
| **Subtotal: Load Management** | **$ 319** | **$ -** | **$ 6,044** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 6,364** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 816 | $ 4 | $ - | $ 12 | $ - | $ - | $ 20 | $ 50 | $ 903 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 398 | $ 1 | $ 1 | $ 400 |
| Planning | $ 630 | $ 1 | $ - | $ 50 | $ - | $ - | $ 10 | $ 12 | $ 703 |
| Evaluation Measurement and Verification | $ 56 | $ 1 | $ 1,861 | $ - | $ - | $ - | $ 1 | $ 1 | $ 1,920 |
| Evaluation Administrator | $ - | $ - | $ 192 | $ - | $ - | $ - | $ - | $ - | $ 192 |
| Information Technology | $ 408 | $ - | $ 1,336 | $ 45 | $ - | $ - | $ - | $ 50 | $ 1,839 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 416 | $ - | $ - | $ - | $ - | $ - | $ 416 |
| Audits - Financial and Operational | $ - | $ - | $ 60 | $ - | $ - | $ - | $ - | $ - | $ 60 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 6,310 | $ - | $ 6,310 |
| **Subtotal: Admin/Planning Expenditures** | **$ 1,911** | **$ 6** | **$ 3,866** | **$ 107** | **$ -** | **$ 398** | **$ 6,342** | **$ 114** | **$ 12,742** |
| **TOTAL BUDGET** | **$ 12,375** | **$ 36** | **$ 21,754** | **$ 1,175** | **$ 97,190** | **$ 3,051** | **$ 9,132** | **$ 2,479** | **$ 147,191** |

## Eversource Electric Table C Pie Chart (2021)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| Labor | $ | 12,375 | 8% |
| Materials & Supplies | $ | 36 | 0% |
| Outside Services | $ | 21,754 | 15% |
| Contractor Labor | $ | 1,175 | 1% |
| Incentives | $ | 97,190 | 66% |
| Marketing | $ | 3,051 | 2% |
| Other | $ | 9,132 | 6% |
| Administrative Expenses | $ | 2,479 | 2% |
| **Total** | **$** | **147,191** | **100%** |

# Table D – Eversource CT Electric Historical and Projected ($)

**Table D**
**Eversource CT Electric Historical and Projected $**

| RESIDENTIAL | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | $ 8,764,502 | $ 7,782,387 | $ 6,859,521 | $ 6,509,496 | $ 11,561,025 | $ 13,693,622 | $ 14,872,860 | $ 10,154,122 | $ 6,529,899 | $ 8,505,986 | $ 6,000,000 | $ 5,000,000 |
| Appliance Rebate Program | $ 3,615,349 | $ 3,502 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total: Consumer Products** | **$ 12,379,851** | **$ 7,785,889** | **$ 6,859,521** | **$ 6,509,496** | **$ 11,561,025** | **$ 13,693,622** | **$ 14,872,860** | **$ 10,154,122** | **$ 6,529,899** | **$ 8,505,986** | **$ 6,000,000** | **$ 5,000,000** |
| New Construction, Additions & Major Renovations | $ 1,034,433 | $ 1,638,211 | $ 1,338,928 | $ 1,433,966 | $ 1,573,724 | $ 2,516,703 | $ 2,232,996 | $ 2,887,373 | $ 2,204,292 | $ 2,644,901 | $ 2,700,000 | $ 2,800,000 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | $ 22,409,603 | $ 14,981,521 | $ 14,520,592 | $ 16,041,653 | $ 22,290,930 | $ 19,186,404 | $ 15,989,863 | $ 15,512,933 | $ 10,336,611 | $ 17,912,103 | $ 20,906,676 | $ 19,968,292 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ 3,597,327 | $ 4,050,111 | $ 4,048,082 | $ 3,989,546 | $ 4,000,000 | $ 3,750,000 |
| HES-Income Eligible | $ 9,361,764 | $ 12,900,111 | $ 12,143,928 | $ 9,593,140 | $ 17,488,762 | $ 17,345,096 | $ 21,471,052 | $ 16,379,801 | $ 11,599,849 | $ 15,971,230 | $ 16,500,000 | $ 16,000,000 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 2,703,694 | $ 2,392,079 | $ 2,909,233 | $ 2,954,049 | $ 526,083 | $ 1,700,000 | $ 3,100,000 | $ 3,100,000 |
| **Subtotal: Residential** | **$ 45,185,651** | **$ 37,305,732** | **$ 34,862,969** | **$ 33,578,255** | **$ 55,618,135** | **$ 55,133,904** | **$ 61,073,331** | **$ 51,938,389** | **$ 35,244,816** | **$ 50,723,766** | **$ 53,206,676** | **$ 50,618,292** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 8,033,028 | $ 8,395,733 | $ 8,504,845 | $ 9,947,173 | $ 13,875,080 | $ 12,124,674 | $ 12,287,599 | $ 6,718,340 | $ 6,632,890 | $ 12,402,540 | $ 12,565,032 | $ 12,918,272 |
| **Total: Lost Opportunity** | **$ 8,033,028** | **$ 8,395,733** | **$ 8,504,845** | **$ 9,947,173** | **$ 13,875,080** | **$ 12,124,674** | **$ 12,287,599** | **$ 6,718,340** | **$ 6,632,890** | **$ 12,402,540** | **$ 12,565,032** | **$ 12,918,272** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 17,863,695 | $ 23,690,549 | $ 18,722,462 | $ 20,924,237 | $ 29,217,060 | $ 33,338,936 | $ 40,154,158 | $ 24,882,343 | $ 29,689,128 | $ 35,615,415 | $ 39,670,751 | $ 37,002,063 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 1,347,241 | $ 2,617,944 | $ 1,696,269 | $ 1,649,654 | $ 2,422,682 | $ 2,737,390 | $ 2,501,793 | $ 1,484,576 | $ 2,977,133 | $ 3,315,763 | $ 3,485,670 | $ 3,547,310 |
| PRIME (2009-2015) | $ 476,627 | $ 488,962 | $ 540,753 | $ 478,403 | $ 476,451 | $ 603,146 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total: C&I Large Retrofit** | **$ 19,687,563** | **$ 26,797,455** | **$ 20,959,484** | **$ 23,052,294** | **$ 32,116,193** | **$ 36,679,472** | **$ 42,655,951** | **$ 26,366,920** | **$ 32,666,260** | **$ 38,931,178** | **$ 43,156,421** | **$ 40,549,372** |
| Small Business Energy Advantage | $ 12,100,944 | $ 11,926,131 | $ 11,795,666 | $ 13,329,552 | $ 16,021,475 | $ 15,508,750 | $ 17,615,309 | $ 16,212,430 | $ 11,613,734 | $ 15,142,544 | $ 16,697,946 | $ 17,279,390 |
| **Subtotal: C&I** | **$ 39,821,535** | **$ 47,119,319** | **$ 41,259,995** | **$ 46,329,019** | **$ 62,012,749** | **$ 64,312,896** | **$ 72,558,859** | **$ 49,297,689** | **$ 50,912,884** | **$ 66,476,261** | **$ 72,419,399** | **$ 70,747,035** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | | | | |
| Educate the Public | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,926,470 | $ 1,934,418 | $ 562,325 | $ 656,954 | $ 657,285 | $ 472,084 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ 1,817,979 | $ 1,968,000 | $ 1,603,922 | $ 1,507,721 | $ 1,350,290 | $ 1,539,419 | $ 1,968,000 | $ 1,968,000 |
| Educate the Students | $ - | $ - | $ - | $ - | $ - | $ - | $ 392,352 | $ 706,601 | $ (1,626) | $ 274,562 | $ 412,236 | $ 412,236 |
| Educate the Workforce | $ - | $ - | $ - | $ - | $ - | $ - | $ 268,446 | $ 168,211 | $ 84,770 | $ 166,125 | $ 500,000 | $ 750,000 |
| SmartLiving Center® - Museum Partnerships | $ 131,950 | $ 188,881 | $ 507,403 | $ 274,908 | $ 1,157,138 | $ 463,617 | $ - | $ - | $ - | $ - | $ - | $ - |
| Science Center | $ - | $ - | $ 166,000 | $ 150,392 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| EE Smarts/K-12 Education | $ 331,133 | $ 293,167 | $ 439,078 | $ 459,334 | $ 367,115 | $ 500,780 | $ - | $ - | $ - | $ - | $ - | $ - |
| Clean Energy Communities/Behavior Pilot | $ 960,047 | $ 436,205 | $ 313,211 | $ 729,253 | $ 1,045,235 | $ 1,348,330 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Education & Engagement** | **$ 1,423,130** | **$ 918,253** | **$ 1,425,692** | **$ 1,613,887** | **$ 4,387,467** | **$ 4,280,727** | **$ 4,191,190** | **$ 4,316,951** | **$ 1,995,759** | **$ 2,637,061** | **$ 3,537,521** | **$ 3,602,320** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ 18,569,958 | $ 3,097,816 | $ 5,924,245 | $ 416,865 | $ 1,509,746 | $ 2,006,330 | $ 1,929,824 | $ 477,326 | $ 1,032,277 | $ 1,500,000 | $ 458,365 | $ 453,364 |
| C&I Financing Support (2016-2018) | $ - | $ - | $ - | $ - | $ - | $ - | $ 6,994,639 | $ 4,060,806 | $ 2,677,386 | $ 17,569,775 | $ 2,528,933 | $ 2,501,339 |
| Research, Development & Demonstration | $ 102,434 | $ 86,259 | $ 176,716 | $ 198,218 | $ 267,317 | $ 177,335 | $ 208,762 | $ 84,246 | $ 281,632 | $ 168,878 | $ 164,016 | $ 162,227 |
| Institute for Sustainable Energy (ECSU) (moved to Educate the Workforce) | $ 400,000 | $ 448,000 | $ 448,000 | $ 448,000 | $ 358,400 | $ 396,800 | $ - | $ - | $ - | $ - | $ - | $ - |
| ESPC Project Manager - Lead By Example | $ - | $ - | $ - | $ 38,734 | $ 82,586 | $ 25,857 | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Loan Program | $ 204,898 | $ 56,800 | $ 702,603 | $ 147,078 | $ 188,838 | $ 331,106 | $ - | $ - | $ - | $ - | $ - | $ - |
| EE Loan Defaults | $ 110,056 | $ 77,739 | $ 93,127 | $ 170,077 | $ 75,809 | $ 179,197 | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Self Funding | $ - | $ - | $ - | $ - | $ 4,019,676 | $ 4,593,962 | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Funding Requests | $ 325,385 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Other Programs/Requirements** | **$ 19,712,731** | **$ 3,766,614** | **$ 7,344,691** | **$ 1,418,972** | **$ 6,502,372** | **$ 7,710,587** | **$ 9,133,225** | **$ 4,622,378** | **$ 3,991,295** | **$ 19,238,653** | **$ 3,151,315** | **$ 3,116,930** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | | |
| ISO Load Response Program | $ 2,864,364 | $ 4,955,923 | $ 3,740,450 | $ 4,128,416 | $ 3,632,291 | $ 2,574,236 | $ 2,414,427 | $ 2,387,351 | $ 1,230,295 | $ - | $ - | $ - |
| Residential Demand Response | $ - | $ - | $ - | $ - | $ - | $ - | $ 859,080 | $ 891,827 | $ 528,780 | $ 837,411 | $ 2,500,000 | $ 4,800,000 |
| C&I Demand Response | $ - | $ - | $ - | $ - | $ - | $ - | $ 45,345 | $ 785,216 | $ 237,674 | $ 400,452 | $ 1,228,154 | $ 1,563,771 |
| **Subtotal: Load Management** | **$ 2,864,364** | **$ 4,955,923** | **$ 3,740,450** | **$ 4,128,416** | **$ 3,632,291** | **$ 2,574,236** | **$ 3,318,852** | **$ 4,064,394** | **$ 1,996,750** | **$ 1,237,863** | **$ 3,728,155** | **$ 6,363,771** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | | | | |
| Administration | $ 835,729 | $ 951,467 | $ 1,539,439 | $ 1,985,104 | $ 957,493 | $ 1,059,874 | $ 555,697 | $ 721,290 | $ 813,659 | $ 622,665 | $ 902,597 | $ 902,597 |
| Marketing Plan | $ 63,349 | $ 17,056 | $ 568,324 | $ 41,274 | $ 599,189 | $ 789,065 | $ 771,953 | $ 373,937 | $ 139,080 | $ 131,670 | $ 300,000 | $ 400,000 |
| Planning | $ 573,274 | $ 669,365 | $ 736,877 | $ 680,008 | $ 659,032 | $ 670,254 | $ 632,015 | $ 594,212 | $ 601,069 | $ 480,234 | $ 703,170 | $ 703,170 |
| Evaluation Measurement and Verification | $ 1,480,052 | $ 239,172 | $ 2,123,988 | $ 2,044,455 | $ 1,642,153 | $ 1,764,572 | $ 1,520,745 | $ 1,920,000 | $ 1,829,414 | $ 1,023,226 | $ 1,920,000 | $ 1,920,000 |
| Evaluation Administrator | $ - | $ - | $ - | $ - | $ 269,541 | $ 180,399 | $ 199,281 | $ 177,694 | $ 176,199 | $ 186,825 | $ 192,000 | $ 192,000 |
| Information Technology | $ 1,810,543 | $ 1,764,932 | $ 2,244,144 | $ 1,934,732 | $ 807,911 | $ 1,037,433 | $ 1,579,383 | $ 541,146 | $ 1,147,062 | $ 1,627,322 | $ 1,859,385 | $ 1,839,097 |
| Energy Efficiency Board Consultants | $ 431,860 | $ 470,724 | $ 493,863 | $ 475,046 | $ 401,216 | $ 410,204 | $ 366,781 | $ 314,264 | $ 306,176 | $ 318,423 | $ 416,000 | $ 416,000 |
| Audits - Financial and Operational | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 42,483 | $ 60,000 | $ 60,000 | $ 60,000 | $ 60,000 |
| Performance Management Incentive (PMI) | $ 5,474,571 | $ 3,773,709 | $ 6,758,883 | $ 6,728,101 | $ 7,560,041 | $ 8,197,955 | $ 9,010,198 | $ 8,111,330 | $ 6,953,613 | $ 6,488,942 | $ 6,377,770 | $ 6,309,595 |
| **Admin/Planning Expenditures** | **$ 10,669,378** | **$ 7,886,425** | **$ 14,465,518** | **$ 13,888,720** | **$ 12,896,576** | **$ 14,109,756** | **$ 14,636,053** | **$ 12,796,357** | **$ 12,026,273** | **$ 10,939,307** | **$ 12,730,923** | **$ 12,742,459** |
| **TOTAL (includes ISO Load Response)** | **$ 119,676,789** | **$ 101,952,266** | **$ 103,099,315** | **$ 100,957,271** | **$ 145,049,590** | **$ 148,122,106** | **$ 164,911,511** | **$ 127,036,159** | **$ 106,167,776** | **$ 151,252,912** | **$ 148,773,988** | **$ 147,190,807** |
| **TOTAL (excludes ISO Load Response)** | **$ 116,812,425** | **$ 96,996,343** | **$ 99,358,865** | **$ 96,828,854** | **$ 141,417,299** | **$ 145,547,870** | **$ 162,497,084** | **$ 124,648,808** | **$ 104,937,481** | **$ 151,252,912** | **$ 148,773,988** | **$ 147,190,807** |

# Table D1 – Eversource CT Electric Historical and Projected (kW)

**Table D1**
**Eversource CT Electric Historical and Projected kW**

| RESIDENTIAL | Demand Savings (kW) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | 14,589 | 11,778 | 6,355 | 5,600 | 5,710 | 7,947 | 10,155 | 9,557 | 3,433 | 3,456 | 2,101 | 1,060 |
| **Total: Consumer Products** | **14,589** | **11,778** | **6,355** | **5,600** | **5,710** | **7,947** | **10,155** | **9,557** | **3,433** | **3,456** | **2,101** | **1,060** |
| New Construction, Additions & Major Renovations | 339 | 564 | 574 | 562 | 977 | 928 | 903 | 1,252 | 903 | 915 | 450 | 475 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | 5,054 | 2,521 | 2,626 | 2,852 | 4,061 | 3,519 | 2,404 | 2,940 | 2,305 | 3,831 | 3,832 | 3,080 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 673 | 805 | 750 | 693 | 1,045 | 971 |
| HES-Income Eligible | 1,146 | 996 | 749 | 610 | 1,002 | 1,328 | 1,875 | 1,598 | 1,380 | 1,790 | 1,614 | 1,429 |
| Residential Behavior | - | - | - | - | 7,473 | 12,520 | 4,066 | 4,066 | 2,508 | 1,757 | 1,655 | 1,427 |
| **Subtotal: Residential** | **21,128** | **15,859** | **10,304** | **9,623** | **19,222** | **26,242** | **20,078** | **20,219** | **11,279** | **12,442** | **10,698** | **8,441** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 4,039 | 4,103 | 7,705 | 6,523 | 7,793 | 7,103 | 6,564 | 3,962 | 2,779 | 4,449 | 4,285 | 4,126 |
| **Total: Lost Opportunity** | **4,039** | **4,103** | **7,705** | **6,523** | **7,793** | **7,103** | **6,564** | **3,962** | **2,779** | **4,449** | **4,285** | **4,126** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 8,693 | 8,761 | 10,669 | 7,843 | 10,798 | 14,840 | 14,567 | 13,246 | 13,193 | 11,529 | 12,324 | 11,491 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 531 | 145 | 977 | 789 | 1,269 | 1,340 | 835 | 652 | 1,271 | 1,178 | 2,150 | 2,296 |
| PRIME (2009-2015) | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total: C&I Large Retrofit** | **9,224** | **8,906** | **11,646** | **8,632** | **12,067** | **16,180** | **15,402** | **13,898** | **14,464** | **12,707** | **14,474** | **13,787** |
| Small Business Energy Advantage | 5,244 | 4,759 | 3,692 | 2,943 | 3,169 | 4,140 | 5,519 | 5,247 | 4,530 | 5,678 | 4,471 | 4,392 |
| **Subtotal: C&I** | **18,507** | **17,768** | **23,043** | **18,099** | **23,029** | **27,423** | **27,486** | **23,106** | **21,773** | **22,833** | **23,230** | **22,304** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | | |
| ISO Load Response Program | 118,432 | 92,474 | 91,403 | 95,642 | 88,627 | 112,487 | 36,097 | 40,746 | 39,679 | - | - | - |
| Residential Demand Response | - | - | - | - | - | - | - | - | - | 1,005 | 3,000 | 5,760 |
| C&I Demand Response | - | - | - | - | - | - | - | - | - | 3,010 | 8,950 | 10,950 |
| **Subtotal: Load Management** | **118,432** | **92,474** | **91,403** | **95,642** | **88,627** | **112,487** | **36,097** | **40,746** | **39,679** | **4,015** | **11,950** | **16,710** |
| **TOTAL (includes ISO Load Response)** | **158,067** | **126,101** | **124,750** | **123,363** | **130,878** | **166,152** | **83,660** | **84,071** | **72,731** | **39,290** | **45,878** | **47,456** |
| **TOTAL (excludes ISO Load Response)** | **39,635** | **33,627** | **33,347** | **27,721** | **42,251** | **53,665** | **47,563** | **43,325** | **33,052** | **39,290** | **45,878** | **47,456** |

# Table D2 – Eversource CT Electric Historical and Projected Annual kWh

**Eversource CT Electric Historical and Projected Annual kWh**

| RESIDENTIAL | Annual Savings kWh (000's) 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | 153,834 | 133,555 | 71,370 | 62,949 | 64,213 | 64,799 | 82,138 | 77,198 | 24,499 | 26,635 | 16,568 | 9,100 |
| **Total: Consumer Products** | **153,834** | **133,555** | **71,370** | **62,949** | **64,213** | **64,799** | **82,138** | **77,198** | **24,499** | **26,635** | **16,568** | **9,100** |
| New Construction, Additions & Major Renovations | 1,581 | 2,581 | 1,625 | 1,896 | 2,828 | 3,540 | 2,363 | 3,250 | 2,244 | 4,308 | 2,601 | 2,706 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | 22,724 | 16,190 | 15,494 | 16,559 | 24,010 | 21,501 | 15,322 | 18,176 | 13,571 | 20,059 | 16,819 | 9,020 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 8,123 | 13,725 | 7,158 | 3,089 | 3,603 | 3,351 |
| HES-Income Eligible | 12,538 | 18,173 | 11,099 | 8,187 | 11,137 | 14,098 | 15,891 | 16,666 | 13,055 | 17,340 | 16,096 | 14,802 |
| Residential Behavior | - | - | - | - | 28,928 | 48,466 | 17,811 | 17,811 | 21,968 | 15,395 | 14,500 | 12,500 |
| **Subtotal: Residential** | **190,678** | **170,500** | **99,588** | **89,592** | **131,116** | **152,405** | **141,650** | **146,825** | **82,495** | **86,826** | **70,188** | **51,479** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 21,451 | 21,890 | 33,973 | 38,741 | 43,422 | 37,774 | 34,278 | 23,527 | 17,971 | 27,643 | 26,479 | 25,493 |
| **Total: Lost Opportunity** | **21,451** | **21,890** | **33,973** | **38,741** | **43,422** | **37,774** | **34,278** | **23,527** | **17,971** | **27,643** | **26,479** | **25,493** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 62,208 | 62,521 | 73,331 | 56,899 | 82,319 | 101,070 | 118,741 | 86,995 | 96,015 | 86,641 | 93,030 | 86,539 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 3,872 | 2,888 | 11,137 | 4,325 | 11,141 | 8,511 | 8,263 | 5,491 | 8,668 | 7,816 | 11,073 | 11,090 |
| PRIME (2009-2015) | 2,147 | 3,364 | 2,344 | 1,948 | 1,671 | 1,950 | - | - | - | - | - | - |
| **Total: C&I Large Retrofit** | **68,227** | **68,773** | **86,812** | **63,172** | **95,132** | **111,532** | **127,004** | **92,486** | **104,683** | **94,457** | **104,103** | **97,628** |
| Small Business Energy Advantage | 30,392 | 29,681 | 28,943 | 26,801 | 32,546 | 32,587 | 34,603 | 31,576 | 27,587 | 37,904 | 34,493 | 33,876 |
| **Subtotal: C&I** | **120,071** | **120,344** | **149,728** | **128,713** | **171,100** | **181,893** | **195,885** | **147,590** | **150,240** | **160,004** | **165,075** | **156,998** |
| **TOTAL (includes ISO Load Response)** | **310,748** | **290,844** | **249,316** | **218,305** | **302,216** | **334,298** | **337,535** | **294,414** | **232,735** | **246,830** | **235,262** | **208,476** |
| **TOTAL (excludes ISO Load Response)** | **310,748** | **290,844** | **249,316** | **218,305** | **302,216** | **334,298** | **337,535** | **294,414** | **232,735** | **246,830** | **235,262** | **208,476** |

# Table D3 – Eversource CT Electric Historical and Projected Lifetime kWh

**Table D3**
**Eversource CT Electric Historical and Projected Lifetime kWh**

| | Lifetime Savings kWh (000's) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | **2010 Actual** | **2011 Actual** | **2012 Actual** | **2013 Actual** | **2014 Actual** | **2015 Actual** | **2016 Actual** | **2017 Actual** | **2018 Actual** | **2019 Goals** | **2020 Goals** | **2021 Goals** |
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | 730,452 | 530,264 | 369,780 | 398,800 | 565,647 | 654,001 | 934,999 | 611,162 | 148,050 | 142,457 | 78,641 | 46,580 |
| **Total: Consumer Products** | **730,452** | **530,264** | **369,780** | **398,800** | **565,647** | **654,001** | **934,999** | **611,162** | **148,050** | **142,457** | **78,641** | **46,580** |
| New Construction, Additions & Major Renovations | 25,469 | 43,198 | 28,472 | 31,175 | 43,056 | 57,175 | 39,977 | 50,862 | 35,839 | 69,040 | 58,315 | 63,867 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | 264,136 | 158,652 | 146,476 | 171,660 | 284,193 | 267,677 | 188,785 | 198,163 | 130,728 | 173,320 | 153,198 | 130,078 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 108,423 | 204,516 | 118,555 | 50,746 | 58,488 | 54,393 |
| HES-Income Eligible | 104,256 | 173,726 | 159,905 | 113,222 | 150,565 | 166,351 | 193,412 | 205,101 | 149,350 | 152,851 | 104,375 | 84,986 |
| Residential Behavior | - | - | - | - | 57,856 | 96,933 | 45,116 | 45,116 | 56,743 | 39,765 | 36,729 | 31,663 |
| **Subtotal: Residential** | **1,124,313** | **905,840** | **704,633** | **714,857** | **1,101,316** | **1,242,137** | **1,510,712** | **1,314,918** | **639,265** | **628,179** | **489,745** | **411,567** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 330,357 | 330,506 | 509,148 | 596,826 | 667,358 | 572,757 | 520,576 | 348,323 | 273,280 | 419,777 | 401,955 | 386,987 |
| **Total: Lost Opportunity** | **330,357** | **330,506** | **509,148** | **596,826** | **667,358** | **572,757** | **520,576** | **348,323** | **273,280** | **419,777** | **401,955** | **386,987** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 769,087 | 750,126 | 863,093 | 672,470 | 953,547 | 1,142,216 | 1,354,017 | 986,891 | 1,127,699 | 1,001,964 | 1,075,156 | 999,415 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 32,401 | 25,754 | 94,042 | 36,510 | 83,564 | 53,438 | 51,663 | 30,085 | 44,465 | 48,436 | 74,482 | 74,755 |
| PRIME (2009-2015) | 10,734 | 16,819 | 11,711 | 9,739 | 8,355 | 9,751 | - | - | - | - | - | - |
| **Total: C&I Large Retrofit** | **812,223** | **792,699** | **968,846** | **718,720** | **1,045,466** | **1,205,405** | **1,405,680** | **1,016,976** | **1,172,163** | **1,050,401** | **1,149,638** | **1,074,170** |
| Small Business Energy Advantage | 376,215 | 368,832 | 353,696 | 325,004 | 396,812 | 404,003 | 433,416 | 393,553 | 341,246 | 462,155 | 427,797 | 438,966 |
| **Subtotal: C&I** | **1,518,795** | **1,492,037** | **1,831,690** | **1,640,549** | **2,109,636** | **2,182,165** | **2,359,672** | **1,758,852** | **1,786,689** | **1,932,333** | **1,979,390** | **1,900,122** |
| **TOTAL (includes ISO Load Response)** | **2,643,108** | **2,397,877** | **2,536,323** | **2,355,406** | **3,210,953** | **3,424,302** | **3,870,384** | **3,073,769** | **2,425,954** | **2,560,512** | **2,469,135** | **2,311,689** |
| **TOTAL (excludes ISO Load Response)** | **2,643,108** | **2,397,877** | **2,536,323** | **2,355,406** | **3,210,953** | **3,424,302** | **3,870,384** | **3,073,769** | **2,425,954** | **2,560,512** | **2,469,135** | **2,311,689** |

# Table D4 – Eversource CT Electric Historical and Projected Units

**Table D4**
**Eversource CT Electric Historical and Projected Units**

| RESIDENTIAL | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Units | | | | | | |
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | 4,046,226 | 3,384,219 | 2,322,287 | 2,176,584 | 2,910,409 | 2,853,482 | 3,278,554 | 3,592,169 | 2,636,995 | 2,595,609 | 1,682,051 | 868,609 |
| Appliance Retirement | 1,232 | 633 | - | - | - | - | - | - | - | - | - | - |
| **Total: Consumer Products** | **4,047,458** | **3,384,852** | **2,322,287** | **2,176,584** | **2,910,409** | **2,853,482** | **3,278,554** | **3,592,169** | **2,636,995** | **2,595,609** | **1,682,051** | **868,609** |
| New Construction, Additions & Major Renovations | 604 | 706 | 870 | 770 | 1,486 | 439 | 586 | 1,892 | 1,657 | 920 | 982 | 1,098 |
| Home Energy Solution (HES) | | | | | | | | | | | | |
| HES Furnace | - | 15 | 36 | 104 | 54 | - | - | - | - | - | - | - |
| HES Heat Pump Water Heater | - | 93 | 175 | 378 | 541 | 1,015 | - | - | - | - | - | - |
| HES Insulation Rebate | 1,058 | 1,034 | 1,180 | 1,840 | 3,592 | 2,848 | - | - | - | - | - | - |
| HES Window Rebate | - | 91 | 132 | 2,231 | 4,166 | 3,605 | - | - | - | - | - | - |
| HES Appliance Retirement | - | - | - | 165 | 278 | 187 | - | - | - | - | - | - |
| HES HVAC | - | 143 | 301 | 303 | 169 | 135 | - | - | - | - | - | - |
| Home Energy Solutions (Duct Sealing, Lighting) (Core Services only 2016-2021) | 21,940 | 15,586 | 17,856 | 14,080 | 16,906 | 12,428 | 11,051 | 18,267 | 14,444 | 19,945 | 25,760 | 31,574 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 16,058 | 21,872 | 17,099 | 15,553 | 13,850 | 12,880 |
| Residential HVAC | 6,270 | 3,565 | 2,803 | 3,357 | 8,027 | 14,377 | - | - | - | - | - | - |
| Energy Conservation Loan Program (ECLP) | 272 | 236 | 169 | - | - | - | - | - | - | - | - | - |
| **Total: Home Energy Solution (HES)** | **29,540** | **20,763** | **22,652** | **22,458** | **33,733** | **34,595** | **27,109** | **40,139** | **31,543** | **35,499** | **39,609** | **44,454** |
| HES-Income Eligible | 10,797 | 14,609 | 8,424 | 7,824 | 14,711 | 12,203 | 9,599 | 21,582 | 15,039 | 25,831 | 26,095 | 25,472 |
| Residential Behavior | - | - | - | - | 339,218 | 296,871 | 405,959 | 506,000 | 119,622 | 140,000 | 250,000 | 250,000 |
| **Subtotal: Residential** | **4,088,399** | **3,420,930** | **2,354,233** | **2,207,636** | **3,299,557** | **3,197,590** | **3,721,807** | **4,161,782** | **2,804,856** | **2,797,858** | **1,998,737** | **1,189,633** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 509 | 446 | 484 | 436 | 561 | 560 | 528 | 484 | 326 | 360 | 344 | 331 |
| **Total: Lost Opportunity** | **509** | **446** | **484** | **436** | **561** | **560** | **528** | **484** | **326** | **360** | **344** | **331** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 886 | 942 | 859 | 762 | 789 | 796 | 1,111 | 1,144 | 1,147 | 1,216 | 1,306 | 1,215 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 20 | 17 | 38 | 23 | 55 | 78 | 194 | 144 | 132 | 177 | 175 | 169 |
| PRIME (2009-2015) | 88 | 62 | 99 | 76 | 65 | 87 | - | - | - | - | - | - |
| **Total: C&I Large Retrofit** | **994** | **1,021** | **996** | **861** | **909** | **961** | **1,305** | **1,288** | **1,279** | **1,393** | **1,481** | **1,384** |
| Small Business Energy Advantage | 1,546 | 1,504 | 1,519 | 1,277 | 1,571 | 1,349 | 1,318 | 1,275 | 920 | 1,766 | 1,605 | 1,576 |
| **Subtotal: C&I** | **3,049** | **2,971** | **2,999** | **2,574** | **3,041** | **2,870** | **3,151** | **3,047** | **2,525** | **3,520** | **3,430** | **3,291** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | | |
| ISO Load Response Program | 416 | 311 | 263 | 225 | 220 | 215 | 113 | 78 | 78 | | - | - |
| Residential Demand Response | - | - | - | - | - | - | - | - | - | 3,350 | 10,000 | 19,200 |
| C&I Demand Response | - | - | - | - | - | - | - | - | - | 12 | 34 | 46 |
| **Subtotal: Load Management** | **416** | **311** | **263** | **225** | **220** | **215** | **113** | **78** | **78** | **3,362** | **10,034** | **19,246** |
| **TOTAL (includes ISO Load Response)** | **4,091,864** | **3,424,212** | **2,357,495** | **2,210,435** | **3,302,818** | **3,200,675** | **3,725,071** | **4,164,907** | **2,807,459** | **2,801,378** | **2,002,167** | **1,192,924** |
| **TOTAL (excludes ISO Load Response)** | **4,091,448** | **3,423,901** | **2,357,232** | **2,210,210** | **3,302,598** | **3,200,460** | **3,724,958** | **4,164,829** | **2,807,381** | **2,801,378** | **2,002,167** | **1,192,924** |

# Table D5 – Eversource CT Electric Historical and Cost per Projected kW

**Table D5**

**Eversource CT Electric Historical and Cost per Projected kW**

| RESIDENTIAL | Cost per Load Savings kW 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | $ 849 | $ 661 | $ 1,079 | $ 1,162 | $ 2,025 | $ 1,723 | $ 1,465 | $ 1,062 | $ 1,902 | $ 2,461 | $ 2,855 | $ 4,718 |
| **Total: Consumer Products** | **$ 849** | **$ 661** | **$ 1,079** | **$ 1,162** | **$ 2,025** | **$ 1,723** | **$ 1,465** | **$ 1,062** | **$ 1,902** | **$ 2,461** | **$ 2,855** | **$ 4,718** |
| New Construction, Additions & Major Renovations | $ 3,051 | $ 2,905 | $ 2,333 | $ 2,553 | $ 1,611 | $ 2,712 | $ 2,472 | $ 2,306 | $ 2,441 | $ 2,891 | $ 5,997 | $ 5,895 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | $ 4,434 | $ 5,943 | $ 5,530 | $ 5,626 | $ 5,489 | $ 5,452 | $ 6,650 | $ 5,277 | $ 4,484 | $ 4,676 | $ 5,455 | $ 6,483 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ 5,344 | $ 5,030 | $ 5,397 | $ 5,754 | $ 3,830 | $ 3,860 |
| HES-Income Eligible | $ 8,169 | $ 12,952 | $ 16,214 | $ 15,739 | $ 17,458 | $ 13,061 | $ 11,451 | $ 10,251 | $ 8,406 | $ 8,924 | $ 10,220 | $ 11,200 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 362 | $ 191 | $ 715 | $ 726 | $ 210 | $ 967 | $ 1,873 | $ 2,172 |
| **Subtotal: Residential** | **$ 2,139** | **$ 2,352** | **$ 3,383** | **$ 3,489** | **$ 2,894** | **$ 2,101** | **$ 3,042** | **$ 2,569** | **$ 3,125** | **$ 4,077** | **$ 4,973** | **$ 5,996** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,989 | $ 2,046 | $ 1,104 | $ 1,525 | $ 1,780 | $ 1,707 | $ 1,872 | $ 1,696 | $ 2,387 | $ 2,788 | $ 2,932 | $ 3,131 |
| **Total: Lost Opportunity** | **$ 1,989** | **$ 2,046** | **$ 1,104** | **$ 1,525** | **$ 1,780** | **$ 1,707** | **$ 1,872** | **$ 1,696** | **$ 2,387** | **$ 2,788** | **$ 2,932** | **$ 3,131** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 2,055 | $ 2,704 | $ 1,755 | $ 2,668 | $ 2,706 | $ 2,247 | $ 2,756 | $ 1,878 | $ 2,250 | $ 3,089 | $ 3,219 | $ 3,220 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 2,537 | $ 18,055 | $ 1,736 | $ 2,090 | $ 1,909 | $ 2,043 | $ 2,997 | $ 2,278 | $ 2,342 | $ 2,815 | $ 1,621 | $ 1,545 |
| **Total: C&I Large Retrofit** | **$ 2,134** | **$ 3,009** | **$ 1,800** | **$ 2,670** | **$ 2,662** | **$ 2,267** | **$ 2,770** | **$ 1,897** | **$ 2,258** | **$ 3,064** | **$ 2,982** | **$ 2,941** |
| Small Business Energy Advantage | $ 2,308 | $ 2,506 | $ 3,195 | $ 4,529 | $ 5,056 | $ 3,746 | $ 3,192 | $ 3,090 | $ 2,564 | $ 2,667 | $ 3,735 | $ 3,935 |
| **Subtotal: C&I** | **$ 2,152** | **$ 2,652** | **$ 1,791** | **$ 2,560** | **$ 2,693** | **$ 2,345** | **$ 2,640** | **$ 2,134** | **$ 2,338** | **$ 2,911** | **$ 3,117** | **$ 3,172** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | | |
| ISO Load Response Program | $ 24 | $ 54 | $ 41 | $ 43 | $ 41 | $ 23 | $ 67 | $ 59 | $ 31 | $ - | $ - | $ - |
| Residential Demand Response | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 833 | $ 833 | $ 833 |
| C&I Demand Response | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 133 | $ 137 | $ 143 |
| **Subtotal: Load Management** | **$ 24** | **$ 54** | **$ 41** | **$ 43** | **$ 41** | **$ 23** | **$ 92** | **$ 100** | **$ 50** | **$ -** | **$ -** | **$ -** |
| **TOTAL (includes ISO Load Response)** | **$ 757** | **$ 808** | **$ 826** | **$ 818** | **$ 1,108** | **$ 891** | **$ 1,971** | **$ 1,511** | **$ 1,460** | **$ 3,850** | **$ 3,243** | **$ 3,102** |
| **TOTAL (excludes ISO Load Response)** | **$ 2,947** | **$ 2,884** | **$ 2,980** | **$ 3,493** | **$ 3,347** | **$ 2,712** | **$ 3,416** | **$ 2,877** | **$ 3,175** | **$ 3,850** | **$ 3,243** | **$ 3,102** |

# Table D6 – Eversource CT Electric Historical and Cost per Projected Annual kWh

**Table D6**

**Eversource CT Electric Historical and Cost per Projected Annual kWh**

| RESIDENTIAL | Cost per Annual Savings kWh 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | $ 0.080 | $ 0.058 | $ 0.096 | $ 0.103 | $ 0.180 | $ 0.211 | $ 0.181 | $ 0.132 | $ 0.267 | $ 0.319 | $ 0.362 | $ 0.549 |
| **Total: Consumer Products** | **$ 0.080** | **$ 0.058** | **$ 0.096** | **$ 0.103** | **$ 0.180** | **$ 0.211** | **$ 0.181** | **$ 0.132** | **$ 0.267** | **$ 0.319** | **$ 0.362** | **$ 0.549** |
| New Construction, Additions & Major Renovations | $ 0.654 | $ 0.635 | $ 0.824 | $ 0.756 | $ 0.557 | $ 0.711 | $ 0.945 | $ 0.888 | $ 0.982 | $ 0.614 | $ 1.038 | $ 1.035 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | $ 0.986 | $ 0.925 | $ 0.937 | $ 0.969 | $ 0.928 | $ 0.892 | $ 1.044 | $ 0.853 | $ 0.762 | $ 0.893 | $ 1.243 | $ 2.214 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ 0.443 | $ 0.295 | $ 0.566 | $ 1.291 | $ 1.110 | $ 1.119 |
| HES-Income Eligible | $ 0.747 | $ 0.710 | $ 1.094 | $ 1.172 | $ 1.570 | $ 1.230 | $ 1.351 | $ 0.983 | $ 0.889 | $ 0.921 | $ 1.025 | $ 1.081 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 0.093 | $ 0.049 | $ 0.163 | $ 0.166 | $ 0.024 | $ 0.110 | $ 0.214 | $ 0.248 |
| **Subtotal: Residential** | **$ 0.237** | **$ 0.219** | **$ 0.350** | **$ 0.375** | **$ 0.424** | **$ 0.362** | **$ 0.431** | **$ 0.354** | **$ 0.427** | **$ 0.584** | **$ 0.758** | **$ 0.983** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.374 | $ 0.384 | $ 0.250 | $ 0.257 | $ 0.320 | $ 0.321 | $ 0.358 | $ 0.286 | $ 0.369 | $ 0.449 | $ 0.475 | $ 0.507 |
| **Total: Lost Opportunity** | **$ 0.374** | **$ 0.384** | **$ 0.250** | **$ 0.257** | **$ 0.320** | **$ 0.321** | **$ 0.358** | **$ 0.286** | **$ 0.369** | **$ 0.449** | **$ 0.475** | **$ 0.507** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 0.287 | $ 0.379 | $ 0.255 | $ 0.368 | $ 0.355 | $ 0.330 | $ 0.338 | $ 0.286 | $ 0.309 | $ 0.411 | $ 0.426 | $ 0.428 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 0.348 | $ 0.907 | $ 0.152 | $ 0.381 | $ 0.217 | $ 0.322 | $ 0.303 | $ 0.270 | $ 0.343 | $ 0.424 | $ 0.315 | $ 0.320 |
| PRIME (2009-2015) | $ 0.222 | $ 0.145 | $ 0.231 | $ 0.246 | $ 0.285 | $ 0.309 | $ - | $ - | $ - | $ 1.000 | $ 2.000 | $ 3.000 |
| **Total: C&I Large Retrofit** | **$ 0.289** | **$ 0.390** | **$ 0.241** | **$ 0.365** | **$ 0.338** | **$ 0.329** | **$ 0.336** | **$ 0.285** | **$ 0.312** | **$ 0.412** | **$ 0.415** | **$ 0.415** |
| Small Business Energy Advantage | $ 0.398 | $ 0.402 | $ 0.408 | $ 0.497 | $ 0.492 | $ 0.476 | $ 0.509 | $ 0.513 | $ 0.421 | $ 0.399 | $ 0.484 | $ 0.510 |
| **Subtotal: C&I** | **$ 0.332** | **$ 0.392** | **$ 0.276** | **$ 0.360** | **$ 0.362** | **$ 0.354** | **$ 0.370** | **$ 0.334** | **$ 0.339** | **$ 0.415** | **$ 0.439** | **$ 0.451** |
| **TOTAL (includes ISO Load Response)** | **$ 0.385** | **$ 0.351** | **$ 0.414** | **$ 0.462** | **$ 0.480** | **$ 0.443** | **$ 0.489** | **$ 0.431** | **$ 0.456** | **$ 0.613** | **$ 0.632** | **$ 0.706** |
| **TOTAL (excludes ISO Load Response)** | **$ 0.376** | **$ 0.333** | **$ 0.399** | **$ 0.444** | **$ 0.468** | **$ 0.435** | **$ 0.481** | **$ 0.423** | **$ 0.451** | **$ 0.613** | **$ 0.632** | **$ 0.706** |

# Table D7 – Eversource CT Electric Historical and Cost per Projected Lifetime kWh

**Table D7**

**Eversource CT Electric Historical and Cost per Projected Lifetime kWh**

| | Cost per Lifetime Savings kWh | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RESIDENTIAL | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
| **RESIDENTIAL** | | | | | | | | | | | | |
| Residential Retail Products | $ 0.017 | $ 0.015 | $ 0.019 | $ 0.016 | $ 0.020 | $ 0.021 | $ 0.016 | $ 0.017 | $ 0.044 | $ 0.060 | $ 0.076 | $ 0.107 |
| **Total: Consumer Products** | **$ 0.017** | **$ 0.015** | **$ 0.019** | **$ 0.016** | **$ 0.020** | **$ 0.021** | **$ 0.016** | **$ 0.017** | **$ 0.044** | **$ 0.060** | **$ 0.076** | **$ 0.107** |
| New Construction, Additions & Major Renovations | $ 0.041 | $ 0.038 | $ 0.047 | $ 0.046 | $ 0.037 | $ 0.044 | $ 0.056 | $ 0.057 | $ 0.062 | $ 0.038 | $ 0.046 | $ 0.044 |
| Home Energy Solutions (HVAC, Duct Sealing, Lighting) (Core Services only 2016-2021) | $ 0.085 | $ 0.094 | $ 0.099 | $ 0.093 | $ 0.078 | $ 0.072 | $ 0.085 | $ 0.078 | $ 0.079 | $ 0.103 | $ 0.136 | $ 0.154 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ 0.033 | $ 0.020 | $ 0.034 | $ 0.079 | $ 0.068 | $ 0.069 |
| HES-Income Eligible | $ 0.090 | $ 0.074 | $ 0.076 | $ 0.085 | $ 0.116 | $ 0.104 | $ 0.111 | $ 0.080 | $ 0.078 | $ 0.104 | $ 0.158 | $ 0.188 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 0.047 | $ 0.025 | $ 0.064 | $ 0.065 | $ 0.009 | $ 0.043 | $ 0.084 | $ 0.098 |
| **Subtotal: Residential** | **$ 0.040** | **$ 0.041** | **$ 0.049** | **$ 0.047** | **$ 0.051** | **$ 0.044** | **$ 0.040** | **$ 0.039** | **$ 0.055** | **$ 0.081** | **$ 0.109** | **$ 0.123** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.024 | $ 0.025 | $ 0.017 | $ 0.017 | $ 0.021 | $ 0.021 | $ 0.024 | $ 0.019 | $ 0.024 | $ 0.030 | $ 0.031 | $ 0.033 |
| **Total - Lost Opportunity** | **$ 0.024** | **$ 0.025** | **$ 0.017** | **$ 0.017** | **$ 0.021** | **$ 0.021** | **$ 0.024** | **$ 0.019** | **$ 0.024** | **$ 0.030** | **$ 0.031** | **$ 0.033** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 0.023 | $ 0.032 | $ 0.022 | $ 0.031 | $ 0.031 | $ 0.029 | $ 0.030 | $ 0.025 | $ 0.026 | $ 0.036 | $ 0.037 | $ 0.037 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 0.042 | $ 0.102 | $ 0.018 | $ 0.045 | $ 0.029 | $ 0.051 | $ 0.048 | $ 0.049 | $ 0.067 | $ 0.068 | $ 0.047 | $ 0.047 |
| PRIME (2009-2015) | $ 0.044 | $ 0.029 | $ 0.046 | $ 0.049 | $ 0.057 | $ 0.062 | $ - | $ - | $ - | $ 1.000 | $ 2.000 | $ 3.000 |
| **Total: C&I Large Retrofit** | **$ 0.024** | **$ 0.034** | **$ 0.022** | **$ 0.032** | **$ 0.031** | **$ 0.030** | **$ 0.030** | **$ 0.026** | **$ 0.028** | **$ 0.037** | **$ 0.038** | **$ 0.038** |
| Small Business Energy Advantage | $ 0.032 | $ 0.032 | $ 0.033 | $ 0.041 | $ 0.040 | $ 0.038 | $ 0.041 | $ 0.041 | $ 0.034 | $ 0.033 | $ 0.039 | $ 0.039 |
| **Subtotal: C&I** | **$ 0.026** | **$ 0.032** | **$ 0.023** | **$ 0.028** | **$ 0.029** | **$ 0.029** | **$ 0.031** | **$ 0.028** | **$ 0.028** | **$ 0.034** | **$ 0.037** | **$ 0.037** |
| **TOTAL (includes ISO Load Response)** | **$ 0.045** | **$ 0.043** | **$ 0.041** | **$ 0.043** | **$ 0.045** | **$ 0.043** | **$ 0.043** | **$ 0.041** | **$ 0.044** | **$ 0.059** | **$ 0.060** | **$ 0.064** |
| **TOTAL (excludes ISO Load Response)** | **$ 0.044** | **$ 0.040** | **$ 0.039** | **$ 0.041** | **$ 0.044** | **$ 0.043** | **$ 0.042** | **$ 0.041** | **$ 0.043** | **$ 0.059** | **$ 0.060** | **$ 0.064** |

# Eversource Electric PMI (2019)

**EVERSOURCE CT ELECTRIC**

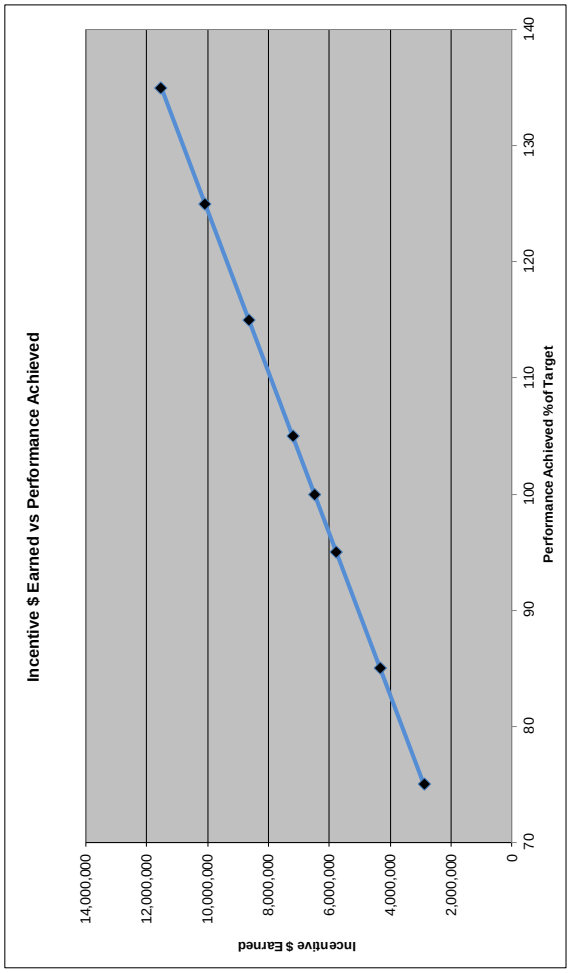
**2019 Management Incentive Performance Indicators and Incentive Matrix**

Eversource CT Electric and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Performance Incentive is **$6,488,942** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$144,198,722** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $2,883,974 |
| 85 | 3% | $4,325,962 |
| 95 | 4% | $5,767,949 |
| 100 | 4.5% | $6,488,942 |
| 105 | 5% | $7,209,936 |
| 115 | 6% | $8,651,923 |
| 125 | 7% | $10,093,911 |
| 135 | 8% | $11,535,898 |
| Maximum | | |
| **Incentive Basis Budget** | **$144,198,722** | |

**Goals will be prorated based on actual over/under spend of budget.**



# Eversource Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | | | | | |
| | | **Program Name** | **LT-kWh** | | **kW** | | **% (1)** | | | | |
| Residential Programs (Sector Level) Sector Budget | **$50,724** | | | | | | | Sum of Electric System Benefit from Residential programs | Electric System Benefit from Residential programs | 0.1950 | **$1,265,344** |
| | | Retail Products | 142,457,472 | | 3,456 | | 24.6% | | **$106,855,146** | | |
| | | New Construction | 69,039,788 | | 915 | | 9.6% | | | | |
| | | Home Energy Solutions | 173,319,792 | | 3,831 | | 28.8% | | | | |
| | | HVAC | 50,746,397 | | 693 | | 7.1% | | | | |
| | | HES-Income Eligible | 152,850,683 | | 1,790 | | 20.6% | | | | |
| | | Behavior | 39,765,000 | | 1,757 | | 9.2% | | | | |
| | | Total | 628,179,131 | | 12,442 | | | | | | |
| | | Savings Rate | $ 0.10690 | / kWh | $3,191 | / kW | | | | | |
| | | Savings | $ 67,155,430 | | $ 39,699,715 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit - Res. | | Electric System Benefit less Program Costs | | | | | $56,131,379.66 | | **$56,131,380** | 0.1950 | **$1,265,344** |
| Home Energy Solutions | **$17,912** | Electric Savings LTkWh : | | | 173,319,792 | | | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | | | 3,831 | | | | | | |
| | | MMBTU per single-family home for Core Service that have air sealing completed (i.e., non-barriered homes). This is based on 2018 actuals adjusted to 2019 CT PSD plus 2.0%. (16.14* 1.02). | | | | | | Increase HES savings Per Home | Achieve 16.46 MMBTU in HES per single-family home savings across all fuels | 0.0300 | **$194,668** |
| | | HES - Percentage of unique single-family homes that received core services for HES that get at least one downstream add-on measure (i.e., insulation, water heaters, HVAC, appliances, windows, Wi-Fi thermostats, attic opening Rebate, ductless heat pump mail-in component, natural gas boiler reset control, central A/C, and air-source heat pumps). This is based on 2018 actuals plus 2%. The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30 - 2019. (11.53%+2%). | | | | | | % of homes with Add-Ons | 13.53% of the homes with add-on measures | 0.0150 | **$97,334** |

# Eversource Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | **$2,645** | Electric Savings LTkWh : | 69,039,788 | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | 915 | | | | |
| | | Percentage of single-family and single-family attached homes/units in the RNC program that achieve a HERS rating of 50 or less. This is based on 2018 Actual plus 4% points (17.1%+4%). | | Increase % of efficient new homes | 21.1% | 0.0150 | **$97,334** |
| HES-Income Eligible | **$15,971** | Electric Savings LTkWh : | 152,850,683 | Energy savings included in appropriate sector level metric | | | |
| | | Demand Savings kW : | 1,790 | | | | |
| | | MMBTU per single family home for Core Service that have air sealing completed (i.e., non-barriered homes) – based on 2018 actuals adjusted to 2019 CT PSD plus 2.0%. | | Increase HES IE savings Per Home | Achieve MMBTU in HES-IE per Single family home savings across all fuels | 0.0300 | **$194,668** |
| Retail Products | **$8,506** | Electric Savings LTkWh : | 142,457,472 | Energy savings included in appropriate sector level metric | | | |
| | | Demand Savings kW : | 3,456 | | | | |

# Eversource Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | | | | | | |
| | | **Program Name** | **LT-kWh** | | **kW** | | **% (1)** | | | | |
| C&I Programs (Sector Level) Sector Budget | **$66,476** | Energy Conscious Blueprint | 419,777,399 | | 4,449 | | 20.8% | Total Electric System Benefit from C&I programs | Electric System Benefit from C&I programs | 0.2100 | **$1,362,678** |
| | | Energy Opportunities | 1,001,964,331 | | 11,529 | | 51.3% | | | | |
| | | Business and Energy Sustainability | 48,436,491 | | 1,178 | | 3.6% | | **$322,531,750** | | |
| | | Small Business | 462,154,649 | | 5,678 | | 24.3% | | | | |
| | | Total | 1,932,332,869 | | 22,833 | | | | | | |
| | | | | | | | | | | | |
| | | Savings Rate | $ 0.09614 | / kWh | $ 5,990 | / kW | | | | | |
| | | Savings | $ 185,773,311 | | $ 136,758,439 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit- C&I | | Electric System Benefit less Program Costs | | | | | $256,055,489.30 | | **$256,055,489** | 0.2100 | **$1,362,678** |
| Energy Opportunities | **$35,615** | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including Multiple end use measures with BES counting as an end use. Based on 2018 Actual results plus 5% (11%+5%). | | | | | | | 16% of all signed projects. | 0.0300 | **$194,668** |
| Energy Conscious Blueprint | **$12,403** | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects<br>and at least one toward Net Zero Energy project which shall include renewable energy technologies such as, but not limited to, solar PV, solar thermal, fuel cells, CHP, and wind | | | | | | | 50% of signed projects | 0.0200 | **$129,779** |

# Eversource Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | Incentive Metrics | | | |
|---|---|---|---|---|---|---|
| | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | |
| Small Business Energy Advantage | **$15,143** | Electric Saving LTkWh : 462,154,649<br>Demand Saving kW : 5,678<br>Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). This is based on 2018 Actual results plus 5% (24%+5%), | Energy savings included in appropriate sector level metric | 29% of signed projects | 0.0300 | **$194,668** |
| Strategic Energy Management | **$3,316** | The Companies have committed to testing a SEM cohort in 2019. The SEM cohort or individual companies implementing SEM shall comply with best practice as defined by the CEE Minimum elements or DOE 50001 Ready. The Companies will track project savings for customers in efforts to save at least estimated savings of 25 MWh (individual company project) and 10 MWh/customer (customers in a cohort).<br>SEM signed Customer agreements may include, but not be limited to, BSC Agreements, Retro-Commissioning engineering study agreements, multi-year CSP's with Customers (which will outline a strategic plan for reducing consumption by a specific percentage each year along with tools and resources to be utilized such as metering, trending & reporting, engineering models), ENERGY STAR Benchmarking, Focused Study agreements, PRIME kaizen events, etc., packaged SEM (with and w/o cohorts) and Customer Engagement tools and resources which already exist in the marketplace. Based on 2018 Actual Results plus 5% (107*1.05) | | 112 Customers | 0.0200 | **$129,779** |
| **Total of Incentives** | | | | | **1.00000** | **$6,488,942** |

# Eversource Electric PMI (2020)

## EVERSOURCE CT ELECTRIC

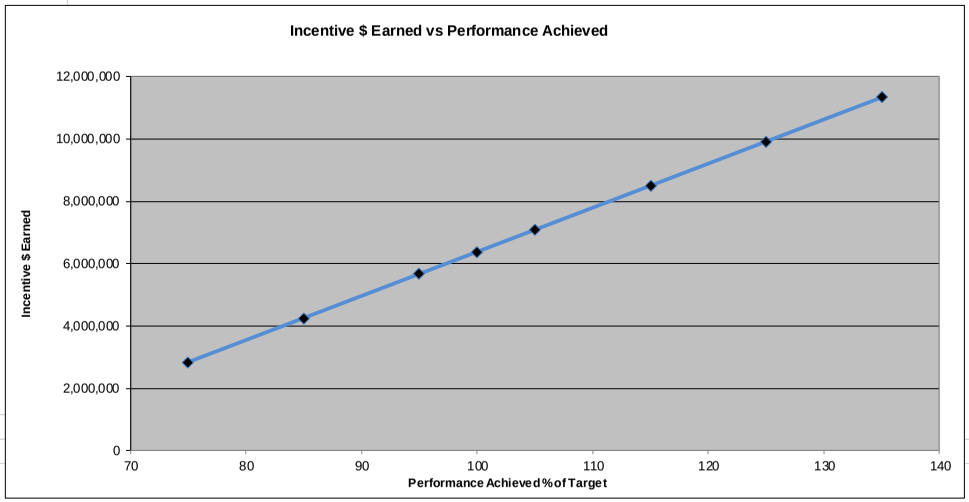
**2020 Management Incentive Performance Indicators and Incentive Matrix**

Eversource CT Electric and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Performance Incentive is **$6,377,770** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$141,728,218** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| Minimum | | |
| 75 | 2% | $2,834,564 |
| 85 | 3% | $4,251,847 |
| 95 | 4% | $5,669,129 |
| **100** | **4.5%** | **$6,377,770** |
| 105 | 5% | $7,086,411 |
| 115 | 6% | $8,503,693 |
| 125 | 7% | $9,920,975 |
| 135 | 8% | $11,338,257 |
| Maximum | | |
| Incentive Basis Budget | $141,728,218 | |

**Goals will be prorated based on actual over/under spend of budget,**



# Eversource Electric PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | | | | | |
| | | **Program Name** | **LT-kWh** | | **kW** | | **% (1)** | | | | |
| Residential Programs (Sector Level) Sector Budget | **$53,207** | | | | | | | Sum of Electric System Benefit from Residential programs | Electric System Benefit from Residential programs | 0.1950 | **$1,243,665** |
| | | Retail Products | 78,641,199 | | 2,101 | | 17.5% | | **$75,326,335** | | |
| | | New Construction | 58,314,924 | | 450 | | 8.9% | | | | |
| | | Home Energy Solutions | 153,197,592 | | 3,832 | | 33.1% | | | | |
| | | HVAC | 58,488,132 | | 1,045 | | 11.1% | | | | |
| | | HES - Income Eligible | 104,374,737 | | 1,614 | | 18.9% | | | | |
| | | Behavior | 36,728,500 | | 1,655 | | 10.6% | | | | |
| | | Total | 489,745,084 | | 10,698 | | | | | | |
| | | Savings Rate | $ 0.09320 | / kWh | $2,774 | / kW | | | | | |
| | | Savings | $ 45,645,944 | | $ 29,680,391 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit - Res. | | Electric System Benefit less Program Costs | | | | | $22,119,658.94 | | **$22,119,659** | 0.1950 | **$1,243,665** |
| Home Energy Solutions | **$20,907** | Electric Savings LTkWh : | | | 153,197,592 | | | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | | | 3,832 | | | | | | |
| | | MMBTU per single-family home (not including lighting) for Core Services that have air sealing completed (i.e., non-barriered homes). This is based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | | | | | Increase HES savings Per Home | Achieve MMBTU in HES per single-family home savings across all fuels | 0.0300 | **$191,333** |
| | | HES - Percentage of unique singe-family homes that received core services for HES that get at least one downstream add-on measure (i.e., insulation, water Heaters, HVAC, appliances, windows, Wi-Fi thermostats, attic opening rebate, ductless heat pump mail-in component, natural gas boiler reset control, central A/C, and air-source heat pumps). This is based on 2019 actuals plus 2%. The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30, 2020. | | | | | | % of homes with Add-Ons | % of the homes with add-on measures | 0.0150 | **$95,667** |

# Eversource Electric PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| Residential New Construction | **$2,700** | Electric Savings LTkWh : | 58,314,924 | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | 450 | | | | |
| | | Percentage of single family and single family attached homes/units in the RNC program that achieve a HERS rating of 50 or less. This is based on 2019 Actuals plus 4% points. | | Increase % of efficient new homes | | 0.0150 | **$95,667** |
| HES Income Eligible | **$16,500** | Electric Savings LTkWh : | 104,374,737 | Energy savings included in appropriate sector level metric | Achieve MMBTU in HES-IE per single-family home savings across all fuels | 0.0300 | **$191,333** |
| | | Demand Savings kW : | 1,614 | | | | |
| | | MMBTU per single-family home for Core Services that have air sealing completed (i.e., non-barriered homes). This is based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | Increase HES IE savings Per Home | | | |
| Retail Products | **$6,000** | Electric Savings LTkWh : | 78,641,199 | Energy savings included in appropriate sector level metric | | | |
| | | Demand Savings kW : | 2,101 | | | | |

# Eversource Electric PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | | | | | | |
| | | **Program Name** | **LT-kWh** | | **kW** | | **% (1)** | | | | |
| C&I Programs (Sector Level) Sector Budget | **$72,419** | Energy Conscious Blueprint | 401,954,733 | | 4,285 | | 19.5% | Total Electric System Benefit from C&I programs | Electric System Benefit from C&I programs | 0.2100 | **$1,339,332** |
| | | Energy Opportunities | 1,075,155,761 | | 12,324 | | 53.8% | | | | |
| | | Business and Energy Sustainability | 74,482,408 | | 2,150 | | 6.0% | | **$284,253,137** | | |
| | | Small Business | 427,797,199 | | 4,471 | | 20.6% | | | | |
| | | Total | 1,979,390,102 | | 23,230 | | | | | | |
| | | Savings Rate | $ 0.08389 | / kWh | $ 5,088 | / kW | | | | | |
| | | Savings | $ 166,056,788 | | $ 118,196,349 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit-C&I | | Electric System Benefit less Program Costs | | | | | $211,833,738.07 | | **$211,833,738** | 0.2100 | **$1,339,332** |
| Energy Opportunities | **$39,671** | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including multiple-end use measures with BES counting as an end use. Based on 2019 Actual results plus 5%. | | | | | | | % of all signed projects | 0.0300 | **$191,333** |
| Energy Conscious Blueprint | **$12,565** | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects | | | | | | | 50% of signed projects | 0.0200 | **$127,555** |
| | | and at least three towards Net Zero Energy project which shall include renewable energy technologies such as, but not limited to, Solar PV, Solar Thermal, Fuel Cells, CHP, and Wind | | | | | | | | | |

## Eversource Electric PMI (2020) – continued

| SECTOR Program | | Performance Indicators | Incentive Metrics | | | |
|---|---|---|---|---|---|---|
| | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | |
| Small Business | | | sector level metric | | | |
| | | Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering / all signed projects (excluding rebates). - Based on 2019 Actual results plus 5% | | % of signed projects | 0.0300 | **$191,333** |
| Strategic Energy Management | **$3,486** | Performance management incentives may be earned for each new customer to achieve SEM savings in 2020. Customers who implement SEM individually and save at least 25 MWh are worth a $800 PMI, and each customer who implements SEM as part of a cohort and saves at least 10 MWh is worth a $1000 PMI. | | Customers | 0.0200 | **$127,555** |
| **Total of Incentives** | | | | | **1.00000** | **$6,377,770** |

# Eversource Electric PMI (2021)

## EVERSOURCE CT ELECTRIC

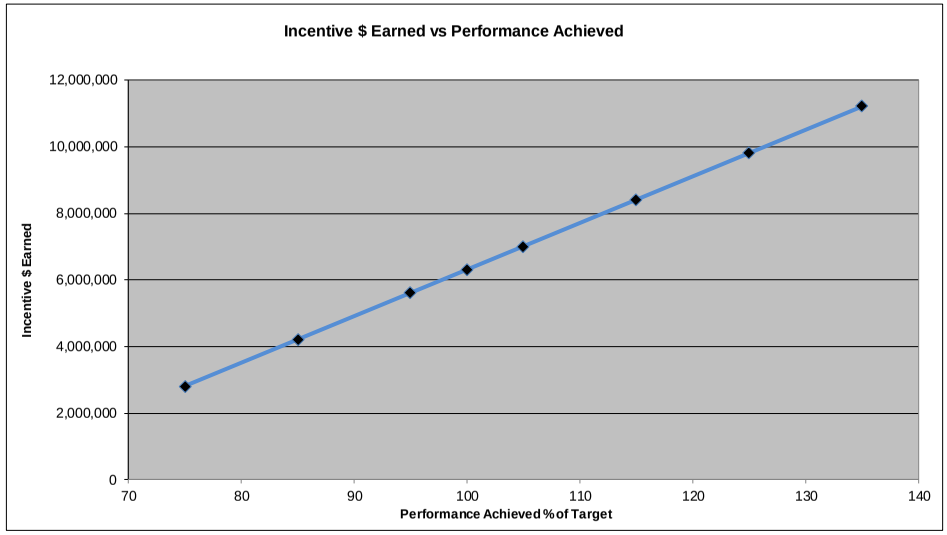
**2021 Management Incentive Performance Indicators and Incentive Matrix**

Eversource CT Electric and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated inthe 2019-2021 Plan. The projected Eversource CT Performance Incentive is **$6,309,595** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$140,213,212** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $2,804,264 |
| 85 | 3% | $4,206,396 |
| 95 | 4% | $5,608,528 |
| **100** | **4.5%** | **$6,309,595** |
| 105 | 5% | $7,010,661 |
| 115 | 6% | $8,412,793 |
| 125 | 7% | $9,814,925 |
| 135 | 8% | $11,217,057 |
| Maximum | | |
| Incentive Basis Budget | $140,213,212 | |

**Goals will be prorated based on actual over/under spend of budget.**



# Eversource Electric PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | | | | | |
| | | **Program Name** | **LT-kWh** | | **kW** | | **% (1)** | | | | |
| Residential Programs (Sector Level) Sector Budget | **$50,618** | | | | | | | Sum of Electric System Benefit from Residential programs | Electric System Benefit from Residential programs | 0.1950 | **$1,230,371** |
| | | Retail Products | 46,579,980 | | 1,060 | | 11.9% | | **$62,536,882** | | |
| | | New Construction | 63,867,438 | | 475 | | 11.1% | | | | |
| | | Home Energy Solutions | 130,077,711 | | 3,080 | | 33.8% | | | | |
| | | HVAC | 54,393,322 | | 971 | | 12.5% | | | | |
| | | HES-Income Eligible | 84,985,788 | | 1,429 | | 19.0% | | | | |
| | | Behavior | 31,662,500 | | 1,427 | | 11.8% | | | | |
| | | Total | 411,566,738 | | 8,441 | | | | | | |
| | | Savings Rate | $ 0.08464 | / kWh | $3,282 | / kW | | | | | |
| | | Savings | $ 34,836,547 | | $ 27,700,335 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit - Res. | | Electric System Benefit less Program Costs | | | | | $11,918,590.63 | | **$11,918,591** | 0.1950 | **$1,230,371** |
| Home Energy Solutions | **$19,968** | Electric Savings LTkWh : | | | 130,077,711 | | | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | | | 3,080 | | | | | | |
| | | MMBTU per single family home (not including lighting) for Core Service that have air sealing completed (i.e., non-barriered homes) – based on 2020 actuals adjusted to 2021 CT PSD plus 2.0%. | | | | | | Increase HES savings Per Home | Achieve MMBTU in HES per single-family home savings across all fuels | 0.0300 | **$189,288** |
| | | HES - Percentage of Unique Single Family Homes that received core services for HES that get at least one downstream add-on measure (i.e., Insulation, Water Heaters, HVAC, Appliances, Windows, Wi-Fi thermostats, Attic Opening Rebate, Ductless Heat Pump mail-in component, Natural Gas Boiler reset control, Central A/C, and Air Source Heat Pumps) - based on 2020 actuals plus 2%. The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30 - 2020. | | | | | | % of homes with Add-Ons | % of the homes with add-on measures | 0.0150 | **$94,644** |

# Eversource Electric PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| Residential New Construction | **$2,800** | Electric Savings LTkWh : | 63,867,438 | Energy Savings included in appropriate sector level metric | | | |
| | | Demand Savings kw : | 475 | | | | |
| | | Percentage of single family and single family attached homes/units in the RNC program that achieve a HERS rating of 50 or less - based on 2020 Actual plus 4% points | | Increase % of efficient new homes | % | 0.0150 | **$94,644** |
| HES-Income Eligible | **$16,000** | Electric Savings LTkWh : | 84,985,788 | Energy savings included in appropriate sector level metric | | | |
| | | Demand Savings kW : | 1,429 | | | | |
| | | MMBTU per single family home for Core Service that have air sealing completed (i.e., non-barriered homes) – based on 2020 actuals adjusted to 2021 CT PSD plus 2.0%. | | Increase HES-Income Eligible savings Per home | Achieve MMBTU in HES-IE per Single family home savings across all fuels | 0.0300 | **$189,288** |
| Retail Products | **$5,000** | Electric Savings LTkWh : | 46,579,980 | Energy savings included in appropriate sector level metric | | | |
| | | Demand Savings kW : | 1,060 | | | | |

# Eversource Electric PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| COMMERCIAL & INDUSTRIAL (C&I) | | | | | | | | | | | |
| | | Program Name | LT-kWh | | kW | | % (1) | | | | |
| C&I Programs (Sector Level) Sector Budget | $70,747 | Energy Conscious Blueprint | 386,987,123 | | 4,126 | | 19.6% | Total Electric System Benefit from C&I programs | Electric System Benefit from C&I programs | 0.2100 | $1,325,015 |
| | | Energy Opportunities | 999,414,600 | | 11,491 | | 52.1% | | | | |
| | | Business and Energy Sustainability | 74,755,067 | | 2,296 | | 6.7% | | $270,102,401 | | |
| | | Small Business | 438,965,699 | | 4,392 | | 21.6% | | | | |
| | | Total | 1,900,122,489 | | 22,304 | | | | | | |
| | | | | | | | | | | | |
| | | Savings Rate | $ 0.08108 | / kWh | $ 5,202 | / kW | | | | | |
| | | Savings | $ 154,066,768 | | $ 116,035,633 | | | | | | |
| | | (1) percent of target goal | | | | | | | | | |
| Net Electric System Benefit- C&I | | Electric System Benefit less Program Costs | | | | | $199,355,366 | | $199,355,366 | 0.2100 | $1,325,015 |
| Energy Opportunities | $37,002 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including multiple-end use measures with BES counting as an end use. Based on 2020 Actual Results plus 5%. | | | | | | | % of all signed projects. | 0.0300 | $189,288 |
| Energy Conscious Blueprint | $12,918 | | | | | | | | | | |
| | | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects | | | | | | | 50% of signed projects | 0.0200 | $126,192 |
| | | and at least five towards Net Zero Energy project which shall include renewable energy technologies such as, but not limited to, Solar PV, Solar Thermal, Fuel Cells, CHP, and Wind | | | | | | | | | |

# Eversource Electric PMI (2021) – continued

| SECTOR Program | | Performance Indicators | Incentive Metrics | | | |
|---|---|---|---|---|---|---|
| | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | |
| Small Business Energy Advantage | **$17,279** | Electric Saving LTkWh : 438,965,699<br>Demand Saving kW : 4,392<br>Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Based on 2020 Actual results plus 5%. | Energy savings included in appropriate sector level metric | % of signed projects | 0.0300 | **$189,288** |
| Strategic Energy Management | **$3,547** | Performance management incentives may be earned for each new customer to achieve SEM savings in 2020. Customers who implement SEM individually and save at least 25 MWh are worth a $800 PMI, and each customer who implements SEM as part of a cohort and saves at least 10 MWh is worth a $1000 PMI. | | Customers | 0.0200 | **$126,192** |
| **Total of Incentives** | | | | | **1.00000** | **$6,309,595** |

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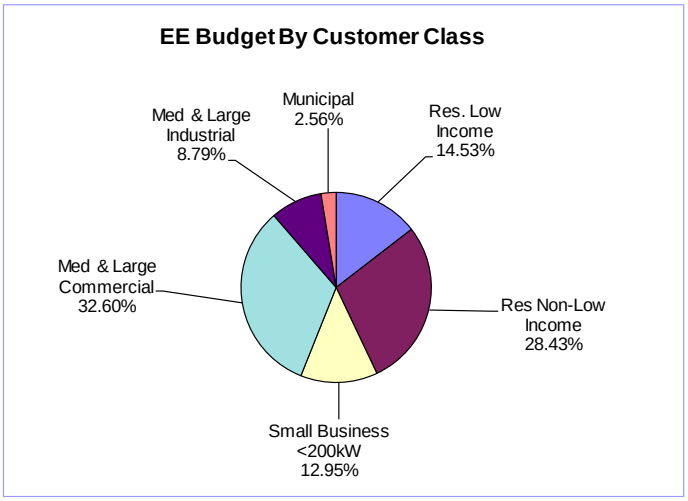
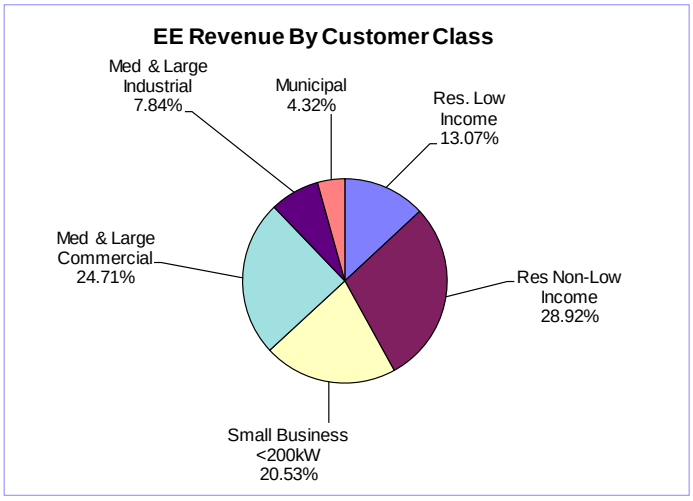
# UNITED ILLUMINATING ELECTRIC BUDGET AND SAVINGS TABLES

## United Illuminating Electric Table A (2018-2021)

| UNITED ILLUMINATING EE BUDGET | 2018 UI ACTUAL RESULTS | 2019 UI BUDGET FILED 11/1/2018 | 2019 UI BUDGET UPDATE 3/1/2019 | 2020 UI BUDGET UPDATE 3/1/2019 | 2021 UI BUDGET UPDATE 3/1/2019 |
|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | |
| Residential Retail Products | 1,069,953 | 1,786,029 | 2,065,085 | 2,001,074 | 1,786,803 |
| **Total: Consumer Products** | **$ 1,069,953** | **$ 1,786,029** | **$ 2,065,085** | **$ 2,001,074** | **$ 1,786,803** |
| New Construction, Additions & Major Renovations | $ (35,586) | $ 656,687 | $ 607,378 | $ 625,335 | $ 595,600 |
| Home Energy Solutions (HES) | $ 2,116,512 | $ 4,521,876 | $ 3,644,267 | $ 3,752,014 | $ 3,573,606 |
| HVAC/Water Heaters | $ 1,229,383 | $ 918,832 | $ 1,457,707 | $ 1,500,805 | $ 1,429,442 |
| HES-Income Eligible | $ 2,731,548 | $ 3,485,262 | $ 4,251,647 | $ 4,377,349 | $ 4,169,206 |
| Residential Behavior | $ 461 | $ 121,100 | $ 121,476 | $ 250,134 | $ 357,361 |
| **Subtotal: Residential** | **$ 7,112,271** | **$ 11,489,786** | **$ 12,147,561** | **$ 12,506,712** | **$ 11,912,018** |
| **COMMERCIAL & INDUSTRIAL** | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | |
| Energy Conscious Blueprint | $ 1,720,970 | $ 3,949,041 | $ 4,184,555 | $ 4,396,007 | $ 4,082,985 |
| **Total - Lost Opportunity** | **$ 1,720,970** | **$ 3,949,041** | **$ 4,184,555** | **$ 4,396,007** | **$ 4,082,985** |
| **C&I LARGE RETROFIT** | | | | | |
| Energy Opportunities | $ 4,208,266 | $ 7,537,662 | $ 7,987,195 | $ 7,955,445 | $ 7,366,718 |
| Business & Energy Sustainability (O&M, RCx, BSC,PRIME, CSP/SEM) | $ 357,593 | $ 1,155,272 | $ 1,224,171 | $ 1,237,571 | $ 1,147,785 |
| **Total: C&I Large Retrofit** | **$ 4,565,859** | **$ 8,692,934** | **$ 9,211,366** | **$ 9,193,016** | **$ 8,514,503** |
| Small Business Energy Advantage | $ 2,285,024 | $ 3,861,915 | $ 4,092,233 | $ 4,090,569 | $ 3,799,435 |
| **Subtotal: C&I** | **$ 8,571,853** | **$ 16,503,890** | **$ 17,488,154** | **$ 17,679,592** | **$ 16,396,922** |
| **OTHER - EDUCATION** | | | | | |
| Educate the Public | $ 293,599 | $ 294,279 | $ 294,279 | $ 299,292 | $ 304,455 |
| Customer Engagement | $ 8,199 | $ - | $ - | $ 475,000 | $ 475,000 |
| Educate the Students | $ 83,189 | $ 99,777 | $ 116,992 | $ 101,242 | $ 102,752 |
| Educate the Workforce | $ 35,954 | $ 37,393 | $ 47,633 | $ 37,943 | $ 38,509 |
| **Subtotal: Education** | **$ 420,941** | **$ 431,449** | **$ 458,904** | **$ 913,477** | **$ 920,715** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | |
| Financing Support - Residential | $ 74,473 | $ 148,004 | $ 148,004 | $ 149,381 | $ 150,799 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ 80,132 | $ 151,250 | $ 151,250 | $ 151,250 | $ 151,250 |
| **Subtotal: Programs/Requirements** | **$ 154,605** | **$ 299,254** | **$ 299,254** | **$ 300,630** | **$ 302,049** |
| **OTHER - LOAD MANAGEMENT** | | | | | |
| Demand Response Pilot - Residential | $ 558,333 | $ 852,299 | $ 852,299 | $ 1,353,839 | $ 2,524,099 |
| Demand Response Pilot - C&I | $ 157,542 | $ 151,267 | $ 151,267 | $ 214,662 | $ 214,662 |
| **Subtotal: Load Management** | **$ 715,875** | **$ 1,003,566** | **$ 1,003,566** | **$ 1,568,501** | **$ 2,738,761** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | |
| Administration | $ 378,468 | $ 258,752 | $ 258,752 | $ 265,833 | $ 273,127 |
| Marketing Plan | $ 72,657 | $ 33,440 | $ 33,440 | $ 89,100 | $ 121,400 |
| Planning | $ 204,556 | $ 134,434 | $ 134,434 | $ 137,367 | $ 140,393 |
| Evaluation Measurement and Verification | $ 255,806 | $ 255,806 | $ 255,806 | $ 480,000 | $ 480,000 |
| Evaluation Administrator | $ 44,800 | $ 44,800 | $ 44,800 | $ 48,000 | $ 48,000 |
| Information Technology | $ 334,862 | $ 452,520 | $ 452,520 | $ 455,300 | $ 458,164 |
| Energy Efficiency Board Consultants | $ 76,424 | $ 76,544 | $ 76,544 | $ 104,000 | $ 104,000 |
| Audits - Financial and Operational | $ 12,000 | $ 24,000 | $ 24,000 | $ 24,000 | $ 24,000 |
| Performance Management Incentive | $ 1,320,905 | $ 1,388,830 | $ 1,463,958 | $ 1,547,843 | $ 1,518,460 |
| **Admin/Planning Expenditures** | **$ 2,700,478** | **$ 2,669,127** | **$ 2,744,254** | **$ 3,151,444** | **$ 3,167,543** |
| Transfer to State Fund | $ 11,700,000 | $ 5,350,000 | $ 5,350,000 | $ - | $ - |
| **TOTAL EE BUDGET** | **$ 31,376,023** | **$ 37,747,071** | **$ 39,491,692** | **$ 36,120,356** | **$ 35,438,008** |

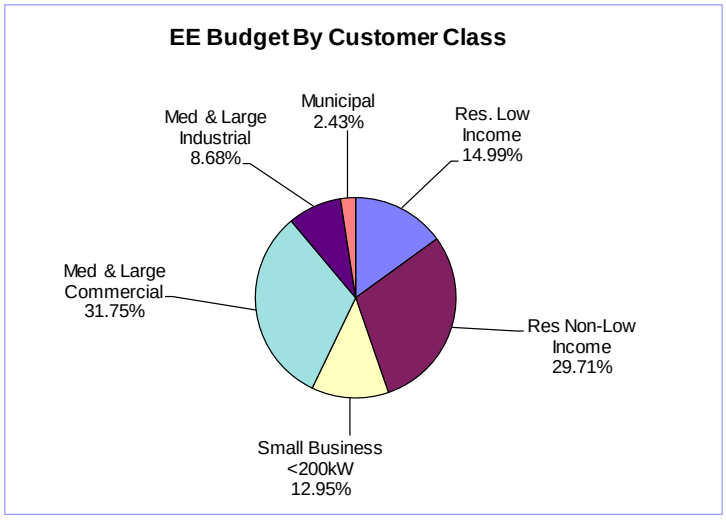
## United Illuminating Electric Table A Pie Chart (2019)

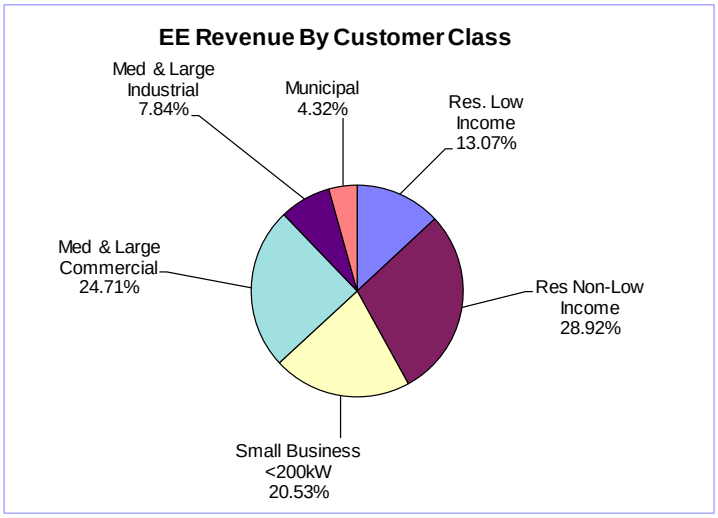



| Customer Class | | Budget* | % of Total C&LM Budget | % of Residential & C&I Budget | % of Residential & C&I Revenue | Difference |
|---|---|---|---|---|---|---|
| Res. Low Income | $ | 4,545,940 | 13.31% | 14.53% | 13.07% | 1.46% |
| Res Non-Low Income | $ | 8,893,225 | 26.05% | 28.43% | 28.92% | -0.49% |
| Residential Subtotal | $ | 13,439,165 | 39.36% | 42.96% | 41.99% | 0.97% |
| Small Business <200kW | $ | 4,092,233 | 11.99% | 13.08% | 21.14% | -8.06% |
| Med & Large Commercial | $ | 10,198,181 | 29.87% | 32.60% | 24.71% | 7.89% |
| Med & Large Industrial | $ | 2,750,050 | 8.05% | 8.79% | 7.84% | 0.95% |
| Municipal | $ | 800,000 | 2.34% | 2.56% | 4.32% | -1.76% |
| C&I Subtotal | $ | 17,840,463 | 52.25% | 57.04% | 58.01% | -0.97% |
| | | | | | | |
| **Sub-total for Residential and C&I** | **$** | **31,279,628** | **91.62%** | **100.00%** | **100.00%** | **0.00%** |
| | | | | | | |
| Other Expenditures | $ | 2,862,064 | 8.38% | | | |
| **Other Expenditures Sub-total** | **$** | **2,862,064** | **8.38%** | | | |
| | | | | | | |
| **GRAND TOTAL** | **$** | **34,141,692** | **100%** | | | |
| | | | | | | |
| *Please see attached Budget Allocation Table. | | | | | | |

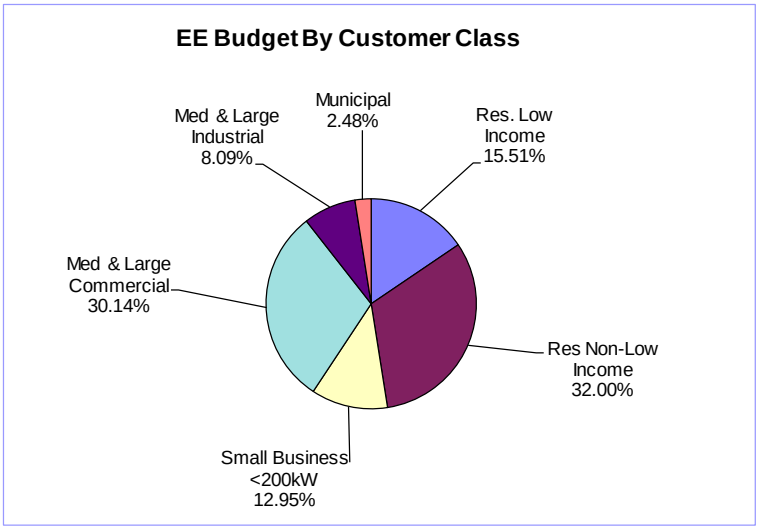
## United Illuminating Electric Table A Pie Chart (2020)

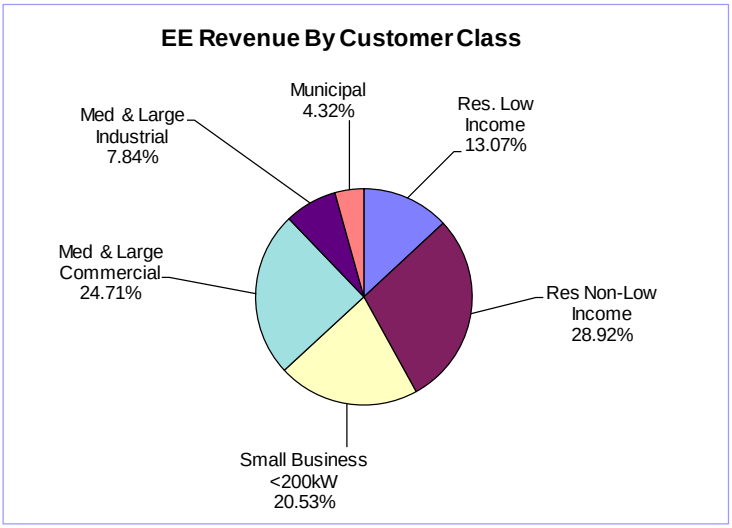



| Customer Class | | Budget* | % of Total C&LM Budget | % of Residential & C&I | % of Residential & C&I | Difference |
|---|---|---|---|---|---|---|
| Res. Low Income | $ | 4,933,424 | 13.66% | 14.99% | 13.07% | 1.92% |
| Res Non-Low Income | $ | 9,777,399 | 27.07% | 29.71% | 28.92% | 0.79% |
| Residential Subtotal | $ | 14,710,823 | 40.73% | 44.70% | 41.99% | 2.71% |
| Small Business < 200kW | $ | 4,090,569 | 11.32% | 12.43% | 21.14% | -8.71% |
| Med & Large Commercial | $ | 10,449,153 | 28.93% | 31.75% | 24.71% | 7.04% |
| Med & Large Industrial | $ | 2,856,218 | 7.91% | 8.68% | 7.84% | 0.84% |
| Municipal | $ | 800,000 | 2.21% | 2.43% | 4.32% | -1.89% |
| C&I Subtotal | $ | 18,195,939 | 50.38% | 55.30% | 58.01% | -2.71% |
| | | | | | | |
| **Residential and C&I Subtotal** | $ | 32,906,762 | 91.10% | 100.00% | 100.00% | 0.00% |
| | | | | | | |
| Other Expenditures | $ | 3,213,594 | 8.90% | | | |
| **Other Expenditures Subtotal** | **$** | **3,213,594** | **8.90%** | | | |
| | | | | | | |
| **GRAND TOTAL** | **$** | **36,120,356** | **100%** | | | |

## United Illuminating Electric Table A Pie Chart (2021)




| Customer Class | | Budget* | % of Total C&LM Budget | % of Residential & C&I | % of Residential & C&I | Difference |
|---|---|---|---|---|---|---|
| Res. Low Income | $ | 5,000,475 | 14.11% | 15.51% | 13.07% | 2.44% |
| Res Non-Low Income | $ | 10,317,244 | 29.11% | 32.00% | 28.92% | 3.08% |
| **Residential Subtotal** | **$** | **15,317,719** | **43.22%** | **47.51%** | **41.99%** | **5.52%** |
| Small Business < 200kW | $ | 3,799,435 | 10.72% | 11.78% | 21.14% | -9.36% |
| Med & Large Commercial | $ | 9,716,637 | 27.42% | 30.14% | 24.71% | 5.43% |
| Med & Large Industrial | $ | 2,606,825 | 7.36% | 8.09% | 7.84% | 0.25% |
| Municipal | $ | 800,000 | 2.26% | 2.48% | 4.32% | -1.84% |
| **C&I Subtotal** | **$** | **16,922,896** | **47.75%** | **52.49%** | **58.01%** | **-5.52%** |
| | | | | | | |
| **Residential and C&I Subtotal** | $ | 32,240,616 | 90.98% | 100.00% | 100.00% | 0.00% |
| | | | | | | |
| Other Expenditures | $ | 3,197,393 | 9.02% | | | |
| **Other Expenditures Subtotal** | $ | 3,197,393 | 9.02% | | | |
| | | | | | | |
| **GRAND TOTAL** | **$** | **35,438,008** | **100%** | | | |
| | | | | | | |
| *Please see attached Budget Allocation Table. | | | | | | |

# Table B – United Illuminating Electric Costs and Benefits (2019)

| Program | Utility Costs | Modified Utility Cost | ** Customer Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Modified Utility B/C Ratio | Total Resource B/C Ratio | Goals/No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 2,065,085 | $ 2,065,085 | $ 1,804,673 | $ 3,869,758 | $ 4,741,425 | $ 4,028,407 | $ 5,317,669 | 2.30 | 1.95 | 1.37 | 582,789.62 | Bulbs, Fixtures |
| ***TOTAL - CONSUMER PRODUCTS*** | **$ 2,065,085** | **$ 2,065,085** | **$ 1,804,673** | **$ 3,869,758** | **$ 4,741,425** | **$ 4,028,407** | **$ 5,317,669** | **2.30** | **1.95** | **1.37** | | |
| | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 607,378 | $ 607,378 | $ 1,176,451 | $ 1,783,829 | $ 1,364,572 | $ 1,650,734 | $ 1,915,686 | 2.25 | 2.72 | 1.07 | 437 | No. of Units |
| Home Energy Solutions | $ 1,824,245 | $ 3,644,267 | $ 1,309,797 | $ 4,954,064 | $ 6,750,633 | $ 13,862,698 | $ 17,818,177 | 3.70 | 3.80 | 3.60 | 3,957 | No. of Ptcps. |
| HVAC/Water Heaters | $ 1,457,707 | $ 1,457,707 | $ 2,036,741 | $ 3,494,448 | $ 3,751,050 | $ 3,914,075 | $ 4,672,763 | 2.57 | 2.69 | 1.34 | 5,556 | No. of Ptcps. |
| HES-Income Eligible | $ 3,509,593 | $ 4,251,647 | $ 52,452 | $ 4,304,099 | $ 5,335,307 | $ 8,747,979 | $ 12,099,550 | 1.52 | 2.06 | 2.81 | 6,521 | Customers |
| Residential Behavior | $ 121,476 | $ 121,476 | $ (121,476) | | | | | - | - | NA | | Customers |
| ***SUB-TOTAL RESIDENTIAL*** | **$ 9,585,485** | **$ 12,147,561** | **$ 6,258,637** | **$18,406,198** | **$ 21,942,986** | **$ 32,203,893** | **$ 41,823,845** | **2.29** | **2.65** | **2.27** | | |
| | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 4,184,555 | $ 4,184,555 | $ 3,465,873 | $ 7,650,428 | $ 19,086,365 | $ 19,086,365 | $ 24,052,796 | 4.56 | 4.56 | 3.14 | 480 | Projects |
| ***TOTAL - LOST OPPORTUNITY*** | **$ 4,184,555** | **$ 4,184,555** | **$ 3,465,873** | **$ 7,650,428** | **$ 19,086,365** | **$ 19,086,365** | **$ 24,052,796** | **4.56** | **4.56** | **3.14** | 480 | |
| | | | | | | | | | | | | |
| Energy Opportunities | $ 7,987,195 | $ 7,987,195 | $ 7,191,476 | $15,178,672 | $ 32,468,520 | $ 32,468,520 | $ 41,160,908 | 4.07 | 4.07 | 2.71 | 1,040 | Projects |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 1,224,171 | $ 1,224,171 | $ 1,827,801 | $ 3,051,972 | $ 2,875,197 | $ 2,875,197 | $ 3,770,904 | 2.35 | 2.35 | 1.24 | 76 | Projects |
| ***TOTAL - C&I LARGE RETROFIT*** | **$ 9,211,366** | **$ 9,211,366** | **$ 9,019,277** | **$18,230,643** | **$ 35,343,717** | **$ 35,343,717** | **$ 44,931,813** | **3.84** | **3.84** | **2.46** | 1,116 | |
| | | | | | | | | | | | | |
| Small Business Energy Advantage | $ 4,092,233 | $ 4,092,233 | $ 4,552,316 | $ 8,644,549 | $ 14,395,772 | $ 14,395,772 | $ 18,321,398 | 3.52 | 3.52 | 2.12 | 242 | Projects |
| ***SUBTOTAL C&I*** | **$ 17,488,154** | **$ 17,488,154** | **$ 17,037,466** | **$34,525,620** | **$ 68,825,854** | **$ 68,825,854** | **$ 87,306,007** | **3.94** | **3.94** | **2.53** | **1,838** | **Projects** |
| ***SUBTOTAL OTHER*** | **$ 4,505,978** | **$ 4,505,978** | | | | | | | | | | |
| ***Total C&LM Budget*** | **$ 31,579,617** | **$ 34,141,692** | **$ 23,296,103** | **$52,931,818** | **$ 90,768,840** | **$ 101,029,746** | **$ 129,129,852** | **2.87** | **2.96** | **2.44** | | **Projects** |

## Table B – United Illuminating Electric Costs and Benefits (2019) — continued

| Program | Annualized Savings kWh | Lifetime Savings kWh | Peak kW Impact (Y/E) | Electric Demand Cost $/kW | Electric Demand Cost $/kW yr | Electric Cost Rate $/kWh Annualized | Electric Cost Rate $/LT-kWh | Annualized Savings Oil (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | 6050751.3 | 32363081.9 | 785.1 | $ 2,630 | $ 492 | $ 0.3413 | $ 0.064 | (47,492) | (213,238) | (1,828) | (9,140) | 13,898 | 80,046 | $ 148.6 | $ 25.80 |
| ***TOTAL - CONSUMER PRODUCTS*** | **6,050,751** | **32,363,082** | **785.1** | **$ 2,630** | **$ 492** | **$ 0.3413** | **$ 0.064** | **(47,492)** | **(213,238)** | **(1,828)** | **(9,140)** | **13,898** | **80,046** | **$ 148.6** | **$ 25.80** |
| | | | | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 473,988.19 | 6,301,447.76 | 145 | $ 4,181 | $ 315 | $ 1.2814 | $ 0.096 | 0.00 | 0.00 | 6044.80 | 156098.45 | 2,170 | 35,763 | $ 279.9 | $ 16.98 |
| Home Energy Solutions | 4,871,242.97 | 33,950,874.46 | 1,080 | $ 1,689 | $ 242 | $ 0.3745 | $ 0.054 | 139074.16 | 3038645.61 | 1614.08 | 37334.32 | 36,061 | 540,714 | $ 50.6 | $ 3.37 |
| HVAC/Water Heaters | 1,190,712.83 | 20,897,650.50 | 366 | $ 3,982 | $ 227 | $ 1.2242 | $ 0.070 | 2078.84 | 27024.88 | 1,225 | 24,181 | 4,464 | 77,280 | $ 326.5 | $ 18.86 |
| HES-Income Eligible | 5,305,593.68 | 47,125,864.95 | 560 | $ 6,268 | $ 706 | $ 0.6615 | $ 0.074 | 64683.20 | 1490057.50 | 0.00 | 0.00 | 27,079 | 367,497 | $ 129.6 | $ 9.55 |
| Residential Behavior | | | | | | | | - | - | - | - | - | - | #DIV/0! | #DIV/0! |
| ***SUB-TOTAL RESIDENTIAL*** | **17,892,289** | **140,638,920** | **2,936.6** | **$ 3,264** | **$ 415** | **$ 0.5357** | **$ 0.068** | **158,344** | **4,342,490** | **7,056** | **208,473** | **83,671** | **1,101,300** | **$ 114.6** | **$ 8.70** |
| | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 9,174,097 | 142,814,924 | 1,447.1 | $ 2,892 | $ 186 | $ 0.4561 | $ 0.029 | | | | | 31,311 | 487,427 | $ 133.6 | $ 8.58 |
| ***TOTAL - LOST OPPORTUNITY*** | **9,174,097** | **142,814,924** | **1,447.1** | **$ 2,892** | **$ 186** | **$ 0.4561** | **$ 0.029** | **-** | **-** | **-** | **-** | **31,311** | **487,427** | **$ 133.6** | **$ 8.58** |
| | | | | | | | | | | | | | | | |
| Energy Opportunities | 19,692,792 | 231,539,895 | 2,471.4 | $ 3,232 | $ 275 | $ 0.4056 | $ 0.034 | - | - | - | - | 67,212 | 790,246 | $ 118.8 | $ 10.11 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 3,541,869 | 19,834,469 | 381.7 | $ 3,207 | $ 573 | $ 0.3456 | $ 0.062 | - | - | | | 12,088 | 67,695 | $ 101.3 | $ 18.08 |
| ***TOTAL - C&I LARGE RETROFIT*** | **23,234,662** | **251,374,364** | **2,853.2** | **$ 3,228** | **$ 298** | **$ 0.3964** | **$ 0.037** | **-** | **-** | **-** | **-** | **79,300** | **857,941** | **$ 116.2** | **$ 10.74** |
| | | | | | | | | | | | | | | | |
| Small Business Energy Advantage | 8,325,878 | 104,146,614 | 1,077.5 | $ 3,798 | $ 304 | $ 0.4915 | $ 0.039 | | | | | 28,416 | 355,452 | $ 144.0 | $ 11.51 |
| ***SUBTOTAL C&I*** | **40,734,638** | **498,335,902** | **5,377.8** | **$ 3,252** | **$ 266** | **$ 0.4293** | **$ 0.0351** | **-** | **-** | **-** | **-** | **139,027** | **1,700,820** | **$ 393.8** | **$ 30.83** |
| ***SUBTOTAL OTHER*** | | | | | | | | | | | | | | | |
| ***Total C&LM Budget*** | **58,626,927** | **638,974,821** | **8,314.3** | **$ 3,798** | **$ 348** | **$ 0.5387** | **$ 0.0494** | **158,344** | **4,342,490** | **7,056** | **208,473** | **222,699** | **2,802,121** | **$ 141.8** | **$ 11.27** |

# Table B – United Illuminating Electric Costs and Benefits (2020)

| Program | Utility Costs | Modified Utility Cost | ** Customer Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Modified Utility B/C Ratio | Total Resource B/C Ratio | Goals/No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 2,001,074 | $ 2,001,074 | $ 1,056,117 | $ 3,057,191 | $ 3,932,135 | $ 3,563,198 | $ 4,936,393 | 1.97 | 1.78 | 1.61 | 551322 | Bulbs, Fixtures |
| ***TOTAL - CONSUMER PRODUCTS*** | **$ 2,001,074** | **$ 2,001,074** | **$ 1,056,117** | **$ 3,057,191** | **$ 3,932,135** | **$ 3,563,198** | **$ 4,936,393** | **1.97** | **1.78** | **1.61** | | |
| | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 625,335 | $ 625,335 | $ 1,258,985 | $ 1,884,320 | $ 1,313,018 | $ 1,644,252 | $ 1,894,876 | 2.10 | 2.63 | 1.01 | 451 | No. of Units |
| Home Energy Solutions | $ 1,726,671 | $ 3,752,014 | $ 2,543,357 | $ 6,295,371 | $ 7,202,434 | $ 14,130,248 | $ 18,342,995 | 4.17 | 3.77 | 2.91 | 5788 | No. of Ptcps. |
| HVAC/Water Heaters | $ 1,500,805 | $ 1,500,805 | $ 1,437,749 | $ 2,938,554 | $ 5,237,442 | $ 6,095,667 | $ 7,101,509 | 3.49 | 4.06 | 2.42 | 9783 | No. of Ptcps. |
| HES-Income Eligible | $ 3,635,295 | $ 4,377,349 | $ (415,681) | $ 3,961,668 | $ 4,636,136 | $ 7,495,871 | $ 10,341,322 | 1.28 | 1.71 | 2.61 | 6673 | Customers |
| Residential Behavior | $ 250,134 | $ 250,134 | $ 247,740 | $ 497,874 | $ 1,715,813 | $ 1,715,813 | $ 2,338,534 | 6.86 | 6.86 | 4.70 | 70000 | Customers |
| ***SUB-TOTAL RESIDENTIAL*** | **$ 9,739,316** | **$ 12,506,712** | **$ 6,128,266** | **$ 18,634,978** | **$ 24,036,979** | **$ 34,645,048** | **$ 44,955,629** | **2.47** | **2.77** | **2.41** | | |
| | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 4,396,007 | $ 4,396,007 | $ 3,558,979 | $ 7,954,986 | $ 19,870,990 | $ 19,870,990 | $ 25,056,127 | 4.52 | 4.52 | 3.15 | 487 | Projects |
| ***TOTAL - LOST OPPORTUNITY*** | **$ 4,396,007** | **$ 4,396,007** | **$ 3,558,979** | **$ 7,954,986** | **$ 19,870,990** | **$ 19,870,990** | **$ 25,056,127** | **4.52** | **4.52** | **3.15** | 487 | |
| | | | | | | | | | | | | |
| Energy Opportunities | $ 7,955,445 | $ 7,955,445 | $ 6,971,436 | $ 14,926,882 | $ 32,001,536 | $ 32,001,536 | $ 40,553,790 | 4.02 | 4.02 | 2.72 | 1013 | Projects |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 1,237,571 | $ 1,237,571 | $ 967,776 | $ 2,205,347 | $ 3,004,994 | $ 3,004,994 | $ 3,900,920 | 2.43 | 2.43 | 1.77 | 76 | Projects |
| ***TOTAL - C&I LARGE RETROFIT*** | **$ 9,193,016** | **$ 9,193,016** | **$ 7,939,213** | **$ 17,132,229** | **$ 35,006,530** | **$ 35,006,530** | **$ 44,454,710** | **3.81** | **3.81** | **2.59** | 1,088 | |
| | | | | | | | | | | | | |
| Small Business Energy Advantage | $ 4,090,569 | $ 4,090,569 | $ 2,591,312 | $ 6,681,881 | $ 13,098,286 | $ 13,098,286 | $ 16,675,912 | 3.20 | 3.20 | 2.50 | 218 | Projects |
| ***SUB-TOTAL C&I*** | **$ 17,679,592** | **$ 17,679,592** | **$ 14,089,504** | **$ 31,769,095** | **$ 67,975,806** | **$ 67,975,806** | **$ 86,186,749** | **3.84** | **3.84** | **2.71** | **1,793** | **Projects** |
| ***SUB-TOTAL OTHER*** | **$ 5,934,052** | **$ 5,934,052** | | | | | | | | | | |
| ***Total C&LM Budget*** | **$ 33,352,959** | **$ 36,120,356** | **$ 20,217,769** | **$ 50,404,073** | **$ 92,012,785** | **$ 102,620,855** | **$ 131,142,378** | **2.76** | **2.84** | **2.60** | | **Projects** |

# Table B – United Illuminating Electric Costs and Benefits (2020) — continued

| Program | Annualized Savings kWh | Lifetime Savings kWh | Peak kW Impact (Y/E) | Electric Demand Cost $/kW | Electric Demand Cost $/kW yr | Electric Cost Rate $/kWh Annualized | Electric Cost Rate $/LT-kWh | Annualized Savings Oil (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | 5,550,206.39 | 26,344,164.51 | 703.92 | $ 2,843 | $ 599 | $ 0.3605 | $ 0.076 | (37,893.05) | (103,088.53) | (1,595.34) | (6,381.37) | 13,542 | 75,032 | $ 147.8 | $ 26.67 |
| ***TOTAL - CONSUMER PRODUCTS*** | **5,550,206** | **26,344,165** | **703.9** | **$ 2,843** | **$ 599** | **$ 0.3605** | **$ 0.076** | **(37,893)** | **(103,089)** | **(1,595)** | **(6,381)** | **13,542** | **75,032** | **$ 147.8** | **$ 26.67** |
| | | | | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 348,073.19 | 5,663,981.17 | 138.61 | $ 4,512 | $ 277 | $ 1.7966 | $ 0.110 | - | - | 6,359.89 | 161,691.75 | 1,769 | 34,098 | $ 353.5 | $ 18.34 |
| Home Energy Solutions | 4,088,574.86 | 29,360,529.76 | 1,129.65 | $ 1,528 | $ 213 | $ 0.4223 | $ 0.059 | 137,228.92 | 2,818,865.19 | 1,959.21 | 41,662.45 | 33,166 | 494,961 | $ 52.1 | $ 3.49 |
| HVAC/Water Heaters | 1,342,474.69 | 21,404,437.56 | 596.21 | $ 2,517 | $ 158 | $ 1.1179 | $ 0.070 | 10,395.37 | 135,139.76 | 15,787.54 | 205,238.07 | 7,465 | 110,540 | $ 201.0 | $ 13.58 |
| HES-Income Eligible | 4,961,417.74 | 41,112,019.02 | 516.13 | $ 7,043 | $ 850 | $ 0.7327 | $ 0.088 | 58,693.32 | 1,318,508.04 | - | - | 25,073 | 323,179 | $ 145.0 | $ 11.25 |
| Residential Behavior | 4,537,231.13 | 11,388,450 | - | | | $ 0.0551 | $ 0.022 | - | - | - | - | 15,486 | 38,869 | $ 16.2 | $ 6.44 |
| ***SUB-TOTAL RESIDENTIAL*** | **20,827,978** | **135,273,582** | **3,084.5** | **$ 3,157** | **$ 486** | **$ 0.4676** | **$ 0.072** | **168,425** | **4,169,424** | **22,511** | **402,211** | **96,501** | **1,076,680** | **$ 100.9** | **$ 9.05** |
| | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 9,483,314.73 | 147,628,568.63 | 1,495.86 | $ 2,939 | $ 189 | $ 0.4636 | $ 0.030 | | | | | 32,367 | 503,856 | $ 135.8 | $ 8.72 |
| ***TOTAL - LOST OPPORTUNITY*** | **9,483,314.73** | **147,628,568.63** | **1,495.86** | **$ 2,939** | **$ 189** | **$ 0.4636** | **$ 0.030** | **-** | **-** | **-** | **-** | **32,367** | **503,856** | **$ 135.8** | **$ 8.72** |
| | | | | | | | | | | | | | | | |
| Energy Opportunities | 19,178,688 | 225,495,262 | 2,471.44 | $ 3,219 | $ 274 | $ 0.4148 | $ 0.035 | - | - | - | - | 65,457 | 769,615 | $ 121.5 | $ 10.34 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 3,509,244 | 19,651,769 | 381.74 | $ 3,242 | $ 579 | $ 0.3527 | $ 0.063 | - | - | | | 11,977 | 67,071 | $ 103.3 | $ 18.45 |
| ***TOTAL - C&I LARGE RETROFIT*** | **22,687,932** | **245,147,031** | **2,853.18** | **$ 3,222** | **$ 298** | **$ 0.4052** | **$ 0.038** | **-** | **-** | **-** | **-** | **77,434** | **836,687** | **$ 118.7** | **$ 10.99** |
| | | | | | | | | | | | | | | | |
| Small Business Energy Advantage | 7,511,843 | 93,990,363 | 1,077.49 | $ 3,796 | $ 303 | $ 0.5445 | $ 0.044 | | | | | 25,638 | 320,789 | $ 159.6 | $ 12.75 |
| ***SUB-TOTAL C&I*** | **39,683,090** | **486,765,963** | **5,426.53** | **$ 3,258** | **$ 266** | **$ 0.4455** | **$ 0.036** | **-** | **-** | **-** | **-** | **135,438** | **1,661,332** | **$ 414.1** | **$ 32.46** |
| ***SUB-TOTAL OTHER*** | | | | | | | | | | | | | | | |
| ***Total C&LM Budget*** | **60,511,068** | **622,039,545** | **8,511.1** | **$ 3,919** | **$ 381** | **$ 0.5512** | **$ 0.054** | **168,425** | **4,169,424** | **22,511** | **402,211** | **231,939** | **2,738,012** | **$ 143.8** | **$ 12.18** |

## Table B – United Illuminating Electric Costs and Benefits (2021)

| Program | Utility Costs | Modified Utility Cost | ** Customer Cost | Total Resource Cost | Utility Benefit | Modified Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Modified Utility B/C Ratio | Total Resource B/C Ratio | Goals/No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 1,786,803 | $ 1,786,803 | $ 1,804,673 | $ 3,591,476 | $ 2,307,302 | $ 2,524,226 | $ 3,985,629 | 1.29 | 1.41 | 1.11 | 297,787.59 | Bulbs, Fixtures |
| ***TOTAL: CONSUMER PRODUCTS*** | **$ 1,786,803** | **$ 1,786,803** | **$ 1,804,673** | **$ 3,591,476** | **$ 2,307,302** | **$ 2,524,226** | **$ 3,985,629** | **1.29** | **1.41** | **1.11** | | |
| | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 595,600 | $ 595,600 | $ 1,176,451 | $ 1,772,051 | $ 1,204,716 | $ 1,540,197 | $ 1,769,174 | 2.02 | 2.59 | 1.00 | 426 | No. of Units |
| Home Energy Solutions | $ 2,154,465 | $ 3,573,606 | $ 1,309,797 | $ 4,883,403 | $ 5,669,310 | $ 12,546,459 | $ 16,319,430 | 2.63 | 3.51 | 3.34 | 5,398 | No. of Ptcps. |
| HVAC/Water Heaters | $ 1,429,442 | $ 1,429,442 | $ 2,036,741 | $ 3,466,183 | $ 4,166,918 | $ 5,018,054 | $ 5,983,354 | 2.92 | 3.51 | 1.73 | 9,262 | No. of Ptcps. |
| HES-Income Eligible | $ 3,427,152 | $ 4,169,206 | $ 52,452 | $ 4,221,658 | $ 3,821,290 | $ 5,632,512 | $ 7,846,619 | 1.12 | 1.35 | 1.86 | 6,306 | Customers |
| Residential Behavior | $ 357,361 | $ 357,361 | $ 412,866 | $ 770,227 | $ 1,715,813 | $ 1,715,813 | $ 2,338,534 | 4.80 | 4.80 | 3.04 | 70,000 | Customers |
| ***SUBTOTAL: RESIDENTIAL*** | **$ 9,750,824** | **$ 11,912,018** | **$ 6,792,980** | **$ 18,704,998** | **$ 18,885,350** | **$ 28,977,261** | **$ 38,242,739** | **1.94** | **2.43** | **2.04** | | |
| | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 4,082,985 | $ 4,082,985 | $ 3,341,855 | $ 7,424,840 | $ 17,644,680 | $ 17,644,680 | $ 22,343,386 | 4.32 | 4.32 | 3.01 | 477 | Projects |
| ***TOTAL: LOST OPPORTUNITY*** | **$ 4,082,985** | **$ 4,082,985** | **$ 3,341,855** | **$ 7,424,840** | **$ 17,644,680** | **$ 17,644,680** | **$ 22,343,386** | **4.32** | **4.32** | **3.01** | 477 | |
| | | | | | | | | | | | | |
| Energy Opportunities | $ 7,366,718 | $ 7,366,718 | $ 6,544,489 | $ 13,911,207 | $ 27,779,276 | $ 27,779,276 | $ 35,547,182 | 3.77 | 3.77 | 2.56 | 908 | Projects |
| Business & Energy Sustainability (O&M, RCx, BSC,PRIME, CSP/SEM) | $ 1,147,785 | $ 1,147,785 | $ 902,608 | $ 2,050,393 | $ 2,745,937 | $ 2,745,937 | $ 3,552,922 | 2.39 | 2.39 | 1.73 | 67 | Projects |
| ***TOTAL: C&I LARGE RETROFIT*** | **$ 8,514,503** | **$ 8,514,503** | **$ 7,447,097** | **$ 15,961,599** | **$ 30,525,212** | **$ 30,525,212** | **$ 39,100,104** | **3.59** | **3.59** | **2.45** | 976 | |
| | | | | | | | | | | | | |
| Small Business Energy Advantage | $ 3,799,435 | $ 3,799,435 | $ 2,593,684 | $ 6,393,120 | $ 12,242,752 | $ 12,242,752 | $ 15,674,410 | 3.22 | 3.22 | 2.45 | 207 | Projects |
| ***SUBTOTAL C&I*** | **$ 16,396,922** | **$ 16,396,922** | **$ 13,382,637** | **$ 29,779,559** | **$ 60,412,644** | **$ 60,412,644** | **$ 77,117,900** | **3.68** | **3.68** | **2.59** | **1,659** | **Projects** |
| ***SUBTOTAL OTHER*** | **$ 7,129,068** | **$ 7,129,068** | | | | | | | | | | |
| ***Total C&LM Budget*** | **$ 33,276,814** | **$ 35,438,008** | **$ 20,175,616** | **$ 48,484,557** | **$ 79,297,993** | **$ 89,389,905** | **$ 115,360,639** | **2.38** | **2.52** | **2.38** | | **Projects** |

# Table B – United Illuminating Electric Costs and Benefits (2021) — continued

| Program | Annualized Savings kWh | Lifetime Savings kWh | Peak kW Impact (Y/E) | Electric Demand Cost $/kW | Electric Demand Cost $/kW yr | Electric Cost Rate $/kWh Annualized | Electric Cost Rate $/LT-kWh | Annualized Savings Oil (Gal) | Lifetime Oil Savings (Gal) | Annual Propane Savings (Gal) | Lifetime Propane Savings (Gal) | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | 3,345,950 | 17,126,670 | 389.65 | $ 4,586 | $ 896 | $ 0.5340 | $ 0.104 | (10,725.25) | 59,701.70 | (786.95) | (2,360.85) | 9,860 | 66,518 | $ 181.2 | $ 26.86 |
| ***TOTAL: CONSUMER PRODUCTS*** | **3,345,950** | **17,126,670** | **389.6** | **$ 4,586** | **$ 896** | **$ 0.5340** | **$ 0.104** | **(10,725)** | **59,702** | **(787)** | **(2,361)** | **9,860** | **66,518** | **$ 181.2** | **$ 26.86** |
| | | | | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 260,046 | 5,008,789 | 126 | $ 4,709 | $ 244 | $ 2.2904 | $ 0.119 | - | - | 6,069 | 153,070 | 1,442 | 31,075 | $ 413.1 | $ 19.17 |
| Home Energy Solutions | 2,651,344 | 21,022,724 | 871 | $ 2,474 | $ 312 | $ 0.8126 | $ 0.102 | 132,160 | 2,628,620 | 2,091 | 42,123 | 27,569 | 440,161 | $ 78.1 | $ 4.89 |
| HVAC/Water Heaters | 1,270,970 | 20,264,372 | 439 | $ 3,256 | $ 204 | $ 1.1247 | $ 0.071 | 9,842 | 127,942 | 14,947 | 194,306 | 7,068 | 104,653 | $ 202.2 | $ 13.66 |
| HES-Income Eligible | 4,688,606 | 35,190,347 | 488 | $ 7,028 | $ 936 | $ 0.7310 | $ 0.097 | 35,830 | 786,721 | - | - | 20,972 | 229,215 | $ 163.4 | $ 14.95 |
| Residential Behavior | 4,537,231 | 11,388,450 | - | | | $ 0.0788 | $ 0.031 | - | - | - | - | 15,486 | 38,869 | $ 23.1 | $ 9.19 |
| ***SUBTOTAL: RESIDENTIAL*** | **16,754,148** | **110,001,353** | **2,313.5** | **$ 4,215** | **$ 642** | **$ 0.5820** | **$ 0.089** | **167,106** | **3,602,985** | **22,320** | **387,139** | **82,396** | **910,490** | **$ 118.3** | **$ 10.71** |
| | | | | | | | | | | | | | | | |
| Energy Conscious Blueprint | 8,495,532 | 132,251,569 | 1,340.1 | $ 3,047 | $ 196 | $ 0.4806 | $ 0.031 | | | | | 28,995 | 451,375 | $ 140.8 | $ 9.05 |
| ***TOTAL: LOST OPPORTUNITY*** | **8,495,532** | **132,251,569** | **1,340.1** | **$ 3,047** | **$ 196** | **$ 0.4806** | **$ 0.031** | **-** | **-** | **-** | **-** | **28,995** | **451,375** | **$ 140.8** | **$ 9.05** |
| | | | | | | | | | | | | | | | |
| Energy Opportunities | 17,211,436 | 202,365,112 | 2,060.4 | $ 3,575 | $ 304 | $ 0.4280 | $ 0.036 | - | - | - | - | 58,743 | 690,672 | $ 125.4 | $ 10.67 |
| Business & Energy Sustainability (O&M, RCx, BSC,PRIME, CSP/SEM) | 3,119,610 | 17,469,819 | 336.2 | $ 3,414 | $ 610 | $ 0.3679 | $ 0.066 | - | - | | | 10,647 | 59,624 | $ 107.8 | $ 19.25 |
| ***TOTAL: C&I LARGE RETROFIT*** | **20,331,047** | **219,834,931** | **2,396.6** | **$ 3,553** | **$ 329** | **$ 0.4188** | **$ 0.039** | **-** | **-** | **-** | **-** | **69,390** | **750,297** | **$ 122.7** | **$ 11.35** |
| | | | | | | | | | | | | | | | |
| Small Business Energy Advantage | 7,120,753 | 89,122,404 | 922.3 | $ 4,119 | $ 329 | $ 0.5336 | $ 0.043 | | | | | 24,303 | 304,175 | $ 156.3 | $ 12.49 |
| ***SUBTOTAL C&I*** | **35,947,331** | **441,208,904** | **4,659.0** | **$ 3,519** | **$ 287** | **$ 0.4561** | **$ 0.037** | **-** | **-** | **-** | **-** | **122,688** | **1,505,846** | **$ 419.9** | **$ 32.88** |
| ***SUBTOTAL OTHER*** | | | | | | | | | | | | | | | |
| ***Total C&LM Budget*** | **52,701,479** | **551,210,258** | **6,972.6** | **$ 4,773** | **$ 456** | **$ 0.6314** | **$ 0.060** | **167,106** | **3,602,985** | **22,320** | **387,139** | **205,085** | **2,416,336** | **$ 162.3** | **$ 13.77** |

# Table C – United Illuminating Electric Energy Efficiency Budget Details (2019)

THE UNITED ILLUMINATING COMPANY
2019 ENERGY EFFICIENCY
TABLE C

| PROGRAM NAME | UI Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 131,678 | $ 5,000 | $ 300,000 | $ - | $ 1,610,407 | $ 10,000 | $ 5,000 | $ 3,000 | $ 2,065,085 |
| **TOTAL: CONSUMER PRODUCTS** | **$ 131,678** | **$ 5,000** | **$ 300,000** | **$ -** | **$ 1,610,407** | **$ 10,000** | **$ 5,000** | **$ 3,000** | **$ 2,065,085** |
| | | | | | | | | | |
| New Construction, Additions & Maj. Renovations | $ 38,673 | $ 1,500 | $ 6,457 | $ - | $ 543,590 | $ 10,000 | $ 4,000 | $ 3,158 | $ 607,378 |
| Home Energy Solutions | $ 236,996 | $ 13,000 | $ 209,260 | $ - | $ 3,064,010 | $ 100,000 | $ 5,000 | $ 16,000 | $ 3,644,267 |
| HVAC/Water Heaters | $ 24,426 | $ 2,000 | $ 105,883 | $ - | $ 1,311,631 | $ 10,000 | $ 767 | $ 3,000 | $ 1,457,707 |
| HES-Income Eligible | $ 236,996 | $ 20,000 | $ 259,881 | $ - | $ 3,710,269 | $ 12,000 | $ 4,000 | $ 8,500 | $ 4,251,647 |
| Residential Behavior | $ 4,272 | $ 29,560 | $ 83,734 | $ - | $ - | $ 3,315 | $ 332 | $ 265 | $ 121,476 |
| **SUBTOTAL: RESIDENTIAL** | **$ 673,042** | **$ 71,060** | **$ 965,215** | **$ -** | **$ 10,239,908** | **$ 145,315** | **$ 19,099** | **$ 33,923** | **$ 12,147,561** |
| | | | | | | | | | |
| Energy Conscious Blueprint | $ 435,300 | $ 4,000 | $ 167,382 | $ - | $ 3,465,873 | $ 42,000 | $ 10,000 | $ 60,000 | $ 4,184,555 |
| **TOTAL: LOST OPPORTUNITY** | **$ 435,300** | **$ 4,000** | **$ 167,382** | **$ -** | **$ 3,465,873** | **$ 42,000** | **$ 10,000** | **$ 60,000** | **$ 4,184,555** |
| | | | | | | | | | |
| Energy Opportunities | $ 435,300 | $ 6,000 | $ 102,662 | $ - | $ 7,191,476 | $ 50,000 | $ 5,000 | $ 196,757 | $ 7,987,195 |
| Business & Energy Sustainability (O&M, RCx, BSC,PRIME, CSP/SEM) | $ 85,488 | $ 1,320 | $ 118,838 | $ - | $ 984,200 | $ 17,825 | $ 4,000 | $ 12,500 | $ 1,224,171 |
| **TOTAL: C&I LARGE RETROFIT** | **$ 520,788** | **$ 7,320** | **$ 221,500** | **$ -** | **$ 8,175,677** | **$ 67,825** | **$ 9,000** | **$ 209,257** | **$ 9,211,366** |
| | | | | | | | | | |
| Small Business Energy Advantage | $ 409,507 | $ 2,000 | $ 223,992 | $ 25,000 | $ 2,902,234 | $ 37,000 | $ 2,500 | $ 490,000 | $ 4,092,233 |
| **SUBTOTAL: C&I** | **$ 1,365,594** | **$ 13,320** | **$ 612,874** | **$ 25,000** | **$ 14,543,783** | **$ 146,825** | **$ 21,500** | **$ 759,257** | **$ 17,488,154** |
| | | | | | | | | | |
| Educate the Public | $ 167,087 | $ 5,678 | $ 24,402 | $ 29,667 | $ - | $ 3,432 | $ 52,200 | $ 11,813 | $ 294,279 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Educate the Students | $ 48,850 | $ 1,012 | $ 59,630 | $ - | $ - | $ 800 | $ 6,400 | $ 300 | $ 116,992 |
| Educate the Workforce | $ 18,319 | $ 1,814 | $ 23,364 | $ - | $ - | $ - | $ 3,800 | $ 336 | $ 47,633 |
| **SUBTOTAL: EDUCATION** | **$ 234,256** | **$ 8,504** | **$ 107,396** | **$ 29,667** | **$ -** | **$ 4,232** | **$ 62,400** | **$ 12,449** | **$ 458,904** |
| | | | | | | | | | |
| Financing Support - Residential | $ 45,895 | $ - | $ - | $ - | $ - | $ - | $ 102,109 | $ - | $ 148,004 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ - | $ - | $ 151,250 | $ - | $ - | $ - | $ - | $ - | $ 151,250 |
| **SUBTOTAL: PROGRAMS/REQUIREMENTS** | **$ 45,895** | **$ -** | **$ 151,250** | **$ -** | **$ -** | **$ -** | **$ 102,109** | **$ -** | **$ 299,254** |
| | | | | | | | | | |
| Demand Response Pilot - Residential | $ 183,579 | $ - | $ 514,976 | $ - | $ 139,494 | $ 7,500 | $ 3,750 | $ 3,000 | $ 852,299 |
| Demand Response Pilot - C&I | $ 24,477 | | $ 67,540 | | $ 45,000 | $ 7,500 | $ 3,750 | $ 3,000 | $ 151,267 |
| **SUBTOTAL: LOAD MANAGEMENT** | **$ 208,056** | **$ -** | **$ 582,516** | **$ -** | **$ 184,494** | **$ 15,000** | **$ 7,500** | **$ 6,000** | **$ 1,003,566** |
| | | | | | | | | | |
| Administration | $ 236,032 | $ 17,000 | $ 1,000 | $ - | $ - | $ - | $ - | $ 4,720 | $ 258,752 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 33,440 | $ - | $ - | $ 33,440 |
| Planning | $ 97,909 | $ - | $ 32,275 | $ - | $ - | $ - | $ - | $ 4,250 | $ 134,434 |
| Evaluation Measurement and Verification | $ - | $ - | $ 255,806 | $ - | $ - | $ - | $ - | $ - | $ 255,806 |
| Evaluation Administrator | $ - | $ - | $ 44,800 | $ - | $ - | $ - | $ - | $ - | $ 44,800 |
| Information Technology | $ 92,667 | $ 130,050 | $ 227,593 | $ - | $ - | $ - | $ - | $ 2,210 | $ 452,520 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 76,544 | $ - | $ - | $ - | $ - | $ - | $ 76,544 |
| Audits - Financial and Operational | $ - | $ - | $ 24,000 | $ - | $ - | $ - | $ - | $ - | $ 24,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,463,958 | $ - | $ 1,463,958 |
| **SUBTOTAL: ADMIN & PLANNING** | **$ 426,608** | **$ 147,050** | **$ 662,018** | **$ -** | **$ -** | **$ 33,440** | **$ 1,463,958** | **$ 11,180** | **$ 2,744,254** |
| **TOTAL EE BUDGET** | **$ 2,953,451** | **$ 239,933** | **$ 3,081,269** | **$ 54,667** | **$ 24,968,186** | **$ 344,812** | **$ 1,676,565** | **$ 822,810** | **$ 34,141,692** |

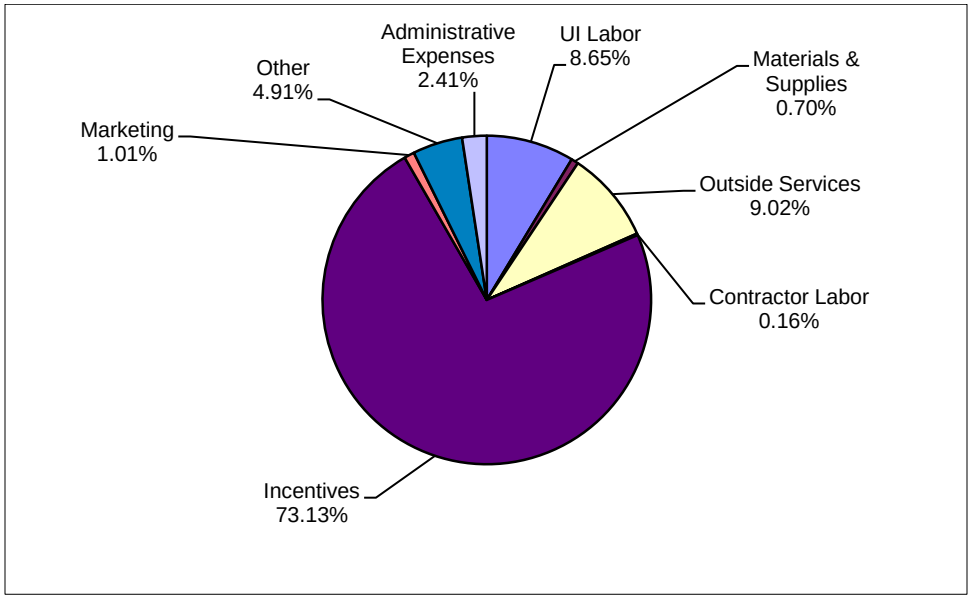
Totals may vary due to rounding.

## United Illuminating Electric Table C Pie Chart (2019)

**THE UNITED ILLUMINATING COMPANY**

**2019 ENERGY EFFICIENCY**

**EE BUDGET BY EXPENSE CLASS**




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| UI Labor | $ | 2,953,451 | 8.65% |
| Materials & Supplies | $ | 239,933 | 0.70% |
| Outside Services | $ | 3,081,269 | 9.02% |
| Contractor Labor | $ | 54,667 | 0.16% |
| Incentives | $ | 24,968,186 | 73.13% |
| Marketing | $ | 344,812 | 1.01% |
| Other | $ | 1,676,565 | 4.91% |
| Administrative Expenses | $ | 822,810 | 2.41% |
| | | | |
| **Total** | **$** | **34,141,692** | **100.00%** |

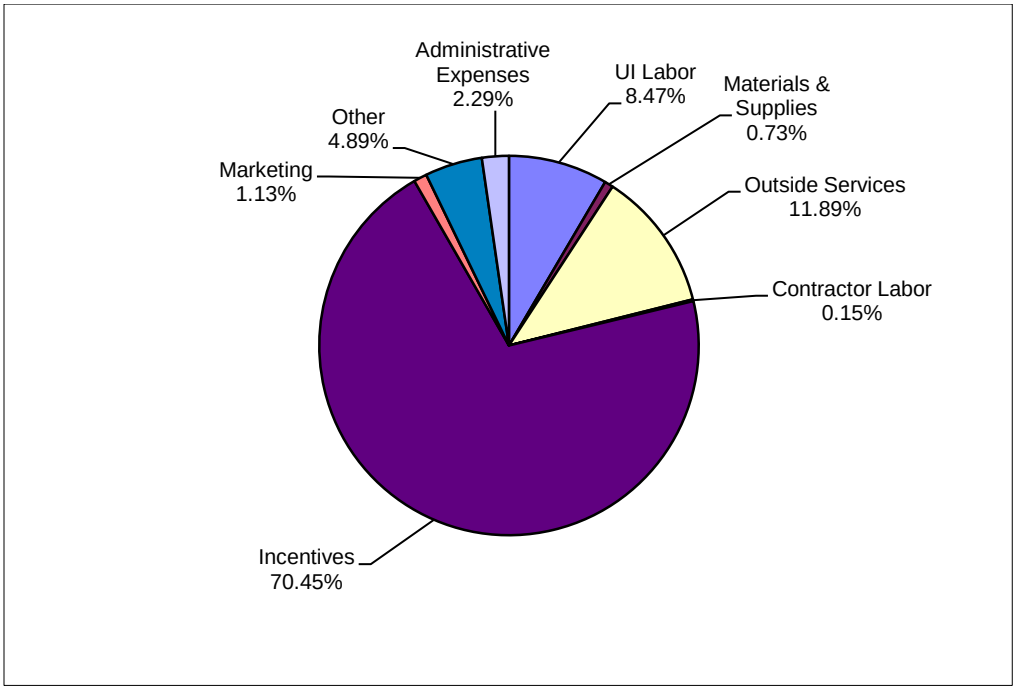
# Table C – United Illuminating Electric Energy Efficiency Budget Details (2020)

THE UNITED ILLUMINATING COMPANY
2020 ENERGY EFFICIENCY
TABLE C

| PROGRAM NAME | UI Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 135,629 | $ 5,000 | $ 300,000 | $ - | $ 1,542,446 | $ 10,000 | $ 5,000 | $ 3,000 | $ 2,001,074 |
| **TOTAL: CONSUMER PRODUCTS** | **$ 135,629** | **$ 5,000** | **$ 300,000** | **$ -** | **$ 1,542,446** | **$ 10,000** | **$ 5,000** | **$ 3,000** | **$ 2,001,074** |
| | | | | | | | | | |
| New Construction, Additions & Maj. | $ 39,833 | $ 1,500 | $ 6,457 | $ - | $ 560,387 | $ 10,000 | $ 4,000 | $ 3,158 | $ 625,335 |
| Home Energy Solutions | $ 248,463 | $ 13,000 | $ 200,000 | $ - | $ 3,169,551 | $ 100,000 | $ 5,000 | $ 16,000 | $ 3,752,014 |
| HVAC/Water Heaters | $ 25,159 | $ 2,000 | $ 105,883 | $ - | $ 1,353,996 | $ 10,000 | $ 767 | $ 3,000 | $ 1,500,805 |
| HES-Income Eligible | $ 248,463 | $ 20,000 | $ 259,881 | $ - | $ 3,824,505 | $ 12,000 | $ 4,000 | $ 8,500 | $ 4,377,349 |
| Residential Behavior | $ 18,863 | $ 53,036 | $ 175,184 | $ - | $ - | $ 684 | $ 1,197 | $ 1,171 | $ 250,134 |
| **SUBTOTAL: RESIDENTIAL** | **$ 716,410** | **$ 94,536** | **$ 1,047,405** | **$ -** | **$ 10,450,885** | **$ 142,684** | **$ 19,964** | **$ 34,829** | **$ 12,506,712** |
| | | | | | | | | | |
| Energy Conscious Blueprint | $ 448,359 | $ 4,000 | $ 175,840 | $ - | $ 3,655,808 | $ 42,000 | $ 10,000 | $ 60,000 | $ 4,396,007 |
| **TOTAL: LOST OPPORTUNITY** | **$ 448,359** | **$ 4,000** | **$ 175,840** | **$ -** | **$ 3,655,808** | **$ 42,000** | **$ 10,000** | **$ 60,000** | **$ 4,396,007** |
| | | | | | | | | | |
| Energy Opportunities | $ 448,359 | $ 6,000 | $ 102,662 | $ - | $ 7,146,667 | $ 50,000 | $ 5,000 | $ 196,757 | $ 7,955,445 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 88,052 | $ 1,320 | $ 118,838 | $ - | $ 995,035 | $ 17,825 | $ 4,000 | $ 12,500 | $ 1,237,571 |
| **TOTAL - C&I LARGE RETROFIT** | **$ 536,411** | **$ 7,320** | **$ 221,500** | **$ -** | **$ 8,141,703** | **$ 67,825** | **$ 9,000** | **$ 209,257** | **$ 9,193,016** |
| | | | | | | | | | |
| Small Business Energy Advantage | $ 421,792 | $ 2,000 | $ 223,992 | $ 25,000 | $ 2,888,285 | $ 37,000 | $ 2,500 | $ 490,000 | $ 4,090,569 |
| **SUBTOTAL C&I** | **$ 1,406,562** | **$ 13,320** | **$ 621,332** | **$ 25,000** | **$ 14,685,795** | **$ 146,825** | **$ 21,500** | **$ 759,257** | **$ 17,679,592** |
| | | | | | | | | | |
| Educate the Public | $ 172,099 | $ 5,678 | $ 24,402 | $ 29,667 | $ - | $ 3,432 | $ 52,200 | $ 11,813 | $ 299,292 |
| Customer Engagement | $ - | $ - | $ 475,000 | $ - | $ - | $ - | $ - | $ - | $ 475,000 |
| Educate the Students | $ 50,316 | $ 1,012 | $ 42,415 | $ - | $ - | $ 800 | $ 6,400 | $ 300 | $ 101,242 |
| Educate the Workforce | $ 18,868 | $ 1,814 | $ 13,124 | $ - | $ - | $ - | $ 3,800 | $ 336 | $ 37,943 |
| **SUBTOTAL: EDUCATION** | **$ 241,283** | **$ 8,504** | **$ 554,941** | **$ 29,667** | **$ -** | **$ 4,232** | **$ 62,400** | **$ 12,449** | **$ 913,477** |
| | | | | | | | | | |
| Financing Support - Residential | $ 47,272 | $ - | $ - | $ - | $ - | $ - | $ 102,109 | $ - | $ 149,381 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ - | $ - | $ 151,250 | $ - | $ - | $ - | $ - | $ - | $ 151,250 |
| **SUBTOTAL: PROGRAMS/REQUIREMENTS** | **$ 47,272** | **$ -** | **$ 151,250** | **$ -** | **$ -** | **$ -** | **$ 102,109** | **$ -** | **$ 300,630** |
| | | | | | | | | | |
| Demand Response Pilot - Residential | $ 183,579 | $ - | $ 901,208 | $ - | $ 244,115 | $ 13,125 | $ 6,563 | $ 5,250 | $ 1,353,839 |
| Demand Response Pilot - C&I | $ 24,477 | $ - | $ 101,310 | $ - | $ 67,500 | $ 11,250 | $ 5,625 | $ 4,500 | $ 214,662 |
| **SUBTOTAL: LOAD MANAGEMENT** | **$ 208,056** | **$ -** | **$ 1,002,518** | **$ -** | **$ 311,615** | **$ 24,375** | **$ 12,188** | **$ 9,750** | **$ 1,568,501** |
| | | | | | | | | | |
| Administration | $ 243,113 | $ 17,000 | $ 1,000 | $ - | $ - | $ - | $ - | $ 4,720 | $ 265,833 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 89,100 | $ - | $ - | $ 89,100 |
| Planning | $ 100,846 | $ - | $ 32,271 | $ - | $ - | $ - | $ - | $ 4,250 | $ 137,367 |
| Evaluation Measurement and Verification | $ - | $ - | $ 480,000 | $ - | $ - | $ - | $ - | $ - | $ 480,000 |
| Evaluation Administrator | $ - | $ - | $ 48,000 | $ - | $ - | $ - | $ - | $ - | $ 48,000 |
| Information Technology | $ 95,447 | $ 130,050 | $ 227,593 | $ - | $ - | $ - | $ - | $ 2,210 | $ 455,300 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 104,000 | $ - | $ - | $ - | $ - | $ - | $ 104,000 |
| Audits - Financial and Operational | $ - | $ - | $ 24,000 | $ - | $ - | $ - | $ - | $ - | $ 24,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,547,843 | $ - | $ 1,547,843 |
| **SUBTOTAL: ADMIN & PLANNING** | **$ 439,406** | **$ 147,050** | **$ 916,864** | **$ -** | **$ -** | **$ 89,100** | **$ 1,547,843** | **$ 11,180** | **$ 3,151,444** |
| | | | | | | | | | |
| **TOTAL EE BUDGET** | **$ 3,058,989** | **$ 263,410** | **$ 4,294,311** | **$ 54,667** | **$ 25,448,295** | **$ 407,216** | **$ 1,766,003** | **$ 827,465** | **$ 36,120,356** |

Totals may vary due to rounding.

## United Illuminating Electric Table C Pie Chart (2020)



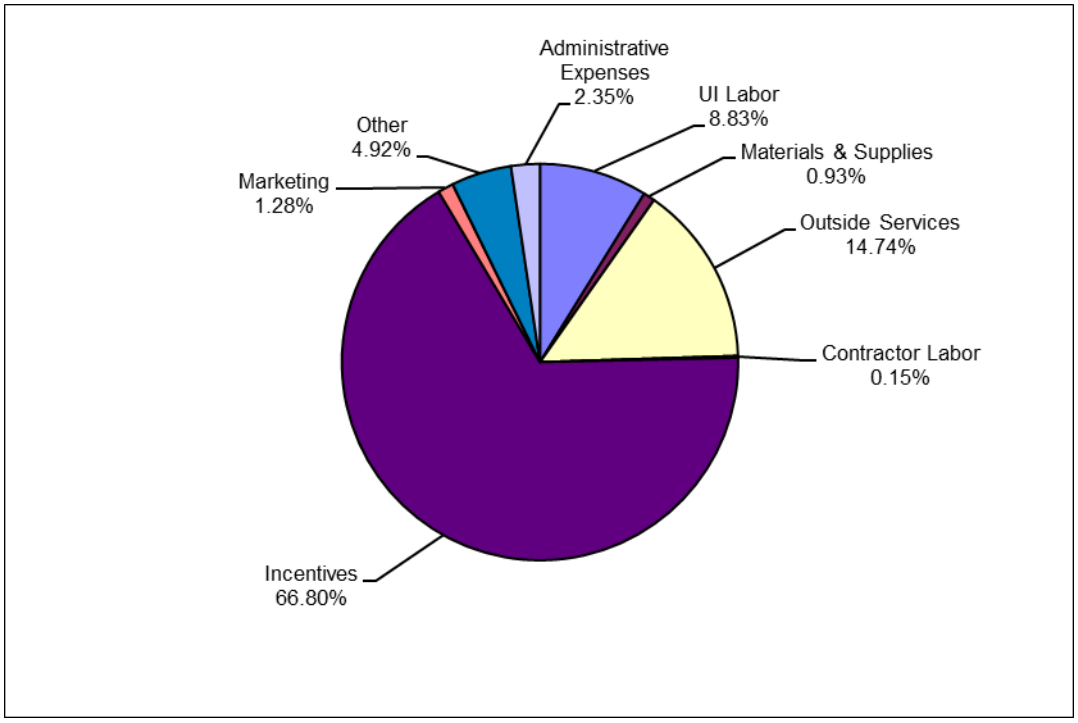

| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| UI Labor | $ | 3,058,989 | 8.47% |
| Materials & Supplies | $ | 263,410 | 0.73% |
| Outside Services | $ | 4,294,311 | 11.89% |
| Contractor Labor | $ | 54,667 | 0.15% |
| Incentives | $ | 25,448,295 | 70.45% |
| Marketing | $ | 407,216 | 1.13% |
| Other | $ | 1,766,003 | 4.89% |
| Administrative Expenses | $ | 827,465 | 2.29% |
| | | | |
| Total | $ | 36,120,356 | 100.00% |
| | | | |
| Totals may vary due to rounding. | | | |

## Table C – United Illuminating Electric Energy Efficiency Budget Details (2021)

**THE UNITED ILLUMINATING COMPANY**
**2021 ENERGY EFFICIENCY**
**TABLE C**

| PROGRAM NAME | UI Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | $ 139,698 | $ 5,000 | $ 300,000 | $ - | $ 1,324,106 | $ 10,000 | $ 5,000 | $ 3,000 | $ 1,786,803 |
| **TOTAL: CONSUMER PRODUCTS** | **$ 139,698** | **$ 5,000** | **$ 300,000** | **$ -** | **$ 1,324,106** | **$ 10,000** | **$ 5,000** | **$ 3,000** | **$ 1,786,803** |
| | | | | | | | | | |
| New Construction, Additions & Maj. | $ 41,028 | $ 1,500 | $ 6,457 | $ - | $ 529,457 | $ 10,000 | $ 4,000 | $ 3,158 | $ 595,600 |
| Home Energy Solutions | $ 248,863 | $ 13,000 | $ 200,000 | $ - | $ 2,990,743 | $ 100,000 | $ 5,000 | $ 16,000 | $ 3,573,606 |
| HVAC/Water Heaters | $ 25,914 | $ 2,000 | $ 105,883 | $ - | $ 1,281,878 | $ 10,000 | $ 767 | $ 3,000 | $ 1,429,442 |
| HES-Income Eligible | $ 248,863 | $ 20,000 | $ 259,881 | $ - | $ 3,615,963 | $ 12,000 | $ 4,000 | $ 8,500 | $ 4,169,206 |
| Residential Behavior | $ 17,354 | $ 120,075 | $ 217,125 | $ - | $ - | $ 629 | $ 1,101 | $ 1,077 | $ 357,361 |
| **SUBTOTAL: RESIDENTIAL** | **$ 721,718** | **$ 161,575** | **$ 1,089,346** | **$ -** | **$ 9,742,147** | **$ 142,629** | **$ 19,868** | **$ 34,735** | **$ 11,912,018** |
| | | | | | | | | | |
| Energy Conscious Blueprint | $ 461,810 | $ 4,000 | $ 163,319 | $ - | $ 3,341,855 | $ 42,000 | $ 10,000 | $ 60,000 | $ 4,082,985 |
| **TOTAL: LOST OPPORTUNITY** | **$ 461,810** | **$ 4,000** | **$ 163,319** | **$ -** | **$ 3,341,855** | **$ 42,000** | **$ 10,000** | **$ 60,000** | **$ 4,082,985** |
| | | | | | | | | | |
| Energy Opportunities | $ 461,810 | $ 6,000 | $ 102,662 | $ - | $ 6,544,489 | $ 50,000 | $ 5,000 | $ 196,757 | $ 7,366,718 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 90,694 | $ 1,320 | $ 118,838 | $ - | $ 902,608 | $ 17,825 | $ 4,000 | $ 12,500 | $ 1,147,785 |
| **TOTAL: C&I LARGE RETROFIT** | **$ 552,504** | **$ 7,320** | **$ 221,500** | **$ -** | **$ 7,447,097** | **$ 67,825** | **$ 9,000** | **$ 209,257** | **$ 8,514,503** |
| | | | | | | | | | |
| *Small Business* | $ 434,446 | $ 2,000 | $ 223,992 | $ 25,000 | $ 2,584,497 | $ 37,000 | $ 2,500 | $ 490,000 | $ 3,799,435 |
| **SUBTOTAL: C&I** | **$ 1,448,759** | **$ 13,320** | **$ 608,811** | **$ 25,000** | **$ 13,373,450** | **$ 146,825** | **$ 21,500** | **$ 759,257** | **$ 16,396,922** |
| | | | | | | | | | |
| Educate the Public | $ 177,262 | $ 5,678 | $ 24,402 | $ 29,667 | $ - | $ 3,432 | $ 52,200 | $ 11,813 | $ 304,455 |
| Customer Engagement | $ - | $ - | $ 475,000 | $ - | $ - | $ - | $ - | $ - | $ 475,000 |
| Educate the Students | $ 51,825 | $ 1,012 | $ 42,415 | $ - | $ - | $ 800 | $ 6,400 | $ 300 | $ 102,752 |
| Educate the Workforce | $ 19,434 | $ 1,814 | $ 13,124 | $ - | $ - | $ - | $ 3,800 | $ 336 | $ 38,509 |
| **SUBTOTAL: EDUCATION** | **$ 248,522** | **$ 8,504** | **$ 554,941** | **$ 29,667** | **$ -** | **$ 4,232** | **$ 62,400** | **$ 12,449** | **$ 920,715** |
| | | | | | | | | | |
| Financing Support - Residential | $ 48,690 | $ - | $ - | $ - | $ - | $ - | $ 102,109 | $ - | $ 150,799 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Research, Development & Demonstration | $ - | $ - | $ 151,250 | $ - | $ - | $ - | $ - | $ - | $ 151,250 |
| **SUBTOTAL: PROGRAMS/REQUIREMENTS** | **$ 48,690** | **$ -** | **$ 151,250** | **$ -** | **$ -** | **$ -** | **$ 102,109** | **$ -** | **$ 302,049** |
| | | | | | | | | | |
| Demand Response Pilot - Residential | $ 183,579 | $ - | $ 1,802,416 | $ - | $ 488,229 | $ 26,250 | $ 13,125 | $ 10,500 | $ 2,524,099 |
| Demand Response Pilot - C&I | $ 24,477 | $ - | $ 101,310 | $ - | $ 67,500 | $ 11,250 | $ 5,625 | $ 4,500 | $ 214,662 |
| **SUBTOTAL: LOAD MANAGEMENT** | **$ 208,056** | **$ -** | **$ 1,903,726** | **$ -** | **$ 555,729** | **$ 37,500** | **$ 18,750** | **$ 15,000** | **$ 2,738,761** |
| | | | | | | | | | |
| Administration | $ 250,406 | $ 17,000 | $ 1,000 | $ - | $ - | $ - | $ - | $ 4,720 | $ 273,127 |
| Marketing Plan | $ - | $ - | $ - | $ - | $ - | $ 121,400 | $ - | $ - | $ 121,400 |
| Planning | $ 103,872 | $ - | $ 32,271 | $ - | $ - | $ - | $ - | $ 4,250 | $ 140,393 |
| Evaluation Measurement and Verification | $ - | $ - | $ 480,000 | $ - | $ - | $ - | $ - | $ - | $ 480,000 |
| Evaluation Administrator | $ - | $ - | $ 48,000 | $ - | $ - | $ - | $ - | $ - | $ 48,000 |
| Information Technology | $ 98,310 | $ 130,050 | $ 227,593 | $ - | $ - | $ - | $ - | $ 2,210 | $ 458,164 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 104,000 | $ - | $ - | $ - | $ - | $ - | $ 104,000 |
| Audits - Financial and Operational | $ - | $ - | $ 24,000 | $ - | $ - | $ - | $ - | $ - | $ 24,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,518,460 | $ - | $ 1,518,460 |
| **SUBTOTAL: ADMIN & PLANNING** | **$ 452,588** | **$ 147,050** | **$ 916,864** | **$ -** | **$ -** | **$ 121,400** | **$ 1,518,460** | **$ 11,180** | **$ 3,167,543** |
| | | | | | | | | | |
| **TOTAL EE BUDGET** | **$ 3,128,333** | **$ 330,449** | **$ 5,224,939** | **$ 54,667** | **$ 23,671,326** | **$ 452,586** | **$ 1,743,087** | **$ 832,622** | **$ 35,438,008** |

## United Illuminating Electric Table C Pie Chart (2021)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| UI Labor | $ | 3,128,333 | 8.83% |
| Materials & Supplies | $ | 330,449 | 0.93% |
| Outside Services | $ | 5,224,939 | 14.74% |
| Contractor Labor | $ | 54,667 | 0.15% |
| Incentives | $ | 23,671,326 | 66.80% |
| Marketing | $ | 452,586 | 1.28% |
| Other | $ | 1,743,087 | 4.92% |
| Administrative Expenses | $ | 832,622 | 2.35% |
| | | | |
| **Total** | **$** | **35,438,008** | **100.00%** |
| Totals may vary due to rounding. | | | |

# Table D – United Illuminating Electric Historical and Projected ($)

**Table D**

**UI Historical and Projected $**

| RESIDENTIAL | Expenditures $ (000) 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential Retail Products | 2,632 | 2,401 | 2,084 | 3,908 | 3,368 | 4,422 | 4,091 | 1,070 | 2,065 | 2,001 | 1,787 |
| **Total:Consumer Products** | **2,632** | **2,401** | **2,084** | **3,908** | **3,368** | **4,422** | **4,091** | **1,070** | **2,065** | **2,001** | **1,787** |
| New Construction, Additions & Major Renova | 49 | 256 | 171 | 257 | 285 | 497 | 481 | (36) | 607 | 625 | 596 |
| Home Energy Solutions | 3,416 | 2,991 | 2,958 | 4,591 | 3,710 | 3,256 | 3,154 | 2,117 | 3,644 | 3,752 | 3,574 |
| HVAC/Water Heaters | - | - | - | - | - | 1,016 | 1,120 | 1,229 | 1,458 | 1,501 | 1,429 |
| HES-Income Eligible | 3,107 | 2,738 | 4,776 | 3,897 | 3,319 | 3,808 | 3,770 | 2,732 | 4,252 | 4,377 | 4,169 |
| Residential Behavior | - | - | - | 137 | 710 | 489 | 72 | 0 | 121 | 250 | 357 |
| **Subtotal: Residential** | **9,204** | **8,386** | **9,989** | **12,790** | **11,392** | **13,488** | **12,688** | **7,112** | **12,148** | **12,507** | **11,912** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint | 3,011 | 2,184 | 2,103 | 3,960 | 2,687 | 3,091 | 2,280 | 1,721 | 4,185 | 4,396 | 4,083 |
| **Total - Lost Opportunity** | **3,011** | **2,184** | **2,103** | **3,960** | **2,687** | **3,091** | **2,280** | **1,721** | **4,185** | **4,396** | **4,083** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 4,912 | 3,377 | 4,124 | 7,261 | 9,501 | 11,003 | 9,622 | 4,208 | 7,987 | 7,955 | 7,367 |
| Business & Energy Sustainability (O&M, Retr | 123 | 252 | 358 | 653 | 731 | 503 | 541 | 358 | 1,224 | 1,238 | 1,148 |
| **Total - C&I Large Retrofit** | **5,035** | **3,629** | **4,482** | **7,914** | **10,232** | **11,506** | **10,163** | **4,566** | **9,211** | **9,193** | **8,515** |
| Small Business | 1,474 | 2,639 | 2,404 | 2,553 | 3,548 | 3,349 | 4,430 | 2,285 | 4,092 | 4,091 | 3,799 |
| **Subtotal: C&I** | **9,520** | **8,452** | **8,989** | **14,427** | **16,467** | **17,946** | **16,873** | **8,572** | **17,488** | **17,680** | **16,397** |
| **OTHER-EDUCATION** | | | | | | | | | | | |
| Educate the Public | - | - | - | - | - | 564 | 542 | 294 | 294 | 299 | 304 |
| Customer Engagement | - | - | - | - | - | 137 | 20 | 8 | - | 475 | 475 |
| Educate the Students | - | - | - | - | - | 127 | 203 | 83 | 117 | 101 | 103 |
| Educate the Workforce | - | - | - | - | - | 76 | 54 | 36 | 48 | 38 | 39 |
| Smart Living Center / Science Center | 481 | 580 | 602 | 1,095 | 513 | - | - | - | - | - | - |
| EESmarts/K-12 Education | 297 | 337 | 343 | 304 | 322 | - | - | - | - | - | - |
| Clean Energy Communities | 86 | 112 | 241 | 360 | 492 | - | - | - | - | - | - |
| **Subtotal: Education** | **864** | **1,029** | **1,186** | **1,759** | **1,327** | **904** | **819** | **421** | **459** | **913** | **921** |
| **OTHER-PROGRAMS/REQUIREMENTS** | | | | | | | | | | | |
| Financing Support - Residential | 542 | 781 | 158 | 920 | 596 | 249 | 208 | 74 | 148 | 149 | 151 |
| Financing Support - C&I | - | - | - | - | - | 87 | 98 | - | - | - | - |
| Time of Use Program | - | - | - | - | - | - | - | - | - | - | - |
| Research, Development & Demonstration | 19 | 119 | 290 | 59 | 9 | 74 | 185 | 80 | 151 | 151 | 151 |
| Institute for Sustainable Energy | 112 | 112 | 112 | 90 | 99 | - | - | - | - | - | - |
| ESPC Project Manager | - | - | 3 | 17 | 7 | - | - | - | - | - | - |
| C&I Loan Program | - | - | 9 | 16 | 34 | - | - | - | - | - | - |
| EE Loan Defaults | 31 | 36 | 32 | - | 1 | - | - | - | - | - | - |
| C&I Self Funding | - | - | - | 1,000 | - | - | - | - | - | - | - |
| Other Funding Requests | - | - | - | - | - | - | - | - | - | - | - |
| **Subtotal: Programs/Requirements** | **705** | **1,049** | **604** | **2,101** | **746** | **410** | **491** | **155** | **299** | **301** | **302** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | |
| Demand Response Pilot - Residential | - | - | - | - | - | 339 | 644 | 558 | 852 | 1,354 | 2,524 |
| Demand Response Pilot - C&I | - | - | - | - | - | - | 18 | 158 | 151 | 215 | 215 |
| **Subtotal: Load Management** | **-** | **-** | **-** | **-** | **-** | **339** | **662** | **716** | **1,004** | **1,569** | **2,739** |
| **OTHER-ADMINSTRATIVE & PLANNING** | | | | | | | | | | | |
| Administration | 622 | 719 | 901 | 648 | 532 | 475 | 551 | 378 | 259 | 266 | 273 |
| Marketing Plan | 11 | 112 | 35 | 247 | 249 | 227 | 175 | 73 | 33 | 89 | 121 |
| Planning | 297 | 259 | 344 | 314 | 214 | 315 | 283 | 205 | 134 | 137 | 140 |
| Evaluation Measurement and Verification | 243 | 449 | 736 | 486 | 642 | 480 | 494 | 256 | 256 | 480 | 480 |
| Evaluation Administrator | - | - | - | 46 | 52 | 48 | 34 | 45 | 45 | 48 | 48 |
| Information Technology | 318 | 432 | 249 | 192 | 308 | 402 | 273 | 335 | 453 | 455 | 458 |
| Energy Efficiency Board Consultants | 240 | 320 | 232 | 287 | 54 | 208 | 208 | 76 | 77 | 104 | 104 |
| Audits - Financial and Operational | - | - | - | - | - | - | 24 | 12 | 24 | 24 | 24 |
| Performance Management Incentive | 1,035 | 1,261 | 1,518 | 1,743 | 1,821 | 2,353 | 2,370 | 1,321 | 1,464 | 1,548 | 1,518 |
| **Subtotal:Administrative & Planning** | **2,767** | **3,552** | **4,016** | **3,963** | **3,872** | **4,508** | **4,412** | **2,700** | **2,744** | **3,151** | **3,168** |
| **TOTAL** | **23,060** | **22,468** | **24,784** | **35,041** | **33,804** | **37,595** | **35,945** | **19,676** | **34,142** | **36,120** | **35,438** |

## Table D1 – United Illuminating Electric Historical and Projected (kW)

**Table D1**

**UI Historical and Projected (kW)**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Goal | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | 4,008 | 2,008 | 1,860 | 1,907 | 2,757 | 3,180 | 3,365 | 610 | 785 | 704 | 390 |
| **Total - Consumer Products** | **4,008** | **2,008** | **1,860** | **1,907** | **2,757** | **3,180** | **3,365** | **610** | **785** | **704** | **390** |
| New Construction, Additions & Major Renovations | 99 | 26 | 47 | 130 | 75 | 140 | 58 | 42 | 145 | 139 | 126 |
| Home Energy Solutions | 714 | 540 | 553 | 783 | 537 | 551 | 561 | 273 | 1,080 | 1,130 | 871 |
| HVAC/Water Heaters | | | | | | 86 | 97 | 78 | 366 | 596 | 439 |
| HES-Income Eligible | 263 | 188 | 473 | 268 | 192 | 427 | 542 | 108 | 560 | 516 | 488 |
| Residential Behavior | - | - | - | - | - | - | - | - | - | - | - |
| **Subtotal: Residential** | **5,084** | **2,762** | **2,933** | **3,088** | **3,561** | **4,384** | **4,623** | **1,110** | **2,937** | **3,085** | **2,314** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint | 1,071 | 1,539 | 1,267 | 1,344 | 1,414 | 1,567 | 992 | 386 | 1,447 | 1,496 | 1,340 |
| **Total - Lost Opportunity** | **1,071** | **1,539** | **1,267** | **1,344** | **1,414** | **1,567** | **992** | **386** | **1,447** | **1,496** | **1,340** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | - | - | - | - | - | - | - | - | - | - | - |
| Energy Opportunities | 1,840 | 1,844 | 1,164 | 2,171 | 4,331 | 3,830 | 4,348 | 1,347 | 2,471 | 2,471 | 2,060 |
| Business & Energy Sustainability (O&M, RCx, BSC,PRIME, CSP/SEM) | 34 | 11 | 20 | 93 | 153 | 113 | 7 | 27 | 382 | 382 | 336 |
| Municipal Energy & Schools | - | - | - | - | - | - | - | - | - | - | - |
| **Total - C&I Large Retrofit** | **1,874** | **1,855** | **1,184** | **2,264** | **4,484** | **3,943** | **4,355** | **1,375** | **2,853** | **2,853** | **2,397** |
| Small Business Energy Advantage | 811 | 815 | 579 | 587 | 1,176 | 1,238 | 1,316 | 515 | 1,077 | 1,077 | 922 |
| **Subtotal: C&I** | **3,756** | **4,209** | **3,030** | **4,195** | **7,074** | **6,748** | **6,663** | **2,276** | **5,378** | **5,427** | **4,659** |
| **OTHER - LOAD MANAGEMENT** | | | | | | | | | | | |
| Demand Response | - | - | - | - | - | - | - | - | - | - | - |
| **Subtotal: Load Management** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | | **-** | **-** | **-** |
| **TOTAL** | **8,840** | **6,971** | **5,963** | **7,283** | **10,635** | **11,132** | **11,286** | **3,386** | **8,314** | **8,512** | **6,975** |

## Table D2 – United Illuminating Electric Historical and Projected Annual kWh

| Annual kWh (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | 45,644 | 22,554 | 21,333 | 21,900 | 22,493 | 25,732 | 27,168 | 3,510 | 6,051 | 5,550 | 3,346 |
| **Total: Consumer Products** | **45,644** | **22,554** | **21,333** | **21,900** | **22,493** | **25,732** | **27,168** | **3,510** | **6,051** | **5,550** | **3,346** |
| New Construction, Additions & Major Renova | 296 | 101 | 180 | 203 | 145 | 405 | 231 | 210 | 474 | 348 | 260 |
| Home Energy Solutions | 3,541 | 3,582 | 2,344 | 4,492 | 3,207 | 2,635 | 2,789 | 2,721 | 4,871 | 4,089 | 2,651 |
| HVAC/ Water Heaters | | | | | | 1,948 | 2,032 | 1,367 | 1,191 | 1,342 | 1,271 |
| HES-Income Eligible | 4,710 | 3,131 | 3,787 | 3,754 | 1,994 | 4,450 | 3,765 | 3,648 | 5,306 | 4,961 | 4,689 |
| Residential Behavior | - | - | - | - | 4,204 | 4,265 | 3,396 | - | - | 4,537 | 4,537 |
| **Subtotal: Residential** | **54,191** | **29,368** | **27,644** | **30,349** | **32,043** | **39,435** | **39,381** | **11,456** | **17,892** | **20,828** | **16,754** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint | 10,653 | 7,098 | 8,277 | 12,505 | 7,942 | 10,688 | 5,660 | 5,821 | 9,174 | 9,483 | 8,496 |
| **Total: Lost Opportunity** | **10,653** | **7,098** | **8,277** | **12,505** | **7,942** | **10,688** | **5,660** | **5,821** | **9,174** | **9,483** | **8,496** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | - | - | - | - | - | - | - | - | - | - | - |
| Energy Opportunities | 16,012 | 14,860 | 10,833 | 19,506 | 35,303 | 34,249 | 40,174 | 20,639 | 19,693 | 19,179 | 17,211 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 137 | 750 | 1,939 | 3,112 | 2,072 | 1,636 | 567 | 164 | 3,542 | 3,509 | 3,120 |
| Municipal Energy & Schools | - | - | - | - | - | - | - | - | - | - | - |
| **Total: C&I Large Retrofit** | **16,149** | **15,610** | **12,772** | **22,618** | **37,375** | **35,885** | **40,741** | **20,803** | **23,235** | **22,688** | **20,331** |
| Small Business Energy Advantage | 5,115 | 6,321 | 5,131 | 7,114 | 8,297 | 8,053 | 8,847 | 6,238 | 8,326 | 7,512 | 7,121 |
| **Subtotal: C&I** | **31,917** | **29,029** | **26,180** | **42,237** | **53,614** | **54,626** | **55,248** | **32,862** | **40,735** | **39,683** | **35,947** |

## Table D3 – United Illuminating Electric Historical and Projected Lifetime kWh

| Lifetime kWh (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | 181,401 | 118,010 | 124,693 | 181,837 | 214,911 | 302,910 | 218,858 | 21,744 | 32,363 | 26,344 | 17,127 |
| **Total - Consumer Products** | **181,401** | **118,010** | **124,693** | **181,837** | **214,911** | **302,910** | **218,858** | **21,744** | **32,363** | **26,344** | **17,127** |
| New Construction, Additions & Major Renovations | 3,452 | 1,113 | 1,702 | 2,498 | 1,817 | 5,995 | 1,836 | 3,169 | 6,301 | 5,664 | 5,009 |
| Home Energy Solutions | 31,175 | 38,988 | 23,439 | 57,406 | 43,369 | 31,635 | 28,492 | 24,573 | 33,951 | 29,361 | 21,023 |
| HVAC/ Water Heaters | | | | | | 26,930 | 26,354 | 24,042 | 20,898 | 21,404 | 20,264 |
| HES-Income Eligible | 52,757 | 35,418 | 46,117 | 50,273 | 24,573 | 58,090 | 42,317 | 40,013 | 47,126 | 41,112 | 35,190 |
| Residential Behavior | - | - | - | - | 10,931 | 11,088 | 8,830 | - | - | 11,388 | 11,388 |
| **Subtotal: Residential** | **268,785** | **193,529** | **195,951** | **292,014** | **295,601** | **436,648** | **326,687** | **113,541** | **140,639** | **135,274** | **110,001** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint/ Energy Conscious Construction | 163,635 | 106,078 | 128,278 | 195,048 | 121,435 | 160,561 | 89,308 | 98,486 | 142,815 | 147,629 | 132,252 |
| **Total - Lost Opportunity** | **163,635** | **106,078** | **128,278** | **195,048** | **121,435** | **160,561** | **89,308** | **98,486** | **142,815** | **147,629** | **132,252** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | - | - | - | - | - | - | - | | - | - | - |
| Energy Opportunities | 205,701 | 183,875 | 137,393 | 230,606 | 393,904 | 415,779 | 480,512 | 254,831 | 231,540 | 225,495 | 202,365 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | 854 | 5,177 | 14,596 | 24,020 | 12,710 | 9,922 | 2,837 | 821 | 19,834 | 19,652 | 17,470 |
| Municipal Energy & Schools | - | - | - | - | - | - | - | | - | - | - |
| **Total - C&I Large Retrofit** | **206,555** | **189,052** | **151,989** | **254,626** | **406,614** | **425,701** | **483,349** | **255,652** | **251,374** | **245,147** | **219,835** |
| Small Business Energy Advantage | 63,381 | 79,627 | 65,167 | 88,661 | 103,281 | 100,003 | 110,908 | 78,121 | 104,147 | 93,990 | 89,122 |
| **Subtotal: C&I** | **433,571** | **374,757** | **345,434** | **538,335** | **631,330** | **686,265** | **683,565** | **432,259** | **498,336** | **486,766** | **441,209** |
| **TOTAL** | **702,356** | **568,286** | **541,385** | **830,349** | **926,931** | **1,122,913** | **1,010,252** | **545,800** | **638,975** | **622,040** | **551,210** |

# Table D5 – United Illuminating Electric Historical and Cost per Projected kW

**Table D5**

**UI Historical and Cost per Projected kW**

| RESIDENTIAL | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Goal | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | $ 657 | $ 1,196 | $ 1,120 | $ 2,049 | $ 1,222 | $ 1,391 | $ 1,216 | $ 1,755 | $ 2,630 | $ 2,843 | $ 4,586 |
| Appliance Retirement | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total: Consumer Products** | **$ 657** | **$ 1,196** | **$ 1,120** | **$ 2,049** | **$ 1,222** | **$ 1,391** | **$ 1,216** | **$ 1,755** | **$ 2,630** | **$ 2,843** | **$ 4,586** |
| New Construction, Additions & Major Renovations | $ 495 | $ 9,846 | $ 3,638 | $ 1,977 | $ 3,800 | $ 3,550 | $ 8,293 | $ (843) | $ 4,181 | $ 4,512 | $ 4,709 |
| Home Energy Solutions | $ 4,784 | $ 5,539 | $ 5,349 | $ 5,863 | $ 6,909 | $ 5,909 | $ 5,622 | $ 7,750 | $ 3,374 | $ 3,321 | $ 4,104 |
| HVAC/ Water Heaters | | | | | | $11,814 | $11,546 | $15,822 | $ 3,982 | $ 2,517 | $ 3,256 |
| HES-Income Eligible | $11,814 | $14,564 | $ 10,097 | $14,541 | $17,286 | $ 8,918 | $ 6,956 | $25,362 | $ 7,594 | $ 8,481 | $ 8,549 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Residential** | **$ 1,810** | **$ 3,036** | **$ 3,406** | **$ 4,142** | **$ 3,199** | **$ 3,077** | **$ 2,745** | **$ 6,819** | **$ 4,137** | **$ 4,055** | **$ 5,149** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint/ Energy Conscious Construction | $ 2,811 | $ 1,419 | $ 1,660 | $ 2,946 | $ 1,900 | $ 1,973 | $ 2,298 | $ 4,456 | $ 2,892 | $ 2,939 | $ 3,047 |
| **Total - Lost Opportunity** | **$ 2,811** | **$ 1,419** | **$ 1,660** | **$ 2,946** | **$ 1,900** | **$ 1,973** | **$ 2,298** | **$ 4,456** | **$ 2,892** | **$ 2,939** | **$ 3,047** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Energy Opportunities | $ 2,670 | $ 1,831 | $ 3,543 | $ 3,345 | $ 2,194 | $ 2,873 | $ 2,213 | $ 3,123 | $ 3,232 | $ 3,219 | $ 3,575 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 3,618 | $22,909 | $ 17,900 | $ 7,022 | $ 4,778 | $ 4,451 | $77,286 | $13,126 | $ 3,207 | $ 3,242 | $ 3,414 |
| Municipal Energy & Schools | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total - C&I Large Retrofit** | **$ 2,687** | **$ 1,956** | **$ 3,785** | **$ 3,496** | **$ 2,282** | **$ 2,918** | **$ 2,334** | **$ 3,321** | **$ 3,228** | **$ 3,222** | **$ 3,553** |
| Small Business Energy Advantage | $ 1,818 | $ 3,238 | $ 4,152 | $ 4,349 | $ 3,017 | $ 2,705 | $ 3,366 | $ 4,438 | $ 3,798 | $ 3,796 | $ 4,119 |
| **Subtotal: C&I** | **$ 2,535** | **$ 2,008** | **$ 2,967** | **$ 3,439** | **$ 2,328** | **$ 2,659** | **$ 2,532** | **$ 3,767** | **$ 3,252** | **$ 3,258** | **$ 3,519** |

## Table D6 – United Illuminating Electric Historical and Cost per Projected Annual kWh

**Table D6**

**United Illuminating Historical and Projected Annual kWh**

| RESIDENTIAL | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | $ 0.058 | $ 0.106 | $ 0.098 | $ 0.178 | $ 0.150 | $ 0.172 | $ 0.151 | $ 0.305 | $0.341 | $ 0.361 | $ 0.534 |
| Appliance Retirement | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total - Consumer Products** | **$ 0.058** | **$ 0.106** | **$ 0.098** | **$ 0.178** | **$ 0.150** | **$ 0.172** | **$ 0.151** | **$ 0.305** | **$0.341** | **$ 0.361** | **$ 0.534** |
| New Construction, Additions & Major Renovations | $ 0.166 | $ 2.535 | $ 0.950 | $ 1.266 | $ 1.966 | $ 1.227 | $ 2.082 | $ (0.169) | $1.281 | $ 1.797 | $ 2.290 |
| Home Energy Solutions | $ 0.965 | $ 0.835 | $ 1.262 | $ 1.022 | $ 1.157 | $ 1.236 | $ 1.131 | $ 0.778 | $0.748 | $ 0.918 | $ 1.348 |
| HVAC/Water Heaters | | | | | | $ 0.522 | $ 0.551 | $ 0.899 | $1.224 | $ 1.118 | $ 1.125 |
| HES Income Eligible | $ 0.660 | $ 0.874 | $ 1.261 | $ 1.038 | $ 1.664 | $ 0.856 | $ 1.001 | $ 0.749 | $0.801 | $ 0.882 | $ 0.889 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 0.169 | $ 0.115 | $ 0.021 | NA | #DIV/0! | $ 0.055 | $ 0.079 |
| **Subtotal RESIDENTIAL** | **$ 0.170** | **$ 0.286** | **$ 0.361** | **$ 0.421** | **$ 0.356** | **$ 0.342** | **$ 0.322** | **$ 0.661** | **$0.679** | **$ 0.600** | **$ 0.711** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.283 | $ 0.308 | $ 0.254 | $ 0.317 | $ 0.338 | $ 0.289 | $ 0.403 | $ 0.296 | $0.456 | $ 0.464 | $ 0.481 |
| **Total - Lost Opportunity** | **$ 0.283** | **$ 0.308** | **$ 0.254** | **$ 0.317** | **$ 0.338** | **$ 0.289** | **$ 0.403** | **$ 0.296** | **$0.456** | **$ 0.464** | **$ 0.481** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Energy Opportunities | $ 0.307 | $ 0.227 | $ 0.381 | $ 0.372 | $ 0.269 | $ 0.321 | $ 0.240 | $ 0.204 | $0.406 | $ 0.415 | $ 0.428 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 0.898 | $ 0.336 | $ 0.185 | $ 0.210 | $ 0.353 | $ 0.307 | $ 0.954 | $ 2.180 | $0.346 | $ 0.353 | $ 0.368 |
| Municipal Energy & Schools | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total - C&I Large Retrofit** | **$ 0.312** | **$ 0.232** | **$ 0.351** | **$ 0.350** | **$ 0.274** | **$ 0.321** | **$ 0.249** | **$ 0.219** | **$0.396** | **$ 0.405** | **$ 0.419** |
| Small Business Energy Advantage | $ 0.288 | $ 0.417 | $ 0.469 | $ 0.359 | $ 0.428 | $ 0.416 | $ 0.501 | $ 0.366 | $0.492 | $ 0.545 | $ 0.534 |
| **Subtotal: C&I** | **$ 0.298** | **$ 0.291** | **$ 0.343** | **$ 0.342** | **$ 0.307** | **$ 0.329** | **$ 0.305** | **$ 0.261** | **$0.429** | **$ 0.446** | **$ 0.456** |

## Table D7 – United Illuminating Electric Historical and Cost per Projected Lifetime kWh

**Table D7**

**United Illuminating Historical and Projected Program Lifetime kWh**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Goal | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| Residential Retail Products | $ 0.015 | $ 0.020 | $ 0.017 | $ 0.021 | $ 0.016 | $ 0.015 | $ 0.019 | $ 0.049 | $0.064 | $ 0.076 | $ 0.104 |
| Appliance Retirement | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total - Consumer Products** | **$ 0.015** | **$ 0.020** | **$ 0.017** | **$ 0.021** | **$ 0.016** | **$ 0.015** | **$ 0.019** | **$ 0.049** | **$0.064** | **$ 0.076** | **$ 0.104** |
| New Construction, Additions & Major Renovations | $ 0.014 | $ 0.230 | $ 0.100 | $ 0.103 | $ 0.157 | $ 0.083 | $ 0.262 | $ (0.011) | $0.096 | $ 0.110 | $ 0.119 |
| Home Energy Solutions | $ 0.110 | $ 0.077 | $ 0.126 | $ 0.080 | $ 0.086 | $ 0.103 | $ 0.111 | $ 0.086 | $0.107 | $ 0.128 | $ 0.170 |
| HVAC/ Water Heaters | | | | | | $ 0.038 | $ 0.042 | $ 0.051 | $0.070 | $ 0.070 | $ 0.071 |
| HES-Income Eligible | $ 0.059 | $ 0.077 | $ 0.104 | $ 0.078 | $ 0.135 | $ 0.066 | $ 0.089 | $ 0.068 | $0.090 | $ 0.106 | $ 0.118 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ 0.065 | $ 0.044 | $ 0.008 | NA | #DIV/0! | $ 0.022 | $ 0.031 |
| **Subtotal: Residential** | **$ 0.034** | **$ 0.043** | **$ 0.051** | **$ 0.044** | **$ 0.039** | **$ 0.031** | **$ 0.039** | **$ 0.067** | **$0.086** | **$ 0.092** | **$ 0.108** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | |
| Energy Conscious Blueprint/ Energy Conscious Construction | $ 0.018 | $ 0.021 | $ 0.016 | $ 0.020 | $ 0.022 | $ 0.019 | $ 0.026 | $ 0.017 | $0.029 | $ 0.030 | $ 0.031 |
| **Total: Lost Opportunity** | **$ 0.018** | **$ 0.021** | **$ 0.016** | **$ 0.020** | **$ 0.022** | **$ 0.019** | **$ 0.026** | **$ 0.017** | **$0.029** | **$ 0.030** | **$ 0.031** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| C&I RFP | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Energy Opportunities | $ 0.024 | $ 0.018 | $ 0.030 | $ 0.031 | $ 0.024 | $ 0.026 | $ 0.020 | $ 0.017 | $0.034 | $ 0.035 | $ 0.036 |
| Business & Energy Sustainability (O&M, RCx, BSC, PRIME, CSP/SEM) | $ 0.144 | $ 0.049 | $ 0.025 | $ 0.027 | $ 0.058 | $ 0.051 | $ 0.191 | $ 0.436 | $0.062 | $ 0.063 | $ 0.066 |
| Municipal Energy & Schools | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Total - C&I Large Retrofit** | **$ 0.024** | **$ 0.019** | **$ 0.029** | **$ 0.031** | **$ 0.025** | **$ 0.027** | **$ 0.021** | **$ 0.018** | **$0.037** | **$ 0.038** | **$ 0.039** |
| Small Business Energy Advantage | $ 0.023 | $ 0.033 | $ 0.037 | $ 0.029 | $ 0.034 | $ 0.033 | $ 0.040 | $ 0.029 | $0.039 | $ 0.044 | $ 0.043 |
| **Subtotal: C&I** | **$ 0.022** | **$ 0.023** | **$ 0.026** | **$ 0.027** | **$ 0.026** | **$ 0.026** | **$ 0.025** | **$ 0.020** | **$0.035** | **$ 0.036** | **$ 0.037** |

## United Illuminating Electric PMI (2019)

**THE UNITED ILLUMINATING COMPANY**

**2019 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2019 Incentive Matrix with Performance Indicators.

The weights applied to each of the individual and sector level metrics were developed in collaboration with Energy Efficiency Board Consultants.

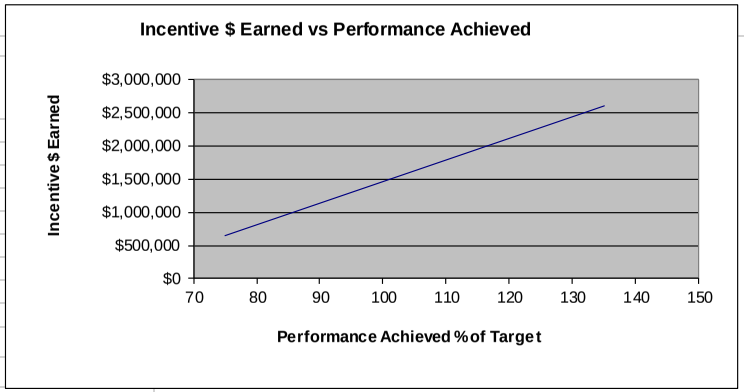
The Utility Performance Incentive is $1,463,958

This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including EEB costs, Audit Costs or Management Incentive).

Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $650,648 |
| 85 | 3.0% | $975,972 |
| 95 | 4.0% | $1,301,296 |
| **100** | **4.5%** | **$1,463,958** |
| 105 | 5.0% | $1,626,620 |
| 115 | 6.0% | $1,951,943 |
| 125 | 7.0% | $2,277,267 |
| 135 | 8.0% | $2,602,591 |
| Total Original Budget* | $32,532,391 | |




*Does not include Incentive, EEB costs, and Audit

## United Illuminating Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| All Residential Programs (Sector Level) Sector Budget | $ 12,147,561 | Residential Products & Services Lifetime kWh | 32,363,082 | Total Electric System Benefit from all Res programs | Electric System Benefit from all Res programs | 0.195 | $285,472 |
| | | Residential Products & Services kW | 785 | | Total Electric System Benefit: | | |
| | | | | | $8,826,016 | | |
| | | | | | | | |
| | | Appliance Retirement Lifetime kWh | | | | | |
| | | Appliance Retirement kW | | | | | |
| | | Homes Lifetime kWh | 6,301,448 | | $21,942,986 | | |
| | | Homes kW | 145 | | | | |
| | | Home Energy Solutions Lifetime kWh | 33,950,874 | | | | |
| | | Home Energy Solutions kW | 1,080 | | | | |
| | | HVAC/Water Heaters Lifetime kWh | 20,897,651 | | | | |
| | | HVAC/Water Heaters kW | 366 | | | | |
| | | HES Income Eligible Lifetime kWh | 47,125,865 | | | | |
| | | HES Income Eligible kW | 560 | | | | |
| | | Residential Behavior Lifetime kWh | 0 | | | | |
| | | Residential Behavior kW | 0 | | | | |
| | | Total Residential Lifetime kWh | 140,638,920 | | | | |
| | | Total Residential kW | 2,937 | | | | |
| | | Present Value of Res Lifetime kWh | $0.0934 | | | | |
| | | Present Value of Res Lifetime kW @ Customer Meter | $2,999.57 | | | | |
| | | Total Res Lifetime kWh @ Present Value Factor | $13,134,507 | | | | |
| | | Total Res kW @ Present Value Factor | $8,808,480 | | | | |
| | | Total Electric System Benefit | $21,942,986 | | | | |
| | | The Net Electric System Benefit from all Res programs | $9,795,426 | | | | |

## United Illuminating Electric PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| All Residential Programs (Sector Level) | | Total Net Electric System Benefit | $9,795,426 | | $9,795,426 | 0.195 | $285,472 |
| Residential New Construction | $ 607,378 | | | Energy savings included in appropriate sector level metric | | | |
| HES | $ 3,644,267 | MMBTU per single family home for Core Service that have air sealing completed (i.e., non-barriered homes). This is based on 2017 actuals adjusted to 2018 CT PSD plus 2.0%. | | Energy savings included in appropriate sector level metric<br>Increase HES savings Per Home | Achieve MMBTU in HES per single-family home savings across all fuels | 0.0300 | $43,919 |
| | | HES - Percentage of unique single-family homes that received core services for HES that get at least one downstream add-on measure (i.e., insulation, appliances, windows, Wi-Fi Thermostats, attic opening rebate, ductless heat-pump mail in component, natural gas boiler temperature reset control, central A/C and air source heat pumps). The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30, 2018. | | % of homes with Add-Ons | (15%) of the homes with add-on measures | 0.03 | $43,919 |
| HES - Income Eligible | $ 4,251,647 | Annual MMBTU for electric, oil and propane measures | | Energy savings included in appropriate sector level metric<br>Annual MMBTU | 27,079<br>MMBTU | 0.03 | $43,919 |

## United Illuminating Electric PMI (2019) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| All C/I Programs (Sector Level) Sector Budget | $ 17,488,154 | Energy Blueprint Lifetime kWh | 142,814,924 | Total Electric System Benefit from all C&I programs. | Electric System Benefit from all C&I programs | 0.21 | $307,431 |
| | | Energy Blueprint kW | 1,447 | | Total Electric System Benefit: | | |
| | | Energy Opportunities Lifetime kWh | 231,539,895 | | $68,825,854 | | |
| | | Energy Opportunities kW | 2,471 | | | | |
| | | B&ES (RetroCx, BOC, RFP,PRIME) Lifetime kWh | 19,834,469 | | | | |
| | | B&ES kW | 382 | | | | |
| | | Small Business Lifetime kWh | 104,146,614 | | | | |
| | | Small Business kW | 1,077 | | | | |
| | | Total C&I Lifetime kWh | 498,335,902 | | | | |
| | | Total C&I kW | 5,378 | | | | |
| | | Present Value of C&I Lifetime kWh | $0.0831 | | | | |
| | | Present Value of C&I Lifetime kW @ Customer Meter | $5,093.30 | | | | |
| | | Total C&I Lifetime kWh @ Present Value Factor | $41,435,316 | | | | |
| | | Total C&I kW @ Present Value Factor | $27,390,538 | | | | |
| | | Total Electric System Benefit | $68,825,854 | | | | |
| | | The Net Electric System Benefit from all C&I programs: | $51,337,700 | | | | |
| All C/I Programs (Sector Level) Sector Budget | | Total Net Electric System Benefit from all C&I programs. | $51,337,700 | | Total Program Benefit from all C&I programs | 0.21 | $307,431 |

## United Illuminating Electric PMI (2019) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| Small Business Energy Advantage | $ 4,092,233 | Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Based on 2018 Actual results plus 5%. | | | **25%** of signed projects | 0.03 | $43,919 |
| Energy Conscious Blueprint | $ 4,184,555 | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects and at least one towards Net Zero Energy project which shall include renewable energy technologies such as, but not limited to: solar PV, solar Thermal, fuel cells, CHP, and wind. | | | **50%** of signed projects | 0.02 | $29,279 |
| Energy Opportunities | $ 7,987,195 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use measure with SEM counting as an end use. Based on 2018 Actual results plus 5% | | | **30%** of all signed projects. | 0.03 | $43,919 |
| Strategic Energy Management | | The Companies have committee to testing a SEM cohort in 2019. The SEM cohort or individual companies implementing SEM shall comply with best practice as defined by the CEE Minimum elements or DOE 50001 Ready. The Companies will track project savings for customers in efforts to save at least estimated savings of 25 MWh (individual) and 10 MWh (cohort). SEM signed Customer agreements may include, but not be limited to, BSC Agreements, Retro-Commissioning engineering study agreements, multi-year CSPs with Customers (which will outline a strategic plan for reducing consumption by a specific percentage each year along with tools and resources to be utilized such as metering, trending & reporting, engineering models), ENERGY STAR Benchmarking, Focused Study agreements, PRIME Kaizen events, etc., packaged SEM (with and w/o cohorts) and Customer Engagement tools and resources which already exist in the marketplace. Based on 2018 Actual Results plus 5% | | | **20** Customers | 0.02 | $29,279 |
| All C&I Programs | | Electric Savings | | Electric Savings include in appropriate sector level metric | | | |
| **Total Incentive $ Residential and C&I** | | | | | | **1.0000** | **$1,463,958** |

## United Illuminating Electric PMI (2020)

**THE UNITED ILLUMINATING COMPANY**

**2020 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2020 Incentive Matrix with Performance Indicators.

The weights applied to each of the individual and sector level metrics were developed in collaboration with Energy Efficiency Board Consultants.

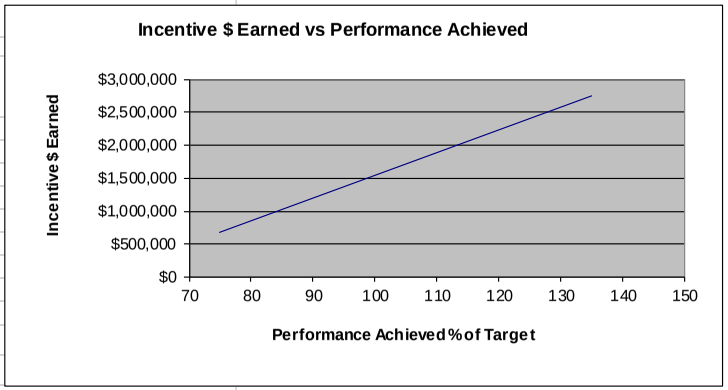
The Utility Performance Incentive is $1,547,843

This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including EEB costs, Audit Costs or Management Incentive).

Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $687,930 |
| 85 | 3.0% | $1,031,895 |
| 95 | 4.0% | $1,375,861 |
| **100** | **4.5%** | **$1,547,843** |
| 105 | 5.0% | $1,719,826 |
| 115 | 6.0% | $2,063,791 |
| 125 | 7.0% | $2,407,756 |
| 135 | 8.0% | $2,751,721 |
| | | |
| | | |
| Total Original Budget* | $34,396,513 | |




*Does not include Incentive, EEB costs, and Audit.

## United Illuminating Electric PMI (2020) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| All Residential Programs (Sector Level) Sector Budget | $ 12,231,233 | Residential Products & Services Lifetime kWh | 26,344,165 | Total Electric System Benefit from all Res programs | Electric System Benefit from all Res programs Total Electric System Benefit: $24,036,979 | 0.195 | $301,829 |
| | | Residential Products & Services kW | 704 | | | | |
| | | Homes Lifetime kWh | 5,663,981 | | | | |
| | | Homes kW | 139 | | | | |
| | | Home Energy Solutions Lifetime kWh | 29,360,530 | | | | |
| | | Home Energy Solutions kW | 1,130 | | | | |
| | | HVAC/Water Heaters Lifetime kWh | 21,404,438 | | | | |
| | | HVAC/Water Heaters kW | 596 | | | | |
| | | HES-Income Eligible Lifetime kWh | 41,112,019 | | | | |
| | | HES Income Eligible kW | 516 | | | | |
| | | Residential Behavior Lifetime kWh | 11,388,450 | | | | |
| | | Residential Behavior kW | 0 | | | | |
| | | Total Residential Lifetime kWh | 135,273,582 | | | | |
| | | Total Residential kW | 3,085 | | | | |
| | | Present Value of Res Lifetime kWh | $0.0981 | | | | |
| | | Present Value of Res Lifetime kW @ Customer Meter | $3,490.34 | | | | |
| | | Total Res Lifetime kWh @ Present Value Factor | $13,270,933 | | | | |
| | | Total Res kW @ Present Value Factor | $10,766,045 | | | | |
| | | Total Electric System Benefit | $24,036,979 | | | | |
| | | The Net Electric System Benefit from all Res programs | $11,805,745 | | | | |
| All Residential Programs (Sector Level) | | Total Net Electric System Benefit | $11,805,745 | | $11,805,745 | 0.195 | $301,829 |

## United Illuminating Electric PMI (2020) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| Residential New Construction | $ 625,335 | Percentage of single-family and single-family attached homes/units in the RNC program that achieve a HERS rating of 50 or less, This is based on 2019 Actual plus 4% points, | | Energy savings included in appropriate sector level metric | | 0.015 | $23,218 |
| HES | $ 3,752,014 | MMBTU per single-family home (not including lighting) for Core Service that have air sealing completed (i.e., non-barriered homes). This is based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | Energy savings included in appropriate sector level metric | Achieve MMBTU in HES per single-family home savings across all fuels | 0.0300 | $46,435 |
| | | | | Increase HES savings Per Home | | | |
| | | HES - Percentage of unique single-family homes that received core services for HES that get at least one downstream add-on measure (i.e., insulation, water heaters, HVAC, appliances, windows, Wi-Fi thermostats, attic opening rebate, ductless heat pump mail-in component, natural gas boiler reset control, central A/C, and air-source heat pumps). This is based on 2019 actuals plus 2%. The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30, 2020. | | % of homes with Add-Ons | (15%) of the homes with add-on measures | 0.015 | $23,218 |
| HES-Income Eligible | $ 4,377,349 | | | Energy savings included in appropriate sector level metric | | 0.03 | $46,435 |
| | | Annual MMBTU for electric, oil and propane measures | | Annual MMBTU | 27,079 | | |
| | | | | | MMBTU | | |

## United Illuminating Electric PMI (2020) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| All C/I Programs (Sector Level) Sector Budget | $ 17,290,171 | Energy Blueprint Lifetime kWh | 147,628,569 | Total Electric System Benefit from all C&I programs. | Electric System Benefit from all C&I programs Total Electric System Benefit: $67,975,806 | 0.21 | $325,047 |
| | | Energy Blueprint kW | 1,496 | | | | |
| | | Energy Opportunities Lifetime kWh | 225,495,262 | | | | |
| | | Energy Opportunities kW | 2,471 | | | | |
| | | B&ES (RetroCx, BOC, RFP,PRIME) Lifetime kWh | 19,651,769 | | | | |
| | | B&ES kW | 382 | | | | |
| | | Small Business Lifetime kWh | 93,990,363 | | | | |
| | | Small Business kW | 1,077 | | | | |
| | | Total C&I Lifetime kWh | 486,765,963 | | | | |
| | | Total C&I kW | 5,427 | | | | |
| | | Present Value of C&I Lifetime kWh | $0.0829 | | | | |
| | | Present Value of C&I Lifetime kW @ Customer Meter | $5,087.40 | | | | |
| | | Total C&I Lifetime kWh @ Present Value Factor | $40,368,862 | | | | |
| | | Total C&I kW @ Present Value Factor | $27,606,944 | | | | |
| | | Total Electric System Benefit | $67,975,806 | | | | |
| | | The Net Electric System Benefit from all C&I programs: | $50,685,635 | | | | |
| All C/I Programs (Sector Level) Sector Budget | | Total Net Electric System Benefit from all C&I programs. | $50,685,635 | | Total Program Benefit from all C&I programs. | 0.21 | $325,047 |

## United Illuminating Electric PMI (2020) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| Small Business | $ 4,090,569 | Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management, and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Based on 2019 Actual results plus 5%. | | | **25%** of signed projects | 0.03 | $46,435 |
| Energy Conscious Blueprint | $ 4,396,007 | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects and at least three towards Net Zero Energy project which shall include renewable energy technologies such as, but not limited to, Solar PV, Solar Thermal, Fuel Cells, CHP, and Wind. | | | **50%** of signed projects | 0.02 | $30,957 |
| Energy Opportunities | $ 7,955,445 | Develop and implement comprehensive offerings specific to manufacturing plus a minimum of 3 targeted segments (e.g. Retail , Education and Government). Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering / all signed projects (excluding rebates). | | | **30%** of all signed projects. | 0.03 | $46,435 |
| Strategic Energy Management | | Performance management incentives may be earned for each new customer to achieve SEM savings in 2020. Customers who implement SEM individually and save at least 25 MWh are worth a $800 PMI, and each customer who implements SEM as part of a cohort and saves at least 10 MWh is worth a $1000 PMI. | | | **20** Customers | 0.02 | $30,957 |
| All C&I Programs | | Electric Savings | | Electric Savings include in appropriate sector level metric | | | |
| **Total Incentive $ Residential and C&I** | | | | | | **1.0000** | **$1,547,843** |

## United Illuminating Electric PMI (2021)

**THE UNITED ILLUMINATING COMPANY**

**2021 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2021 Incentive Matrix with Performance Indicators.

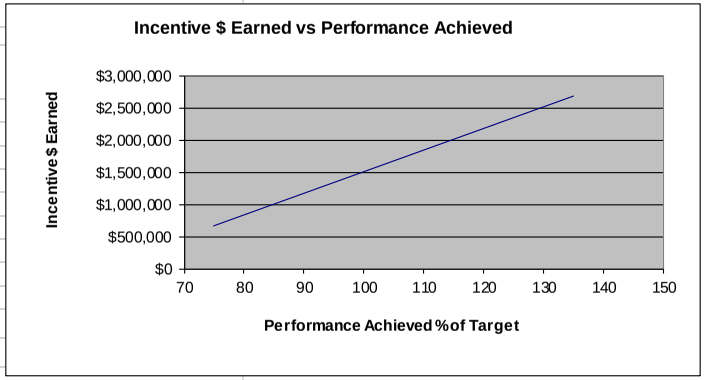
The weights applied to each of the individual and sector level metrics were developed in collaboration with Energy Efficiency Board Consultants.

The Utility Performance Incentive is $1,518,460

This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including EEB costs, Audit Costs or Management Incentive).
Goals will be prorated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $674,871 |
| 85 | 3.0% | $1,012,306 |
| 95 | 4.0% | $1,349,742 |
| **100** | **4.5%** | **$1,518,460** |
| 105 | 5.0% | $1,687,177 |
| 115 | 6.0% | $2,024,613 |
| 125 | 7.0% | $2,362,048 |
| 135 | 8.0% | $2,699,484 |
| Total Original Budget* | $33,743,549 | |




*Does not include Incentive, EEB costs, and Audit.

## United Illuminating Electric PMI (2021) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| All Residential Programs (Sector Level) Sector Budget | $ 11,912,018 | Residential Products & Services Lifetime kWh | 17,126,670 | Total Electric System Benefit from all Res programs | Electric System Benefit from all Res programs Total Electric System Benefit: $18,885,350 | 0.195 | $296,100 |
| | | Residential Products & Services kW | 390 | | | | |
| | | Homes Lifetime kWh | 5,008,789 | | | | |
| | | Homes kW | 126 | | | | |
| | | Home Energy Solutions Lifetime kWh | 21,022,724 | | | | |
| | | Home Energy Solutions kW | 871 | | | | |
| | | HVAC/Water Heaters Lifetime kWh | 20,264,372 | | | | |
| | | HVAC/Water Heaters kW | 439 | | | | |
| | | HES Income Eligible Lifetime kWh | 35,190,347 | | | | |
| | | HES Income Eligible kW | 488 | | | | |
| | | Residential Behavior Lifetime kWh | 11,388,450 | | | | |
| | | Residential Behavior kW | 0 | | | | |
| | | Total Residential Lifetime kWh | 110,001,353 | | | | |
| | | Total Residential kW | 2,314 | | | | |
| | | Present Value of Res Lifetime kWh | $0.0927 | | | | |
| | | Present Value of Res Lifetime kW @ Customer Meter | $3,753.16 | | | | |
| | | Total Res Lifetime kWh @ Present Value Factor | $10,202,237 | | | | |
| | | Total Res kW @ Present Value Factor | $8,683,113 | | | | |
| | | Total Electric System Benefit | $18,885,350 | | | | |
| | | The Net Electric System Benefit from all Res programs | $6,973,331 | | | | |
| All Residential Programs (Sector Level) | | Total Net Electric System Benefit | $6,973,331 | | $6,973,331 | 0.195 | $296,100 |

## United Illuminating Electric PMI (2021) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | |
| Residential New Construction | $ 595,600 | Percentage of single-family and single-family attached homes/units in the RNC program that achieve a HERS rating of 50 or less. This is based on 2020 Actual plus 4% points. | | Energy savings included in appropriate sector level metric | | 0.015 | $22,777 |
| HES | $ 3,573,606 | MMBTU per single family home (not including lighting) for Core Service that have air sealing completed (i.e., non-barriered homes) – based on 2020 actuals adjusted to 2021 CT PSD plus 2.0%. | | Energy savings included in appropriate sector level metric<br>Increase HES savings Per Home | Achieve MMBTU in HES per single-family home savings across all fuels | 0.0300 | $45,554 |
| | | HES - Percentage of Unique Single Family Homes that received core services for HES that get at least one downstream add-on measure (i.e., Insulation, Water Heaters, HVAC, Appliances, Windows, Wi-Fi thermostats, Attic Opening Rebate, Ductless Heat Pump mail-in component, Natural Gas Boiler reset control, Central A/C, and Air Source Heat Pumps) - based on 2020 actuals plus 2%. The CT Energy Efficiency Dashboard will be used for comparison for the period of January 1 to September 30 - 2020. | | % of homes with Add-Ons | (15%) of the homes with add-on measures | 0.015 | $22,777 |
| HES - Income Eligible | $ 4,169,206 | Annual MMBTU for electric, oil and propane measures | | Energy savings included in appropriate sector level metric<br>Annual MMBTU | 27,079<br>MMBTU | 0.03 | $45,554 |

## United Illuminating Electric PMI (2021) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| All C/I Programs (Sector Level) Sector Budget | $ 16,396,922 | Energy Blueprint Lifetime kWh | 132,251,569 | Total Electric System Benefit from all C&I programs. | Electric System Benefit from all C&I programs | 0.21 | $318,877 |
| | | Energy Blueprint kW | 1,340 | | Total Electric System Benefit: | | |
| | | Energy Opportunities Lifetime kWh | 202,365,112 | | $60,412,644 | | |
| | | Energy Opportunities kW | 2,060 | | | | |
| | | B&ES (RetroCx, BOC, RFP,PRIME) Lifetime kWh | 17,469,819 | | | | |
| | | B&ES kW | 336 | | | | |
| | | Small Business Lifetime kWh | 89,122,404 | | | | |
| | | Small Business kW | 922 | | | | |
| | | Total C&I Lifetime kWh | 441,208,904 | | | | |
| | | Total C&I kW | 4,659 | | | | |
| | | Present Value of C&I Lifetime kWh | $0.0803 | | | | |
| | | Present Value of C&I Lifetime kW @ Customer Meter | $5,364.72 | | | | |
| | | Total C&I Lifetime kWh @ Present Value Factor | $35,418,200 | | | | |
| | | Total C&I kW @ Present Value Factor | $24,994,443 | | | | |
| | | Total Electric System Benefit | $60,412,644 | | | | |
| | | The Net Electric System Benefit from all C&I programs: | $44,015,721 | | | | |
| All C/I Programs (Sector Level) Sector Budget | | Total Net Electric System Benefit from all C&I programs. | $44,015,721 | | Total Program Benefit from all C&I programs. | 0.21 | $318,877 |

## United Illuminating Electric PMI (2021) — continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C/I)** | | | | | | | |
| Small Business | $ 3,799,435 | Develop and implement comprehensive. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Based on 2020 Actual results plus 5%. | | | **25%** of signed projects | 0.03 | $45,554 |
| Energy Conscious Blueprint | $ 4,082,985 | Number of new construction /major renovation projects that are more efficient than the State Energy Code and are: 30% > ASHRAE 90.1-2013, or utilize Whole Building Performance, or Near Net Zero Energy Projects and at least five towards Net Zero Energy project which shall include renewable energy technologies such as, but not limited to, Solar PV, Solar Thermal, Fuel Cells, CHP, and Wind. | | | **50%** of signed projects | 0.02 | $30,369 |
| Energy Opportunities | $ 7,366,718 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use measure with SEM counting as an end use. Based on 2020 Actual results plus 5%. | | | **30%** of all signed projects. | 0.03 | $45,554 |
| Strategic Energy Management | | Performance management incentives may be earned for each new customer to achieve SEM savings in 2020. Customers who implement SEM individually and save at least 25 MWh are worth a $800 PMI, and each customer who implements SEM as part of a cohort and saves at least 10 MWh is worth a $1000 PMI. | | | **20** Customers | 0.02 | $30,369 |
| All C&I Programs | | Electric Savings | | Electric Savings include in appropriate sector level metric | | | |
| **Total Incentive $ Residential and C&I** | | | | | | **1.0000** | **$1,518,460** |

# COMBINED NATURAL GAS BUDGET AND SAVINGS TABLES

## Combined Natural Gas Table A1 (2019–2021)

**Table A1**
**EVERSOURCE CT GAS, CNG & SCG**
**2018-2021 Natural Gas Budget**

| Natural Gas EE Budget | 2019 | | | | 2020 | | | | 2021 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 Eversource CT Gas Proposed Budget 03/01/19 | 2019 CNG Proposed Budget 03/01/19 | 2019 SCG Proposed Budget 03/01/19 | 2019 Eversource CT Gas/CNG/SCG Combined Total 03/01/19 | 2020 Eversource CT Gas Proposed Budget 03/01/19 | 2020 CNG Proposed Budget 03/01/19 | 2020 SCG Proposed Budget 03/01/19 | 2020 Eversource CT Gas/CNG/SCG Combined Total 03/01/19 | 2021 Eversource CT Gas Proposed Budget 03/01/19 | 2021 CNG Proposed Budget 03/01/19 | 2021 SCG Proposed Budget 03/01/19 | 2021 Eversource CT Gas/CNG/SCG Combined Total 03/01/19 |
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 821,137 | $ 719,950 | $ 1,099,837 | $ 2,640,923 | $ 939,541 | $ 695,034 | $ 958,519 | $ 2,593,094 | $ 953,286 | $ 703,626 | $ 964,726 | $ 2,621,638 |
| Home Energy Solutions - Core Services | $ 1,996,353 | $ 3,236,505 | $ 1,944,962 | $ 7,177,820 | $ 2,312,732 | $ 3,092,712 | $ 1,742,346 | $ 7,147,791 | $ 2,363,188 | $ 3,126,775 | $ 1,754,838 | $ 7,244,802 |
| Home Energy Solutions - HVAC, Water Heaters | $ 2,364,019 | $ 1,824,189 | $ 3,571,838 | $ 7,760,045 | $ 2,659,505 | $ 1,804,983 | $ 3,138,217 | $ 7,602,704 | $ 2,678,330 | $ 1,822,968 | $ 3,150,629 | $ 7,651,927 |
| HES-Income Eligible | $ 3,725,172 | $ 4,206,424 | $ 3,321,827 | $ 11,253,423 | $ 4,346,973 | $ 4,096,485 | $ 3,043,129 | $ 11,486,587 | $ 4,387,998 | $ 4,117,341 | $ 3,109,482 | $ 11,614,820 |
| Residential Behavior | $ 410,000 | $ 156,228 | $ 179,676 | $ 745,904 | $ 364,920 | $ 153,445 | $ 159,643 | $ 678,008 | $ 370,258 | $ 155,328 | $ 159,689 | $ 685,275 |
| **Subtotal: Residential** | **$ 9,316,680** | **$ 10,143,296** | **$ 10,118,139** | **$ 29,578,115** | **$ 10,623,670** | **$ 9,842,659** | **$ 9,041,855** | **$ 29,508,184** | **$ 10,753,060** | **$ 9,926,037** | **$ 9,139,364** | **$ 29,818,462** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 2,829,007 | $ 2,151,328 | $ 2,011,328 | $ 6,991,663 | $ 4,673,397 | $ 2,059,924 | $ 1,722,875 | $ 8,456,196 | $ 4,676,277 | $ 2,095,137 | $ 1,743,640 | $ 8,515,055 |
| **Total - Lost Opportunity** | **$ 2,829,007** | **$ 2,151,328** | **$ 2,011,328** | **$ 6,991,663** | **$ 4,673,397** | **$ 2,059,924** | **$ 1,722,875** | **$ 8,456,196** | **$ 4,676,277** | **$ 2,095,137** | **$ 1,743,640** | **$ 8,515,055** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 5,096,626 | $ 1,262,498 | $ 1,327,765 | $ 7,686,889 | $ 4,356,861 | $ 1,176,759 | $ 1,131,751 | $ 6,665,371 | $ 4,359,404 | $ 1,192,975 | $ 1,146,268 | $ 6,698,647 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 629,672 | $ 733,821 | $ 574,069 | $ 1,937,561 | $ 715,324 | $ 682,351 | $ 507,317 | $ 1,904,991 | $ 725,684 | $ 690,456 | $ 512,992 | $ 1,929,131 |
| **Total - C&I Large Retrofit** | **$ 5,726,298** | **$ 1,996,318** | **$ 1,901,834** | **$ 9,624,450** | **$ 5,072,185** | **$ 1,859,110** | **$ 1,639,068** | **$ 8,570,362** | **$ 5,085,088** | **$ 1,883,431** | **$ 1,659,259** | **$ 8,627,778** |
| Small Business Energy Advantage | $ 749,000 | $ 334,736 | $ 286,415 | $ 1,370,152 | $ 850,000 | $ 318,826 | $ 248,811 | $ 1,417,637 | $ 950,000 | $ 322,674 | $ 252,114 | $ 1,524,788 |
| **Subtotal: C&I** | **$ 9,304,305** | **$ 4,482,383** | **$ 4,199,577** | **$ 17,986,264** | **$ 10,595,582** | **$ 4,237,860** | **$ 3,610,753** | **$ 18,444,195** | **$ 10,711,364** | **$ 4,301,242** | **$ 3,655,014** | **$ 18,667,620** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | | | | |
| Educate the Public | $ 63,267 | $ 65,796 | $ 65,796 | $ 194,859 | $ 63,168 | $ 65,796 | $ 65,796 | $ 194,760 | $ 66,183 | $ 65,796 | $ 65,796 | $ 197,775 |
| Customer Engagement | $ 211,479 | $ - | $ - | $ 211,479 | $ 270,612 | $ 150,000 | $ 150,000 | $ 570,612 | $ 282,000 | $ 150,000 | $ 150,000 | $ 582,000 |
| Educate the Students | $ 22,202 | $ 22,859 | $ 22,859 | $ 67,920 | $ 43,340 | $ 45,164 | $ 45,164 | $ 133,668 | $ 45,164 | $ 45,164 | $ 45,164 | $ 135,492 |
| Educate the Workforce | $ 13,146 | $ 13,671 | $ 13,671 | $ 40,488 | $ 33,620 | $ 35,034 | $ 35,034 | $ 103,687 | $ 35,034 | $ 35,034 | $ 35,034 | $ 105,101 |
| **Subtotal: Education & Engagement** | **$ 310,093** | **$ 102,326** | **$ 102,326** | **$ 514,745** | **$ 410,739** | **$ 295,994** | **$ 295,994** | **$ 1,002,727** | **$ 428,381** | **$ 295,994** | **$ 295,994** | **$ 1,020,369** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ 80,075 | $ 86,292 | $ 86,292 | $ 252,659 | $ 80,075 | $ 86,292 | $ 86,292 | $ 252,659 | $ 84,523 | $ 86,292 | $ 86,292 | $ 257,107 |
| C&I Financing Support | $ 86,332 | $ 20,000 | $ 75,000 | $ 181,332 | $ 78,256 | $ 20,000 | $ 75,000 | $ 173,256 | $ 93,905 | $ 20,000 | $ 75,000 | $ 188,905 |
| Research, Development and Demonstration | $ 50,000 | $ 50,000 | $ 50,000 | $ 150,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 150,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 150,000 |
| **Subtotal: Programs/Requirements** | **$ 216,407** | **$ 156,292** | **$ 211,292** | **$ 583,991** | **$ 208,331** | **$ 156,292** | **$ 211,292** | **$ 575,915** | **$ 228,428** | **$ 156,292** | **$ 211,292** | **$ 596,012** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | | | | |
| Administration | $ 114,208 | $ 150,463 | $ 150,465 | $ 415,137 | $ 114,209 | $ 154,854 | $ 154,855 | $ 423,918 | $ 120,553 | $ 159,218 | $ 159,219 | $ 438,990 |
| Marketing Plan | $ 14,630 | $ 14,630 | $ 14,630 | $ 43,890 | $ 53,000 | $ 31,100 | $ 31,100 | $ 115,200 | $ 70,480 | $ 40,100 | $ 40,100 | $ 150,680 |
| Planning | $ 74,992 | $ 96,583 | $ 96,583 | $ 268,158 | $ 74,993 | $ 99,480 | $ 99,480 | $ 273,954 | $ 79,158 | $ 102,465 | $ 102,465 | $ 284,088 |
| Evaluation Measurement and Verification | $ 217,523 | $ 217,523 | $ 217,523 | $ 652,569 | $ 200,000 | $ 200,000 | $ 200,000 | $ 600,000 | $ 200,000 | $ 200,000 | $ 200,000 | $ 600,000 |
| Evaluation Administrator | $ 18,667 | $ 18,667 | $ 18,667 | $ 56,001 | $ 20,000 | $ 20,000 | $ 20,000 | $ 60,000 | $ 20,000 | $ 20,000 | $ 20,000 | $ 60,000 |
| Information Technology | $ 133,320 | $ 137,531 | $ 137,532 | $ 408,383 | $ 133,321 | $ 139,037 | $ 139,038 | $ 411,396 | $ 140,726 | $ 140,589 | $ 140,590 | $ 421,904 |
| Energy Efficiency Board Consultants | $ 31,893 | $ 31,893 | $ 31,893 | $ 95,679 | $ 43,333 | $ 43,333 | $ 43,333 | $ 129,999 | $ 43,333 | $ 43,333 | $ 43,333 | $ 129,999 |
| Audits - Financial and Operational | $ 10,000 | $ 10,000 | $ 10,000 | $ 30,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 30,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 30,000 |
| Performance Management Incentive (PMI) | $ 886,597 | $ 697,546 | $ 686,163 | $ 2,270,306 | $ 1,008,623 | $ 682,077 | $ 620,297 | $ 2,310,997 | $ 1,022,947 | $ 689,487 | $ 627,482 | $ 2,339,916 |
| **Subtotal: Other - Administrative & Planning** | **$ 1,501,831** | **$ 1,374,837** | **$ 1,363,456** | **$ 4,240,123** | **$ 1,657,479** | **$ 1,379,882** | **$ 1,318,103** | **$ 4,355,464** | **$ 1,707,198** | **$ 1,405,192** | **$ 1,343,188** | **$ 4,455,578** |
| **TOTAL** | **$ 20,649,315** | **$ 16,259,133** | **$ 15,994,790** | **$ 52,903,238** | **$ 23,495,801** | **$ 15,912,687** | **$ 14,477,997** | **$ 53,886,485** | **$ 23,828,432** | **$ 16,084,757** | **$ 14,644,852** | **$ 54,558,041** |

## Combined Natural Gas Table A2 (2019–2021)

**Table A2**
**EVERSOURCE CT GAS, CNG & SCG**
**2018 - 2021 Natural Gas Revenues**

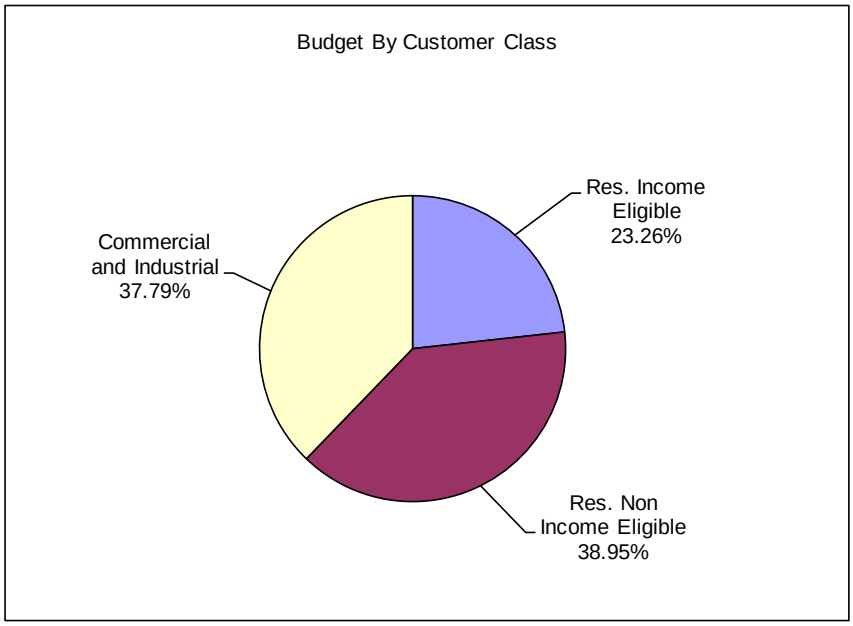
| Natural Gas EE Revenues | 2018 Eversource CT Gas Revenues 12/31/18 | 2018 CNG Revenues 12/31/18 | 2018 SCG Revenues 12/31/2018 | 2018 Combined Eversource CT Gas/CNG/SCG Total 12/31/18 | 2019 Eversource CT Gas Revenues 03/01/19 | 2019 CNG Revenues 03/01/2019 | 2019 SCG Revenues 3/1/2019 | 2019 Combined Eversource CT Gas/CNG/SCG Total |
|---|---|---|---|---|---|---|---|---|
| Conservation Adjustment Mechanism (CAM) | $ 21,873,182 | $ 15,696,082 | $ 14,315,762 | $ 51,885,026 | $ 22,322,326 | $ 16,037,783 | $ 14,503,875 | $ 52,863,984 |
| Prior Period Over/(Under) Collections | $ (4,261,424) | $ (1,792,508) | $ (1,128,316) | $ (7,182,248) | $ 2,164,454 | $ (55,968) | $ 324,477 | $ 2,432,963 |
| Prior Period Under/(Over) Budget | $ (283,341) | $ 1,669,751 | $ (424,149) | $ 962,261 | $ (3,837,465) | $ 451,887 | $ 1,287,654 | $ (2,097,924) |
| Estimated Interest Due to Company/Other Revenues | $ 2,897,334 | $ 179,848 | $ (27,359) | $ 3,049,823 | | $ (174,569) | $ (121,216) | $ (295,785) |
| **Total Revenues** | **$ 20,225,752** | **$ 15,753,173** | **$ 12,735,938** | **$ 48,714,863** | **$ 20,649,315** | **$ 16,259,133** | **$ 15,994,790** | **$ 52,903,238** |

| Natural Gas EE Revenues | 2020 Eversource CT Gas Revenues 03/01/19 | 2020 CNG Revenues 03/01/2019 | 2020 SCG Revenues 3/1/2019 | 2020 Combined CT Gas/CNG/SCG Total | 2021 Eversource CT Gas Revenues 03/01/19 | 2021 CNG Revenues 03/01/2019 | 2021 SCG Revenues 3/1/2019 | 2021 Combined Eversource CT Gas/CNG/SCG Total |
|---|---|---|---|---|---|---|---|---|
| Conservation Adjustment Mechanism (CAM) | $ 23,495,801 | $ 15,912,687 | $ 14,477,997 | $ 53,886,485 | $ 23,828,432 | $ 16,084,757 | $ 14,644,852 | $ 54,558,041 |
| **Total Revenues** | **$ 23,495,801** | **$ 15,912,687** | **$ 14,477,997** | **$ 53,886,485** | **$ 23,828,432** | **$ 16,084,757** | **$ 14,644,852** | **$ 54,558,041** |

All Figures are net of GET. Eversource decoupled as of November 15, 2018. SCG decoupled as of January 1st, 2018. CNG has been decoupled.

## Combined Natural Gas Table A1 Pie (2019)

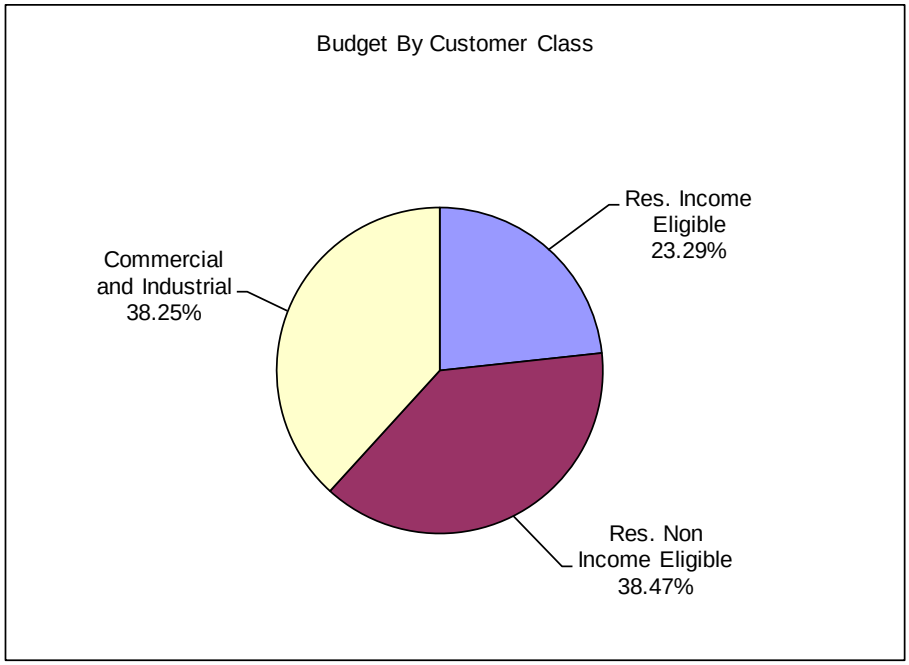
**Statewide 2019 Update Budget Analysis**
**Table A1 Pie Chart**




| Customer Class | Budget* ($,000) | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $11,293,460 | 21.35% | 23.26% |
| Res. Non-Income Eligible | $18,913,618 | 35.75% | 38.95% |
| **Residential Subtotal** | $30,207,078 | 57.10% | 62.21% |
| Commercial and Industrial | $18,349,927 | 34.69% | 37.79% |
| **C&I Subtotal** | $18,349,927 | 34.69% | 37.79% |
| **Residential and C&I Subtotal** | $48,557,004 | 91.78% | 100.00% |
| ***Other Expenditures*** | | | |
| Other Expenditures | $4,346,234 | 8.22% | |
| **Other Expenditures Subtotal** | $4,346,234 | 8.22% | |
| **TOTAL** | **$52,903,238** | **100.00%** | |
| **ES CT Gas** | **$20,649,315** | **39.03%** | |
| **CNG** | **$16,259,133** | **30.73%** | |
| **SCG** | **$15,994,790** | **30.23%** | |

## Combined Natural Gas Table A1 Pie (2020)

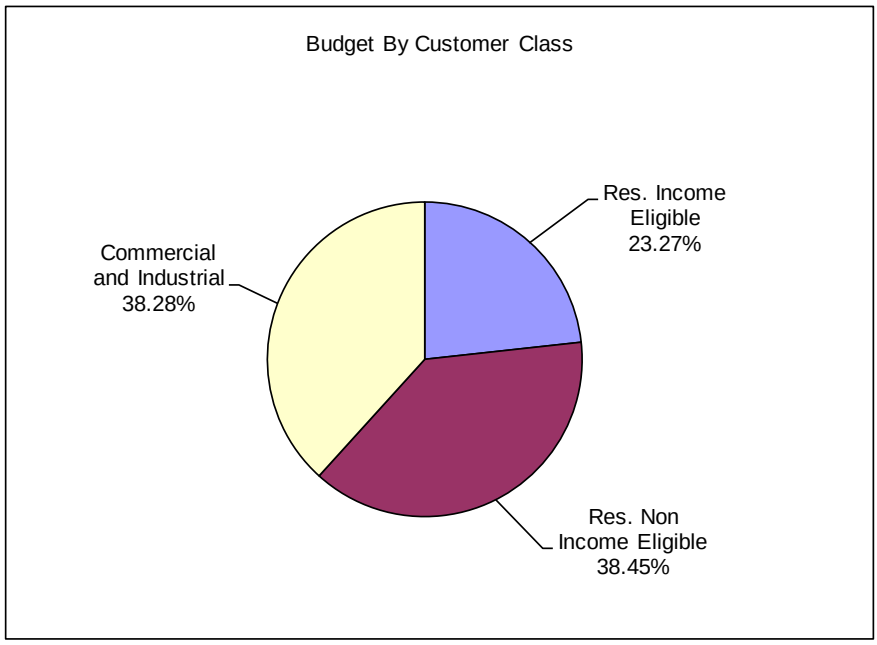
**Statewide 2020 Update Budget Analysis**
**Table A1 Pie Chart**




| Customer Class | Budget* ($,000) | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $11,526,624 | 21.39% | 23.29% |
| Res. Non-Income Eligible | $19,039,026 | 35.33% | 38.47% |
| **Residential Subtotal** | $30,565,650 | 56.72% | 61.75% |
| | | | |
| Commercial and Industrial | $18,930,571 | 35.13% | 38.25% |
| | | | |
| **C&I Subtotal** | $18,930,571 | 35.13% | 38.25% |
| | | | |
| **Residential and C&I Subtotal** | $49,496,221 | 91.85% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $4,390,264 | 8.15% | |
| **Other Expenditures Subtotal** | $4,390,264 | 8.15% | |
| | | | |
| **TOTAL** | **$53,886,485** | **100.00%** | |
| **ES CT Gas** | $23,495,801 | 43.60% | |
| **CNG** | $15,912,687 | 29.53% | |
| **SCG** | $14,477,997 | 26.87% | |

## Combined Natural Gas Table A1 Pie (2021)

**Statewide 2021 Update Budget Analysis**
**Table A1 Pie Chart**




| Customer Class | Budget* ($,000) | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $11,657,082 | 21.37% | 23.27% |
| Res. Non-Income Eligible | $19,264,463 | 35.31% | 38.45% |
| **Residential Subtotal** | $30,921,545 | 56.68% | 61.72% |
| Commercial and Industrial | $19,181,598 | 35.16% | 38.28% |
| **C&I Subtotal** | $19,181,598 | 35.16% | 38.28% |
| **Residential and C&I Subtotal** | $50,103,143 | 91.83% | 100.00% |
| ***Other Expenditures*** | | | |
| Other Expenditures | $4,454,898 | 8.17% | |
| **Other Expenditures Subtotal** | $4,454,898 | 8.17% | |
| **TOTAL** | **$54,558,041** | **100.00%** | |
| **ES CT Gas** | **$23,828,432** | **43.68%** | |
| **CNG** | **$16,084,757** | **29.48%** | |
| **SCG** | **$14,644,852** | **26.84%** | |

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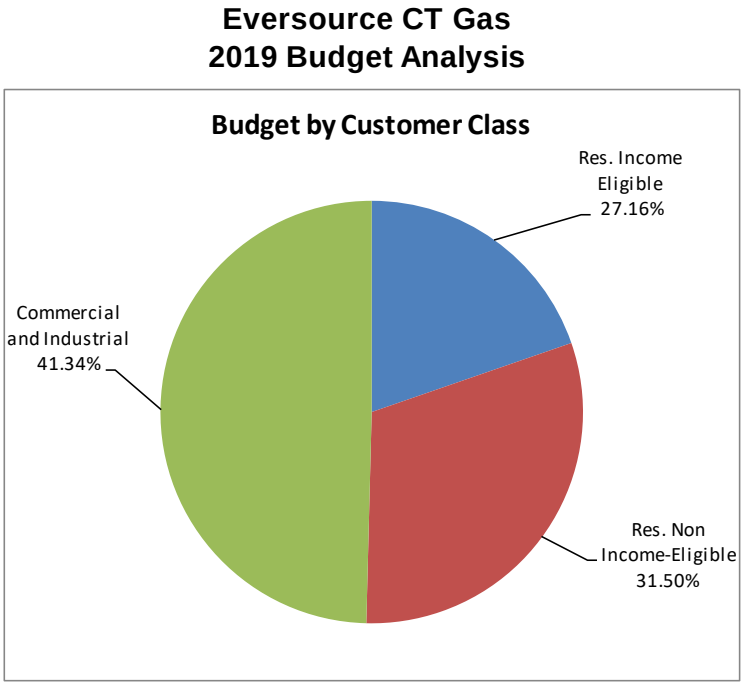
# EVERSOURCE (NATURAL GAS) BUDGET AND SAVINGS TABLES

## Table A – Eversource Natural Gas (2018-2021)

**Table A**
**Eversource CT Gas Service Company**
**2018-2021 Natural Gas Conservation Budget**

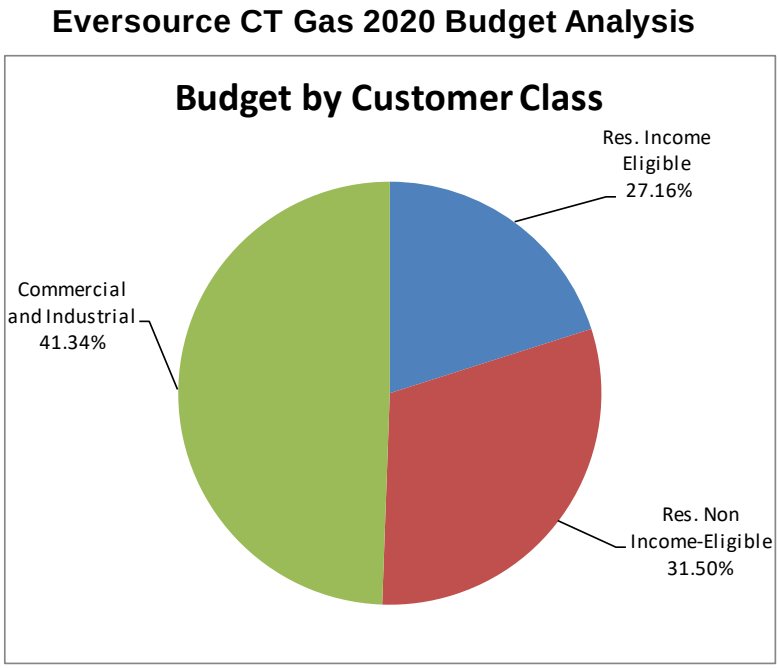
| Eversource CT Gas EE Budget | 2018 Eversource CT Gas Actual Results 12/31/2018 | 2019 Eversource CT Gas Proposed Budget 11/1/2018 | 2019 Eversource CT Gas Proposed Budget 3/1/2019 | 2020 Eversource CT Gas Proposed Budget 11/1/2018 | 2021 Eversource CT Gas Proposed Budget 11/1/2018 |
|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | |
| New Construction, Additions & Major Renovations | $ 918,565 | $ 928,820 | $ 821,137 | $ 939,541 | $ 953,286 |
| Home Energy Solutions - Core Services | $ 1,843,187 | $ 2,258,153 | $ 1,996,353 | $ 2,312,732 | $ 2,363,188 |
| Home Energy Solutions - HVAC, Water Heaters | $ 2,938,795 | $ 2,674,034 | $ 2,364,019 | $ 2,659,505 | $ 2,678,330 |
| HES-Income Eligible | $ 4,400,007 | $ 4,213,687 | $ 3,725,172 | $ 4,346,973 | $ 4,387,998 |
| Residential Behavior | $ 167,458 | $ 363,362 | $ 410,000 | $ 364,920 | $ 370,258 |
| **Subtotal: Residential** | **$ 10,268,012** | **$ 10,438,055** | **$ 9,316,680** | **$ 10,623,670** | **$ 10,753,060** |
| **COMMERCIAL & INDUSTRIAL** | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | |
| Energy Conscious Blueprint | $ 1,831,447 | $ 3,200,000 | $ 2,829,007 | $ 4,673,397 | $ 4,676,277 |
| **Total - Lost Opportunity** | **$ 1,831,447** | **$ 3,200,000** | **$ 2,829,007** | **$ 4,673,397** | **$ 4,676,277** |
| **C&I LARGE RETROFIT** | | | | | |
| Energy Opportunities | $ 4,097,336 | $ 5,764,991 | $ 5,096,626 | $ 4,356,861 | $ 4,359,404 |
| Business & Energy Sustainability (O&M, RetroCx, BSC) | $ 569,494 | $ 712,246 | $ 629,672 | $ 715,324 | $ 725,684 |
| **Total - C&I Large Retrofit** | **$ 4,666,830** | **$ 6,477,236** | **$ 5,726,298** | **$ 5,072,185** | **$ 5,085,088** |
| Small Business | $ 247,416 | $ 749,000 | $ 749,000 | $ 850,000 | $ 950,000 |
| **Subtotal: C&I** | **$ 6,745,693** | **$ 10,426,237** | **$ 9,304,305** | **$ 10,595,582** | **$ 10,711,364** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | |
| Educate the Public | $ 62,878 | $ 63,267 | $ 63,267 | $ 63,168 | $ 66,183 |
| Customer Engagement | $ 193,660 | $ 211,479 | $ 211,479 | $ 270,612 | $ 282,000 |
| Educate the Students | $ 41,953 | $ 22,202 | $ 22,202 | $ 43,340 | $ 45,164 |
| Educate the Workforce | $ 9,314 | $ 13,146 | $ 13,146 | $ 33,620 | $ 35,034 |
| **Subtotal: Education & Engagement** | **$ 307,805** | **$ 310,093** | **$ 310,093** | **$ 410,739** | **$ 428,381** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ 84,550 | $ 80,075 | $ 80,075 | $ 80,075 | $ 84,523 |
| C&I Financing Support | $ - | $ 86,332 | $ 86,332 | $ 78,256 | $ 93,905 |
| Research, Development and Demonstration | $ 34,459 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 119,009** | **$ 216,407** | **$ 216,407** | **$ 208,331** | **$ 228,428** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | |
| Administration | $ 133,366 | $ 114,208 | $ 114,208 | $ 114,209 | $ 120,553 |
| Marketing Plan | $ 22,597 | $ 14,630 | $ 14,630 | $ 53,000 | $ 70,480 |
| Planning | $ 123,125 | $ 74,992 | $ 74,992 | $ 74,993 | $ 79,158 |
| Evaluation Measurement and Verification | $ 145,595 | $ 217,523 | $ 217,523 | $ 200,000 | $ 200,000 |
| Evaluation Administrator | $ 19,902 | $ 18,667 | $ 18,667 | $ 20,000 | $ 20,000 |
| Information Technology | $ 148,381 | $ 133,320 | $ 133,320 | $ 133,321 | $ 140,726 |
| Energy Efficiency Board Consultants | $ 33,163 | $ 31,893 | $ 31,893 | $ 43,333 | $ 43,333 |
| Audits - Financial and Operational | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Performance Management Incentive (PMI) | $ 1,088,866 | $ 987,546 | $ 886,597 | $ 1,008,623 | $ 1,022,947 |
| **Subtotal: Other - Administrative & Planning** | **$ 1,724,995** | **$ 1,602,780** | **$ 1,501,831** | **$ 1,657,479** | **$ 1,707,198** |
| **TOTAL** | **$ 19,165,514** | **$ 22,993,571** | **$ 20,649,315** | **$ 23,495,801** | **$ 23,828,432** |

## Table A Pie Chart - Eversource Natural Gas (2019)



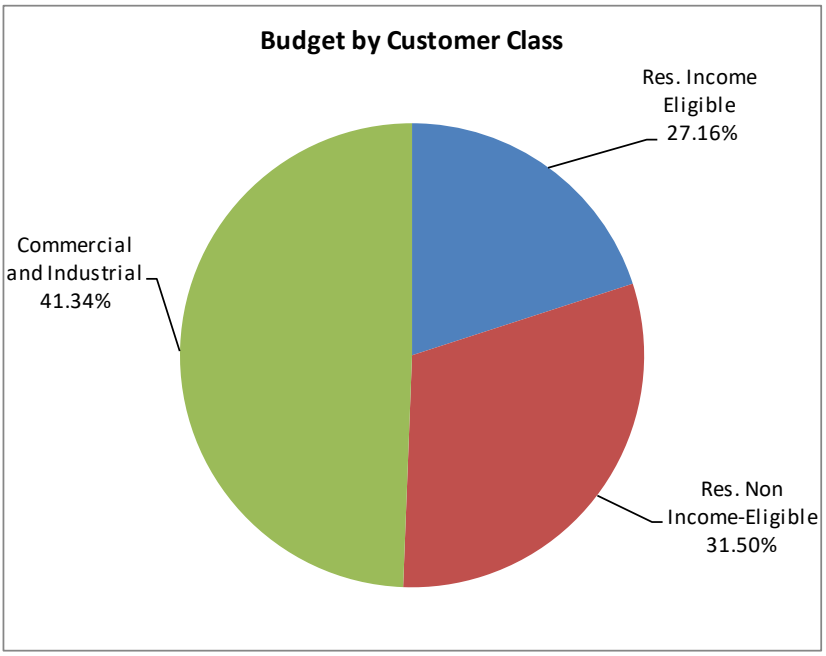

| Customer Class | Budget* | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income-Eligible | $3,765,209 | 18.23% | 19.70% |
| Res. Non-Income-Eligible | $5,868,400 | 28.42% | 30.71% |
| Residential Subtotal | $9,633,609 | 46.65% | 50.41% |
| | | | |
| Commercial and Industrial | $9,478,505 | 45.90% | 49.59% |
| C&I Subtotal | $9,478,505 | 45.90% | 49.59% |
| | | | |
| Residential and C&I Subtotal | $19,112,114 | 92.56% | 100.00% |
| | | | |
| *Other Expenditures* | | | |
| Other Expenditures | $1,537,201 | 7.44% | |
| Other Expenditures Subtotal | $1,537,201 | 7.44% | |
| | | | |
| TOTAL | $20,649,315 | 100.00% | |

## Table A Pie Chart - Eversource Natural Gas (2020)




| Customer Class | Budget* | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income-Eligible | $4,387,010 | 18.67% | 20.09% |
| Res. Non-Income-Eligible | $6,658,690 | 28.34% | 30.49% |
| **Residential Subtotal** | $11,045,700 | 47.01% | 50.57% |
| | | | |
| Commercial and Industrial | $10,795,622 | 45.95% | 49.43% |
| **C&I Subtotal** | $10,795,622 | 45.95% | 49.43% |
| | | | |
| **Residential and C&I Subtotal** | $21,841,323 | 92.96% | 100.00% |
| | | | |
| *Other Expenditures* | | | |
| Other Expenditures | $1,654,478 | 7.04% | |
| **Other Expenditures Subtotal** | $1,654,478 | 7.04% | |
| | | | |
| TOTAL | $23,495,801 | 100.00% | |

## Table A Pie Chart - Eversource Natural Gas (2021)




| Customer Class | Budget* | % of Total Budget | % of Residential and C&I Budget |
|---|---|---|---|
| Res. Income-Eligible | $4,430,259 | 18.59% | 20.01% |
| Res. Non-Income-Eligible | $6,776,048 | 28.44% | 30.60% |
| **Residential Subtotal** | $11,206,307 | 47.03% | 50.61% |
| | | | |
| Commercial and Industrial | $10,935,407 | 45.89% | 49.39% |
| **C&I Subtotal** | $10,935,407 | 45.89% | 49.39% |
| | | | |
| **Residential and C&I Subtotal** | $22,141,715 | 92.92% | 100.00% |
| | | | |
| *Other Expenditures* | | | |
| Other Expenditures | $1,686,717 | 7.08% | |
| **Other Expenditures Subtotal** | $1,686,717 | 7.08% | |
| | | | |
| TOTAL | $23,828,432 | 100.00% | |

## Table B - Eversource CT Natural Gas Costs and Benefits (2019)

| 2019 | Costs ($000) | | Benefits ($000) | | Benefit Cost Ratios | | Quantities | | Natural Gas Savings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Utility Cost | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) |
| **Residential** | | | | | | | | | | | |
| Retail Products | | | | | | | | | | | |
| New Construction | $821 | $1,959 | $3,741 | $6,100 | 4.56 | 3.11 | 341 | Homes | 160,505 | 4,012,615 | 1,392 |
| Home Energy Solutions | $1,996 | $2,449 | $3,339 | $5,504 | 1.67 | 2.25 | 2,915 | Homes | 170,172 | 3,325,697 | 1,602 |
| HVAC | $2,364 | $7,393 | $4,428 | $7,118 | 1.87 | 0.96 | 3,814 | Units | 223,899 | 4,467,988 | 2,029 |
| HES-Income Eligible | $3,725 | $3,808 | $5,691 | $9,352 | 1.53 | 2.46 | 8,616 | Homes | 287,197 | 5,653,175 | 2,715 |
| Behavior | $410 | $410 | $660 | $938 | 1.61 | 2.29 | 60,000 | Customers | 141,944 | 366,648 | 1,387 |
| **Subtotal: Residential** | $9,317 | $16,019 | $17,859 | $29,012 | 1.92 | 1.81 | | | 983,717 | 17,826,123 | 9,124 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $2,829 | $4,008 | $6,290 | $10,242 | 2.22 | 2.56 | 221 | Projects | 414,631 | 6,432,888 | 2,549 |
| Energy Opportunities | $5,097 | $13,369 | $12,088 | $19,095 | 2.37 | 1.43 | 69 | Projects | 970,521 | 11,190,008 | 5,513 |
| BES | $630 | $1,381 | $5,232 | $7,879 | 8.31 | 5.71 | 31 | Projects | 583,850 | 4,137,477 | 1,529 |
| Small Business Energy Advantage | $749 | $1,572 | $1,010 | $1,671 | 1.35 | 1.06 | 116 | Projects | 84,604 | 1,060,289 | 781 |
| **Subtotal: C&I** | $9,304 | $20,330 | $24,619 | $38,887 | 2.65 | 1.91 | | | 2,053,606 | 22,820,663 | 10,371 |
| | | | | | | | | | | | |
| **Subtotal: Other** | $2,028 | $2,028 | | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$20,649** | **$38,378** | **$42,478** | **$67,899** | **2.06** | **1.77** | | | **3,037,323** | **40,646,786** | **19,496** |

| 2019 | Natural Gas Cost Rates | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Gas Cost Rate $/ccf Annual | Gas Cost Ratio $/LT-ccf | Gas Demand Cost $/ccf | Gas Demand Cost $/LT-ccf | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | | | | | | | | | | |
| Retail Products | | | | | | | | | | |
| New Construction | $5.12 | $0.205 | $590 | $24 | 16,516 | 412,898 | $50 | $2 | 1,188 | 29,696 |
| Home Energy Solutions | $11.73 | $0.600 | $1,246 | $64 | 17,511 | 342,214 | $114 | $6 | 1,259 | 24,612 |
| HVAC | $10.56 | $0.529 | $1,165 | $58 | 23,039 | 459,756 | $103 | $5 | 1,657 | 33,066 |
| HES-Income Eligible | $12.97 | $0.659 | $1,372 | $70 | 29,553 | 581,712 | $126 | $6 | 2,125 | 41,837 |
| Behavior | $2.89 | $1.118 | $296 | $114 | 14,606 | 37,728 | $28 | $11 | 1,050 | 2,713 |
| **Subtotal: Residential** | $9.47 | $0.523 | $1,021 | $56 | 101,224 | 1,834,308 | $92 | $5 | 7,280 | 131,924 |
| **Commercial & Industrial** | | | | | | | | | | |
| Energy Conscious Blueprint | $6.82 | $0.440 | $1,110 | $72 | 42,666 | 661,944 | $66 | $4 | 3,069 | 46,590 |
| Energy Opportunities | $5.25 | $0.455 | $925 | $80 | 99,867 | 1,151,452 | $51 | $4 | 7,182 | 82,184 |
| BES | $1.08 | $0.152 | $412 | $58 | 60,078 | 425,746 | $10 | $1 | 4,321 | 30,649 |
| Small Business Energy Advantage | $8.85 | $0.706 | $959 | $77 | 8,706 | 109,104 | $86 | $7 | 626 | 7,766 |
| **Subtotal: C&I** | $4.53 | $0.408 | $897 | $81 | 211,316 | 2,348,246 | $44 | $4 | 15,198 | 167,190 |
| | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **TOTAL** | **$6.80** | **$0.508** | **$1,059** | **$79** | **312,541** | **4,182,554** | **$66** | **$5** | **22,478** | **299,114** |

## Table B - Eversource CT Natural Gas Costs and Benefits (2020)

| 2020 | Costs ($000) | | Benefits ($000) | | Benefit Cost Ratios | | Quantities | | Natural Gas Savings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Utility Cost | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) |
| **Residential** | | | | | | | | | | | |
| Retail Products | | | | | | | | | | | |
| New Construction | $940 | $2,078 | $2,770 | $4,549 | 2.95 | 2.19 | 390 | Homes | 118,656 | 2,966,400 | 1,030 |
| Home Energy Solutions | $2,313 | $2,765 | $3,935 | $6,550 | 1.70 | 2.37 | 3,437 | Homes | 201,487 | 3,937,608 | 1,897 |
| HVAC | $2,660 | $7,689 | $5,048 | $8,187 | 1.90 | 1.06 | 4,363 | Units | 256,141 | 5,111,390 | 2,321 |
| HES-Income Eligible | $4,347 | $4,430 | $6,655 | $11,100 | 1.53 | 2.51 | 10,109 | Homes | 338,577 | 6,664,444 | 3,199 |
| Behavior | $365 | $365 | $736 | $1,043 | 2.02 | 2.86 | 35,000 | Customers | 182,000 | 461,006 | 1,820 |
| **Subtotal: Residential** | $10,624 | $17,326 | $19,144 | $31,429 | 1.80 | 1.81 | | | 1,096,861 | 19,140,848 | 10,267 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $4,673 | $5,852 | $9,863 | $16,237 | 2.11 | 2.77 | 250 | Projects | 655,484 | 10,169,649 | 4,030 |
| Energy Opportunities | $4,357 | $12,629 | $9,015 | $14,425 | 2.07 | 1.14 | 78 | Projects | 734,537 | 8,469,134 | 4,172 |
| BES | $715 | $1,467 | $5,795 | $8,848 | 8.10 | 6.03 | 35 | Projects | 660,415 | 4,680,059 | 1,729 |
| Small Business Energy Advantage | $850 | $1,673 | $1,099 | $1,837 | 1.29 | 1.10 | 127 | Projects | 92,600 | 1,160,503 | 855 |
| **Subtotal: C&I** | $10,596 | $21,621 | $25,772 | $41,347 | 2.43 | 1.91 | | | 2,143,036 | 24,479,345 | 10,786 |
| | | | | | | | | | | | |
| **Subtotal: Other** | $2,277 | $2,277 | | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$23,496** | **$41,224** | **$44,916** | **$72,775** | **1.91** | **1.77** | | | **3,239,897** | **43,620,193** | **21,053** |

| 2020 | Natural Gas Cost Rates | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Gas Cost Rate $/ccf Annual | Gas Cost Ratio $/LT-ccf | Gas Demand Cost $/ccf | Gas Demand Cost $/LT-ccf | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | | | | | | | | | | |
| Retail Products | | | | | | | | | | |
| New Construction | $7.92 | $0.317 | $912 | $36 | 12,210 | 305,243 | $77 | $3 | 878 | 21,953 |
| Home Energy Solutions | $11.48 | $0.587 | $1,219 | $62 | 20,733 | 405,180 | $112 | $6 | 1,491 | 29,141 |
| HVAC | $10.38 | $0.520 | $1,146 | $57 | 26,357 | 525,962 | $101 | $5 | 1,896 | 37,827 |
| HES-Income Eligible | $12.84 | $0.652 | $1,359 | $69 | 34,840 | 685,771 | $125 | $6 | 2,506 | 49,321 |
| Behavior | $2.01 | $0.792 | $201 | $79 | 18,728 | 47,438 | $19 | $8 | 1,347 | 3,412 |
| **Subtotal: Residential** | $9.69 | $0.555 | $1,035 | $59 | 112,867 | 1,969,593 | $94 | $5 | 8,117 | 141,654 |
| **Commercial & Industrial** | | | | | | | | | | |
| Energy Conscious Blueprint | $7.13 | $0.460 | $1,160 | $75 | 67,449 | 1,046,457 | $69 | $4 | 4,851 | 73,654 |
| Energy Opportunities | $5.93 | $0.514 | $1,044 | $91 | 75,584 | 871,474 | $58 | $5 | 5,436 | 62,201 |
| BES | $1.08 | $0.153 | $414 | $58 | 67,957 | 481,578 | $11 | $1 | 4,887 | 34,669 |
| Small Business Energy Advantage | $9.18 | $0.732 | $994 | $79 | 9,529 | 119,416 | $89 | $7 | 685 | 8,500 |
| **Subtotal: C&I** | $4.94 | $0.433 | $982 | $86 | 220,518 | 2,518,925 | $48 | $4 | 15,860 | 179,024 |
| | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **TOTAL** | **$7.25** | **$0.539** | **$1,116** | **$83** | **333,385** | **4,488,518** | **$70** | **$5** | **23,977** | **320,678** |

## Table B - Eversource CT Natural Gas Costs and Benefits (2021)

| 2021 | Costs ($000) | | Benefits ($000) | | Benefit Cost Ratios | | Quantities | | Natural Gas Savings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Utility Cost | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility Cost Test | Total Resource Cost Test | No. of Units | Units of Measure | Annual Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) |
| **Residential** | | | | | | | | | | | |
| Retail Products | | | | | | | | | | | |
| New Construction | $953 | $2,091 | $2,818 | $4,674 | 2.96 | 2.23 | 396 | Homes | 121,361 | 3,034,033 | 1,055 |
| Home Energy Solutions | $2,363 | $2,816 | $3,980 | $6,713 | 1.68 | 2.38 | 3,524 | Homes | 206,539 | 4,036,331 | 1,944 |
| HVAC | $2,678 | $7,707 | $5,020 | $8,243 | 1.87 | 1.07 | 4,392 | Units | 257,851 | 5,145,509 | 2,337 |
| HES-Income Eligible | $4,388 | $4,471 | $6,546 | $11,090 | 1.49 | 2.48 | 10,059 | Homes | 336,872 | 6,646,203 | 3,186 |
| Behavior | $370 | $370 | $612 | $877 | 1.65 | 2.37 | 35,000 | Customers | 154,000 | 390,082 | 1,540 |
| **Subtotal: Residential** | $10,753 | $17,456 | $18,976 | $31,598 | 1.76 | 1.81 | | | 1,076,624 | 19,252,158 | 10,062 |
| **Commercial & Industrial** | | | | | | | | | | | |
| Energy Conscious Blueprint | $4,676 | $5,855 | $9,036 | $15,111 | 1.93 | 2.58 | 233 | Projects | 612,484 | 9,502,515 | 3,765 |
| Energy Opportunities | $4,359 | $12,631 | $8,141 | $13,274 | 1.87 | 1.05 | 72 | Projects | 683,311 | 7,878,507 | 3,881 |
| BES | $726 | $1,477 | $4,892 | $7,654 | 6.74 | 5.18 | 31 | Projects | 585,547 | 4,149,502 | 1,533 |
| Small Business Energy Advantage | $950 | $1,773 | $1,153 | $1,958 | 1.21 | 1.10 | 136 | Projects | 99,055 | 1,241,392 | 914 |
| **Subtotal: C&I** | $10,711 | $21,737 | $23,222 | $37,996 | 2.17 | 1.75 | | | 1,980,397 | 22,771,916 | 10,094 |
| | | | | | | | | | | | |
| **Subtotal: Other** | $2,364 | $2,364 | | | | | | | | | |
| | | | | | | | | | | | |
| **TOTAL** | **$23,828** | **$41,557** | **$42,198** | **$69,594** | **1.77** | **1.67** | | | **3,057,020** | **42,024,074** | **20,156** |

| 2021 | Natural Gas Cost Rates | | | | MMBtu Savings | | | | Emissions Savings | |
|---|---|---|---|---|---|---|---|---|---|---|
| Eversource Gas | Gas Cost Rate $/ccf Annual | Gas Cost Ratio $/LT-ccf | Gas Demand Cost $/ccf | Gas Demand Cost $/LT-ccf | Annual MMBtu | Lifetime MMBtu | Cost per Annual MMBtu | Cost per Lifetime MMBtu | Annual Tons CO2 | Lifetime Tons CO2 |
| **Residential** | **Residential** | | | | | | | | | |
| Retail Products | | | | | | | | | | |
| New Construction | $7.85 | $0.314 | $904 | $36 | 12,488 | 312,202 | $76 | $3 | 898 | 22,454 |
| Home Energy Solutions | $11.44 | $0.585 | $1,216 | $62 | 21,253 | 415,338 | $111 | $6 | 1,529 | 29,871 |
| HVAC | $10.39 | $0.521 | $1,146 | $57 | 26,533 | 529,473 | $101 | $5 | 1,908 | 38,080 |
| HES-Income Eligible | $13.03 | $0.660 | $1,377 | $70 | 34,664 | 683,894 | $127 | $6 | 2,493 | 49,186 |
| Behavior | $2.40 | $0.949 | $240 | $95 | 15,847 | 40,139 | $23 | $9 | 1,140 | 2,887 |
| **Subtotal: Residential** | $9.99 | $0.559 | $1,069 | $60 | 110,785 | 1,981,047 | $97 | $5 | 7,968 | 142,478 |
| **Commercial & Industrial** | **Commercial & Industrial** | | | | | | | | | |
| Energy Conscious Blueprint | $7.63 | $0.492 | $1,242 | $80 | 63,025 | 977,809 | $74 | $5 | 4,533 | 68,822 |
| Energy Opportunities | $6.38 | $0.553 | $1,123 | $97 | 70,313 | 810,698 | $62 | $5 | 5,057 | 57,863 |
| BES | $1.24 | $0.175 | $473 | $67 | 60,253 | 426,984 | $12 | $2 | 4,333 | 30,738 |
| Small Business Energy Advantage | $9.59 | $0.765 | $1,039 | $83 | 10,193 | 127,739 | $93 | $7 | 733 | 9,093 |
| **Subtotal: C&I** | $5.41 | $0.470 | $1,061 | $92 | 203,783 | 2,343,230 | $53 | $5 | 14,656 | 166,517 |
| | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **TOTAL** | **$7.79** | **$0.567** | **$1,182** | **$86** | **314,567** | **4,324,277** | **$76** | **$6** | **22,624** | **308,994** |

# Table C – Eversource CT Natural Gas (2019)

**Table C**
**Eversource CT Gas 2019 EE Budget Details**

| Eversource CT Gas EE BUDGET | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 21,658 | $ 100 | $ 5,960 | $ - | $ 762,419 | $ 26,000 | $ 2,000 | $ 3,000 | $ 821,137 |
| Home Energy Solutions - Core Services | $ 392,568 | $ 500 | $ 204,681 | $ 13,557 | $ 1,218,046 | $ 142,000 | $ 20,000 | $ 5,000 | $ 1,996,353 |
| Home Energy Solutions - HVAC, Water Heaters | $ 63,035 | $ 484 | $ 105,448 | $ - | $ 2,189,952 | $ 4,000 | $ 100 | $ 1,000 | $ 2,364,019 |
| HES-Income Eligible | $ 392,413 | $ 500 | $ 20,354 | $ 29,316 | $ 3,183,589 | $ 88,000 | $ 3,000 | $ 8,000 | $ 3,725,172 |
| Residential Behavior | $ 20,000 | $ - | $ 390,000 | $ - | $ - | $ - | $ - | $ - | $ 410,000 |
| **Subtotal: Residential EE Portfolio** | **$ 889,674** | **$ 1,584** | **$ 726,443** | **$ 42,873** | **$ 7,354,006** | **$ 260,000** | **$ 25,100** | **$ 17,000** | **$ 9,316,680** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 120,845 | $ 500 | $ 59,075 | $ 22,956 | $ 2,595,631 | $ 28,000 | $ 1,000 | $ 1,000 | $ 2,829,007 |
| **Total - Lost Opportunity** | **$ 120,845** | **$ 500** | **$ 59,075** | **$ 22,956** | **$ 2,595,631** | **$ 28,000** | **$ 1,000** | **$ 1,000** | **$ 2,829,007** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 620,000 | $ 500 | $ 69,538 | $ 22,320 | $ 4,354,268 | $ 22,000 | $ 6,000 | $ 2,000 | $ 5,096,626 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSF | $ 77,500 | $ 100 | $ 39,736 | $ 837 | $ 494,499 | $ 15,000 | $ 1,000 | $ 1,000 | $ 629,672 |
| **Total C&I - Large Retrofit** | **$ 697,500** | **$ 600** | **$ 109,274** | **$ 23,157** | **$ 4,848,767** | **$ 37,000** | **$ 7,000** | **$ 3,000** | **$ 5,726,298** |
| Small Business Energy Advantage | $ 55,000 | $ 500 | $ 6,954 | $ - | $ 580,546 | $ 38,000 | $ 1,000 | $ 67,000 | $ 749,000 |
| **Subtotal: C&I EE Portfolio** | **$ 873,345** | **$ 1,600** | **$ 175,303** | **$ 46,113** | **$ 8,024,943** | **$ 103,000** | **$ 9,000** | **$ 71,000** | **$ 9,304,305** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 10,472 | $ 1,000 | $ 36,195 | $ - | $ - | $ 2,000 | $ 12,100 | $ 1,500 | $ 63,267 |
| Customer Engagement | $ 47,471 | $ - | $ 164,007 | $ - | $ - | $ - | $ - | $ - | $ 211,479 |
| Educate the Students | $ 6,352 | $ 500 | $ 12,850 | $ - | $ - | $ 1,000 | $ 500 | $ 1,000 | $ 22,202 |
| Educate the Workforce | $ 6,352 | $ - | $ 6,794 | $ - | $ - | $ - | $ - | $ - | $ 13,146 |
| **Subtotal: Education & Engagement** | **$ 70,647** | **$ 1,500** | **$ 219,846** | **$ -** | **$ -** | **$ 3,000** | **$ 12,600** | **$ 2,500** | **$ 310,093** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 80,075 | $ - | $ - | $ - | $ - | $ - | $ 80,075 |
| C&I Financing Support | $ - | $ - | $ 86,332 | $ - | $ - | $ - | $ - | $ - | $ 86,332 |
| Research, Development and Demonstration | $ 12,283 | $ - | $ 37,717 | $ - | $ - | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 12,283** | **$ -** | **$ 204,124** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 216,407** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 10,247 | $ - | $ 54,247 | $ - | $ - | $ - | $ - | $ 49,715 | $ 114,208 |
| Marketing Plan | $ 5,421 | $ - | $ - | $ - | $ - | $ 9,209 | $ - | $ - | $ 14,630 |
| Planning | $ 35,000 | $ - | $ 34,825 | $ 5,167 | $ - | $ - | $ - | $ - | $ 74,992 |
| Evaluation, Measurement and Verification | $ 10,000 | $ - | $ 207,523 | $ - | $ - | $ - | $ - | $ - | $ 217,523 |
| Evaluation Administrator | $ - | $ - | $ 18,667 | $ - | $ - | $ - | $ - | $ - | $ 18,667 |
| Information Technology | $ 24,358 | $ - | $ 98,629 | $ 10,333 | $ - | $ - | $ - | $ - | $ 133,320 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 31,893 | $ - | $ - | $ - | $ - | $ - | $ 31,893 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 886,597 | $ - | $ 886,597 |
| **Subtotal: Other** | **$ 85,026** | **$ -** | **$ 455,784** | **$ 15,500** | **$ -** | **$ 9,209** | **$ 886,597** | **$ 49,715** | **$ 1,501,831** |
| **TOTAL BUDGET** | **$ 1,930,976** | **$ 4,684** | **$ 1,781,500** | **$ 104,486** | **$ 15,378,949** | **$ 375,209** | **$ 933,297** | **$ 140,215** | **$ 20,649,315** |

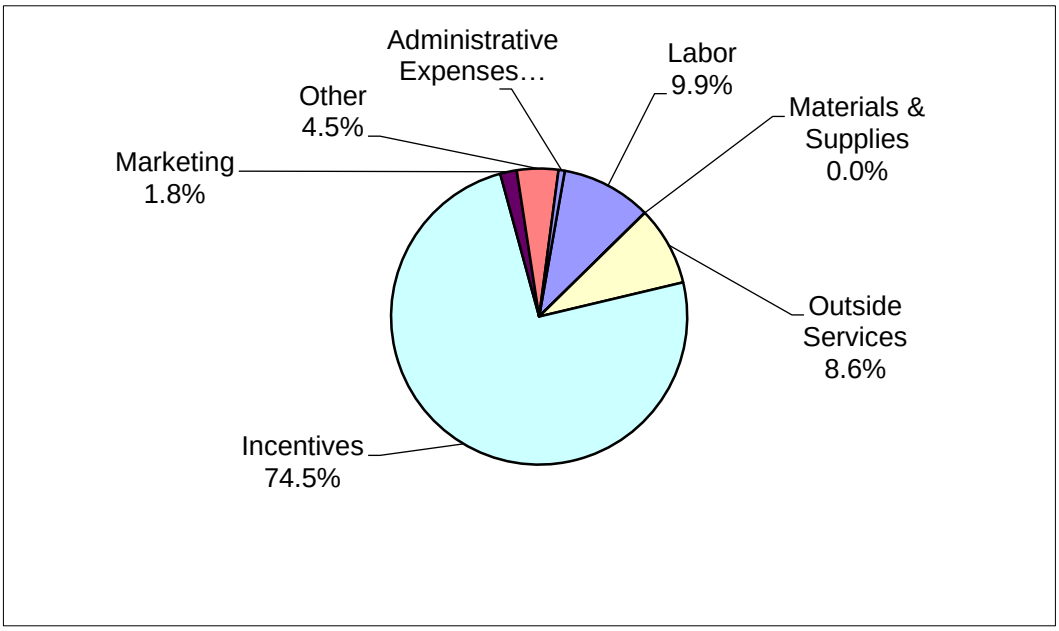
* Other includes RD&D, Admin, Planning & Evaluation, IT, Audit, and PMF.

## Table C Pie Chart - Eversource CT Natural Gas (2019)

**EVERSOURCE CT GAS**

**2019 Gas Conservation**

**Budget By Expense Class**




| Expense Classes | Budget | % of Budget |
|---|---|---|
| Labor | $ 2,035,462 | 9.9% |
| Materials & Supplies | $ 4,684 | 0.0% |
| Outside Services | $ 1,781,500 | 8.6% |
| Incentives | $ 15,378,949 | 74.5% |
| Marketing | $ 375,209 | 1.8% |
| Other | $ 933,297 | 4.5% |
| Administrative Expenses | $ 140,215 | 0.7% |
| **Total** | **$ 20,649,315** | **100.0%** |

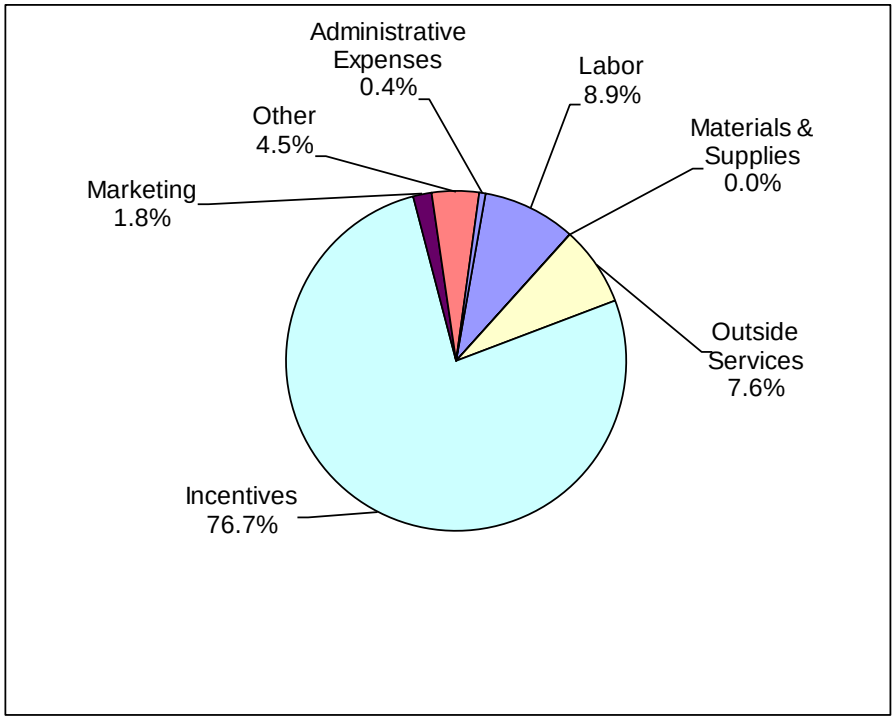
# Table C – Eversource CT Natural Gas (2020)

**Table C**
**Eversource CT Gas 2020 EE Budget Details**

| Eversource CT Gas EE BUDGET | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 22,308 | $ 100 | $ 5,960 | $ - | $ 880,173 | $ 26,000 | $ 2,000 | $ 3,000 | $ 939,541 |
| Home Energy Solutions - Core Services | $ 404,346 | $ 500 | $ 198,681 | $ 13,557 | $ 1,528,648 | $ 142,000 | $ 20,000 | $ 5,000 | $ 2,312,732 |
| Home Energy Solutions - HVAC, Water Heaters | $ 64,926 | $ 484 | $ 60,598 | $ - | $ 2,528,397 | $ 4,000 | $ 100 | $ 1,000 | $ 2,659,505 |
| HES-Income Eligible | $ 404,185 | $ 500 | $ 20,354 | $ 29,316 | $ 3,793,617 | $ 88,000 | $ 3,000 | $ 8,000 | $ 4,346,973 |
| Residential Behavior | $ 20,600 | $ - | $ 344,320 | $ - | $ - | $ - | $ - | $ - | $ 364,920 |
| **Subtotal: Residential** | **$ 916,364** | **$ 1,584** | **$ 629,913** | **$ 42,873** | **$ 8,730,836** | **$ 260,000** | **$ 25,100** | **$ 17,000** | **$ 10,623,670** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 124,471 | $ 500 | $ 59,075 | $ 22,956 | $ 4,436,395 | $ 28,000 | $ 1,000 | $ 1,000 | $ 4,673,397 |
| **Total - Lost Opportunity** | **$ 128,205** | **$ 500** | **$ 59,075** | **$ 22,956** | **$ 4,436,395** | **$ 28,000** | **$ 1,000** | **$ 1,000** | **$ 4,673,397** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 638,600 | $ 500 | $ 69,538 | $ 22,320 | $ 3,595,903 | $ 22,000 | $ 6,000 | $ 2,000 | $ 4,356,861 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 79,825 | $ 100 | $ 39,736 | $ 837 | $ 577,826 | $ 15,000 | $ 1,000 | $ 1,000 | $ 715,324 |
| **Total C&I - Large Retrofit** | **$ 718,425** | **$ 600** | **$ 109,274** | **$ 23,157** | **$ 4,173,729** | **$ 37,000** | **$ 7,000** | **$ 3,000** | **$ 5,072,185** |
| Small Business Energy Advantage | $ 56,650 | $ 500 | $ 6,954 | $ - | $ 679,896 | $ 38,000 | $ 1,000 | $ 67,000 | $ 850,000 |
| **Subtotal: C&I** | **$ 899,456** | **$ 1,600** | **$ 175,303** | **$ 46,113** | **$ 9,290,020** | **$ 103,000** | **$ 9,000** | **$ 71,000** | **$ 10,595,582** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 10,786 | $ 1,000 | $ 35,782 | $ - | $ - | $ 2,000 | $ 12,100 | $ 1,500 | $ 63,168 |
| Customer Engagement | $ 48,896 | $ - | $ 221,716 | $ - | $ - | $ - | $ - | $ - | $ 270,612 |
| Educate the Students | $ 6,542 | $ 500 | $ 33,797 | $ - | $ - | $ 1,000 | $ 500 | $ 1,000 | $ 43,340 |
| Educate the Workforce | $ 6,542 | $ - | $ 27,077 | $ - | $ - | $ - | $ - | $ - | $ 33,620 |
| **Subtotal: Education & Engagement** | **$ 72,766** | **$ 1,500** | **$ 318,373** | **$ -** | **$ -** | **$ 3,000** | **$ 12,600** | **$ 2,500** | **$ 410,739** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 80,075 | $ - | $ - | $ - | $ - | $ - | $ 80,075 |
| C&I Financing Support | $ - | $ - | $ 78,256 | $ - | $ - | $ - | $ - | $ - | $ 78,256 |
| Research, Development and Demonstration | $ 12,652 | $ - | $ 37,348 | $ - | $ - | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 12,652** | **$ -** | **$ 195,679** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 208,331** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 10,554 | $ - | $ 53,940 | $ - | $ - | $ - | $ - | $ 49,715 | $ 114,209 |
| Marketing Plan | $ 5,584 | $ - | $ - | $ - | $ - | $ 47,416 | $ - | $ - | $ 53,000 |
| Planning | $ 36,050 | $ - | $ 33,776 | $ 5,167 | $ - | $ - | $ - | $ - | $ 74,993 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ - | $ - | $ 20,000 |
| Information Technology | $ 25,089 | $ - | $ 97,898 | $ 10,333 | $ - | $ - | $ - | $ - | $ 133,321 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,008,623 | $ - | $ 1,008,623 |
| **Subtotal: Other** | **$ 77,277** | **$ -** | **$ 458,948** | **$ 15,500** | **$ -** | **$ 47,416** | **$ 1,008,623** | **$ 49,715** | **$ 1,657,479** |
| **TOTAL BUDGET** | **$1,978,605** | **$ 4,684** | **$ 1,778,216** | **$ 104,486** | **$ 18,020,856** | **$ 413,416** | **$ 1,055,323** | **$ 140,215** | **$ 23,495,801** |

* Other -includes RD&D, Admin, Planning & Evaluation, IT, Audit, and PMF.

## Table C Pie Chart - Eversource CT Natural Gas (2020)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| Labor | $ | 2,083,091 | 8.9% |
| Materials & Supplies | $ | 4,684 | 0.0% |
| Outside Services | $ | 1,778,216 | 7.6% |
| Incentives | $ | 18,020,856 | 76.7% |
| Marketing | $ | 413,416 | 1.8% |
| Other | $ | 1,055,323 | 4.5% |
| Administrative Expenses | $ | 140,215 | 0.6% |
| **Total** | **$** | **23,495,801** | **100.0%** |

# Table C – Eversource CT Natural Gas (2021)

| Eversource CT Gas EE BUDGET | Labor | Materials & Supplies | Outside Services | Contractor Labor | Incentives | Marketing | Other | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 22,977 | $ 100 | $ 5,960 | $ - | $ 893,249 | $ 26,000 | $ 2,000 | $ 3,000 | $ 953,286 |
| Home Energy Solutions - Core Services | $ 416,476 | $ 500 | $ 198,681 | $ 13,557 | $ 1,566,974 | $ 142,000 | $ 20,000 | $ 5,000 | $ 2,363,188 |
| Home Energy Solutions - HVAC, Water Heaters | $ 66,874 | $ 484 | $ 60,598 | $ - | $ 2,545,274 | $ 4,000 | $ 100 | $ 1,000 | $ 2,678,330 |
| HES-Income Eligible | $ 416,311 | $ 500 | $ 20,354 | $ 29,316 | $ 3,822,517 | $ 88,000 | $ 3,000 | $ 8,000 | $ 4,387,998 |
| Residential Behavior | $ 21,218 | $ - | $ 349,040 | $ - | $ - | $ - | $ - | $ - | $ 370,258 |
| **Subtotal: Residential** | **$ 943,855** | **$ 1,584** | **$ 634,633** | **$ 42,873** | **$ 8,828,014** | **$ 260,000** | **$ 25,100** | **$ 17,000** | **$ 10,753,060** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | |
| Energy Conscious Blueprint | $ 128,205 | $ 500 | $ 59,075 | $ 22,956 | $ 4,435,541 | $ 28,000 | $ 1,000 | $ 1,000 | $ 4,676,277 |
| **Total - Lost Opportunity** | **$ 128,205** | **$ 500** | **$ 59,075** | **$ 22,956** | **$ 4,435,541** | **$ 28,000** | **$ 1,000** | **$ 1,000** | **$ 4,676,277** |
| **C&I LARGE RETROFIT** | | | | | | | | | |
| Energy Opportunities | $ 657,758 | $ 500 | $ 69,538 | $ 22,320 | $ 3,579,288 | $ 22,000 | $ 6,000 | $ 2,000 | $ 4,359,404 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 82,220 | $ 100 | $ 39,736 | $ 837 | $ 585,791 | $ 15,000 | $ 1,000 | $ 1,000 | $ 725,684 |
| **Total C&I - Large Retrofit** | **$ 739,978** | **$ 600** | **$ 109,274** | **$ 23,157** | **$ 4,165,079** | **$ 37,000** | **$ 7,000** | **$ 3,000** | **$ 5,085,088** |
| Small Business Energy Advantage | $ 58,350 | $ 500 | $ 6,954 | $ - | $ 778,196 | $ 38,000 | $ 1,000 | $ 67,000 | $ 950,000 |
| **Subtotal: C&I Energy Efficiency Portfolio** | **$ 926,532** | **$ 1,600** | **$ 175,303** | **$ 46,113** | **$ 9,378,816** | **$ 103,000** | **$ 9,000** | **$ 71,000** | **$ 10,711,364** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | |
| Educate the Public | $ 11,109 | $ 1,000 | $ 38,473 | $ - | $ - | $ 2,000 | $ 12,100 | $ 1,500 | $ 66,183 |
| Customer Engagement | $ 50,362 | $ - | $ 231,638 | $ - | $ - | $ - | $ - | $ - | $ 282,000 |
| Educate the Students | $ 6,739 | $ 500 | $ 35,426 | $ - | $ - | $ 1,000 | $ 500 | $ 1,000 | $ 45,164 |
| Educate the Workforce | $ 6,739 | $ - | $ 28,296 | $ - | $ - | $ - | $ - | $ - | $ 35,034 |
| **Subtotal: Education & Engagement** | **$ 74,949** | **$ 1,500** | **$ 333,832** | **$ -** | **$ -** | **$ 3,000** | **$ 12,600** | **$ 2,500** | **$ 428,381** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ - | $ - | $ 84,523 | $ - | $ - | $ - | $ - | $ - | $ 84,523 |
| C&I Financing Support | $ - | $ - | $ 93,905 | $ - | $ - | $ - | $ - | $ - | $ 93,905 |
| Research, Development and Demonstration | $ 13,031 | $ - | $ 36,969 | $ - | $ - | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 13,031** | **$ -** | **$ 215,397** | **$ -** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 228,428** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | |
| Administration | $ 10,871 | $ - | $ 59,967 | $ - | $ - | $ - | $ - | $ 49,715 | $ 120,553 |
| Marketing Plan | $ 5,751 | $ - | $ - | $ - | $ - | $ 64,729 | $ - | $ - | $ 70,480 |
| Planning | $ 37,132 | $ - | $ 36,860 | $ 5,167 | $ - | $ - | $ - | $ - | $ 79,158 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ - | $ - | $ 20,000 |
| Information Technology | $ 25,842 | $ - | $ 104,551 | $ 10,333 | $ - | $ - | $ - | $ - | $ 140,726 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,022,947 | $ - | $ 1,022,947 |
| **Subtotal: Other** | **$ 79,595** | **$ -** | **$ 474,711** | **$ 15,500** | **$ -** | **$ 64,729** | **$ 1,022,947** | **$ 49,715** | **$ 1,707,198** |
| **TOTAL BUDGET** | **$ 2,037,963** | **$ 4,684** | **$ 1,833,877** | **$ 104,486** | **$ 18,206,831** | **$ 430,729** | **$ 1,069,647** | **$ 140,215** | **$ 23,828,432** |

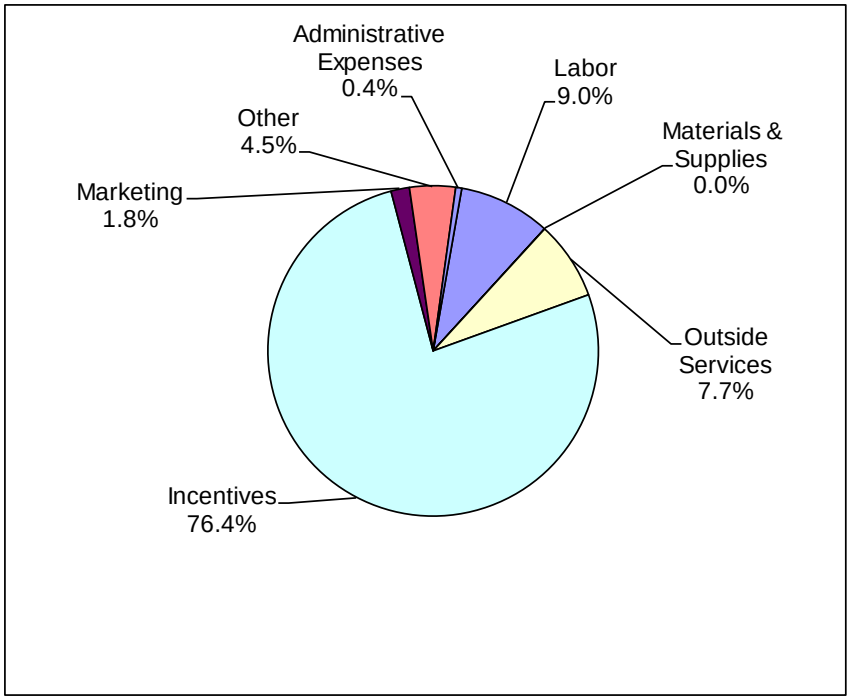
* Other includes RD&D, Admin, Planning & Evaluation, IT, Audit, and PMF.

## Table C Pie Chart - Eversource CT Natural Gas (2021)

**EVERSOURCE CT GAS**

**2021 Gas Conservation**

**Budget By Expense Class**




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| Labor | $ | 2,142,449 | 9.0% |
| Materials & Supplies | $ | 4,684 | 0.0% |
| Outside Services | $ | 1,833,877 | 7.7% |
| Incentives | $ | 18,206,831 | 76.4% |
| Marketing | $ | 430,729 | 1.8% |
| Other | $ | 1,069,647 | 4.5% |
| Administrative Expenses | $ | 140,215 | 0.6% |
| Total | $ | 23,828,432 | 100.0% |

# Table D – Eversource Natural Gas Historical and Projected Expenditures

**Table D**
**Eversource CT Gas - Expenditure**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 439,898 | $ 769,583 | $ 267,891 | $ 193,667 | $ 677,845 | $ 764,790 | $ 692,482 | $ 881,482 | $ 918,565 | $ 821,137 | $ 939,541 | $ 953,286 |
| Home Energy Solutions - Core Services (2016-2021) | $ 1,311,466 | $ 1,197,146 | $ 1,637,539 | $ 1,724,523 | $ 4,493,416 | $ 3,432,631 | $ 2,952,063 | $ 3,379,814 | $ 1,843,187 | $ 1,996,353 | $ 2,312,732 | $ 2,363,188 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ 1,668,456 | $ 1,483,857 | $ 2,938,795 | $ 2,364,019 | $ 2,659,505 | $ 2,678,330 |
| HES-Income Eligible | $ 1,054,952 | $ 1,894,261 | $ 1,683,995 | $ 3,138,425 | $ 5,614,632 | $ 4,650,418 | $ 4,926,003 | $ 4,617,168 | $ 4,400,007 | $ 3,725,172 | $ 4,346,973 | $ 4,387,998 |
| Water Heating | $ 60,847 | $ 49,946 | $ 55,706 | $ 41,069 | $ 329,133 | $ 523,846 | $ - | $ - | $ - | $ - | $ - | $ 1 |
| Residential Behavior | $ - | $ - | $ - | $ - | $ - | $ - | $ 183,310 | $ 614,173 | $ 167,458 | $ 410,000 | $ 364,920 | $ 370,258 |
| **Subtotal: Residential Energy Efficiency Portfolio** | **$ 2,867,163** | **$ 3,910,936** | **$ 3,645,131** | **$ 5,097,684** | **$ 11,115,026** | **$ 9,371,685** | **$ 10,422,314** | **$ 10,976,494** | **$ 10,268,012** | **$ 9,316,680** | **$ 10,623,670** | **$ 10,753,061** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,001,519 | $ 2,014,498 | $ 1,247,518 | $ 1,152,025 | $ 3,034,664 | $ 2,634,533 | $ 2,080,768 | $ 1,603,199 | $ 1,831,447 | $ 2,829,007 | $ 4,673,397 | $ 4,676,277 |
| **Total - Lost Opportunity** | **$ 1,001,519** | **$ 2,014,498** | **$ 1,247,518** | **$ 1,152,025** | **$ 3,034,664** | **$ 2,634,533** | **$ 2,080,768** | **$ 1,603,199** | **$ 1,831,447** | **$ 2,829,007** | **$ 4,673,397** | **$ 4,676,277** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 491,898 | $ 1,599,794 | $ 1,133,274 | $ 870,585 | $ 2,053,847 | $ 1,668,217 | $ 4,135,899 | $ 3,555,604 | $ 4,097,336 | $ 5,096,626 | $ 4,356,861 | $ 4,359,404 |
| Business & Energy Sustainablity (O&M, RCx, BSC, CSP/SEM) | $ 123,338 | $ 25,478 | $ 55,381 | $ 94,554 | $ 299,105 | $ 219,014 | $ 678,102 | $ 553,690 | $ 569,494 | $ 629,672 | $ 715,324 | $ 725,684 |
| Process Retrofit Pilot | | | | | | | | | | | | |
| **Total - C&I Large Retrofit** | **$ 615,236** | **$ 1,625,272** | **$ 1,188,655** | **$ 965,139** | **$ 2,352,952** | **$ 1,887,231** | **$ 4,814,001** | **$ 4,109,295** | **$ 4,666,830** | **$ 5,726,298** | **$ 5,072,185** | **$ 5,085,088** |
| Small Business Energy Advantage | | | $ 65,653 | $ 422,844 | $ 218,468 | $ 329,075 | $ 381,268 | $ 848,654 | $ 247,416 | $ 749,000 | $ 850,000 | $ 950,000 |
| **Subtotal: C&I Energy Efficiency Portfolio** | **$ 1,616,755** | **$ 3,639,770** | **$ 2,501,826** | **$ 2,540,008** | **$ 5,606,084** | **$ 4,850,839** | **$ 7,276,037** | **$ 6,561,148** | **$ 6,745,693** | **$ 9,304,305** | **$ 10,595,582** | **$ 10,711,364** |
| **OTHER - EDUCATION & ENGAGEMENT** | | | | | | | | | | | | |
| Educate the Public | $ - | $ - | $ - | $ - | $ - | $ - | $ 214,403 | $ 145,069 | $ 62,878 | $ 63,267 | $ 63,168 | $ 66,183 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ 284,008 | $ 282,000 | $ 229,036 | $ 231,942 | $ 193,660 | $ 211,479 | $ 270,612 | $ 282,000 |
| Educate the Students | $ - | $ - | $ - | $ - | $ - | $ - | $ 50,119 | $ 26,077 | $ 41,953 | $ 22,202 | $ 43,340 | $ 45,164 |
| Educate the Workforce | $ - | $ - | $ - | $ - | $ - | $ - | $ 26,313 | $ 18,686 | $ 9,314 | $ 13,146 | $ 33,620 | $ 35,034 |
| SmartLiving Center®-Museums Partnership | $ - | $ - | $ - | $ - | $ 165,067 | $ 83,670 | $ - | $ - | $ - | $ - | $ - | $ - |
| Clean Energy Communities/Behavior Pilot | $ - | $ - | $ - | $ - | $ 49,106 | $ 184,917 | $ - | $ - | $ - | $ - | $ - | $ - |
| EESmarts/K-12 | $ - | $ - | $ - | $ - | $ 8,790 | $ 96,470 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Education & Engagement** | **$ -** | **$ -** | **$ -** | **$ -** | **$ 506,971** | **$ 647,057** | **$ 519,871** | **$ 421,774** | **$ 307,805** | **$ 310,093** | **$ 410,739** | **$ 428,381** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | | | | | | |
| Residential Loan Program (includes ECLF and OBR) | $ 67,085 | $ 66,744 | $ 70,297 | $ 70,112 | $ 69,591 | $ 69,012 | $ 174,448 | $ 84,550 | $ 84,550 | $ 80,075 | $ 80,075 | $ 84,523 |
| C&I Financing Support (2016-2018) | $ - | $ - | $ - | $ - | $ - | $ - | $ 12,879 | $ 0 | $ - | $ 86,332 | $ 78,256 | $ 93,905 |
| Research, Development and Demonstration | $ - | $ - | $ - | $ - | $ - | $ 19,154 | $ 20,487 | $ 18,501 | $ 34,459 | $ 50,000 | $ 50,000 | $ 50,000 |
| Institute for Sustainable Energy (moved to Educate the Workforce) | $ - | $ - | $ - | $ - | $ 37,333 | $ 41,333 | $ - | $ - | $ - | $ - | $ - | $ - |
| ESPC Project Manager - Lead By Example | $ - | $ - | $ - | $ - | $ 34,825 | $ 25,857 | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Loan Program | $ - | $ - | $ - | $ 294 | $ - | $ 13,542 | $ - | $ - | $ - | $ - | $ - | $ - |
| EE Loan Defaults | $ - | $ - | $ - | $ - | $ - | $ 27,042 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Programs/Requirements** | **$ 67,085** | **$ 66,744** | **$ 70,297** | **$ 70,406** | **$ 141,749** | **$ 195,940** | **$ 207,814** | **$ 103,051** | **$ 119,009** | **$ 216,407** | **$ 208,331** | **$ 228,428** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | | | | | | |
| Administration | $ - | $ - | $ - | $ 51,486 | $ 94,752 | $ 119,374 | $ 37,023 | $ 52,134 | $ 133,366 | $ 114,208 | $ 114,209 | $ 120,553 |
| Marketing Plan | $ - | $ - | $ - | $ 8 | $ 65,930 | $ 100,283 | $ 95,028 | $ 37,911 | $ 22,597 | $ 14,630 | $ 53,000 | $ 70,480 |
| Planning | $ 34,581 | $ 50,197 | $ 67,396 | $ 103,533 | $ 147,774 | $ 111,082 | $ 94,234 | $ 61,481 | $ 123,125 | $ 74,992 | $ 74,993 | $ 79,158 |
| Evaluation Measurement and Verification | $ 27,057 | $ 257,425 | $ 126,001 | $ (17,049) | $ 169,462 | $ 181,443 | ` | $ 200,000 | $ 145,595 | $ 217,523 | $ 200,000 | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ - | $ - | $ 34,068 | $ 31,472 | $ 39,278 | $ 27,348 | $ 19,902 | $ 18,667 | $ 20,000 | $ 20,000 |
| Information Technology | $ 29,679 | $ 36,337 | $ 39,953 | $ 51,196 | $ 72,683 | $ 126,557 | $ 191,801 | $ 68,304 | $ 148,381 | $ 133,320 | $ 133,321 | $ 140,726 |
| Energy Efficiency Board Consultants | $ 13,905 | $ 10,605 | $ 18,161 | $ 38,924 | $ 77,207 | $ 75,225 | $ 70,328 | $ 47,599 | $ 33,163 | $ 31,893 | $ 43,333 | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 5,458 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Performance Management Incentive (PMI) | $ - | $ - | $ - | $ 605,725 | $ 920,771 | $ 942,177 | $ 587,469 | $ 1,123,213 | $ 1,088,866 | $ 886,597 | $ 1,008,623 | $ 1,022,947 |
| **Subtotal: Other - Administrative & Planning** | **$ 105,222** | **$ 354,564** | **$ 251,511** | **$ 833,824** | **$ 1,582,648** | **$ 1,687,612** | **$ 1,115,160** | **$ 1,623,448** | **$ 1,724,995** | **$ 1,501,831** | **$ 1,657,479** | **$ 1,707,198** |
| **TOTAL** | **$4,656,225** | **$7,972,014** | **$6,468,765** | **$8,541,922** | **$18,952,478** | **$16,753,133** | **$19,541,196** | **$19,685,915** | **$19,165,514** | **$20,649,315** | **$23,495,801** | **$23,828,433** |

# Table D1 – Eversource Natural Gas Annual Savings CCF (2010–2021)

**Table D1**
**Eversource CT Gas - Annual Savings (CCF)**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goals | 2020 Goals | 2021 Goals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 41,991 | 47,744 | 38,642 | 53,957 | 89,997 | 136,229 | 107,504 | 124,495 | 141,403 | 160,505 | 118,656 | 121,361 |
| Home Energy Solutions - Core Services (2016-2021) | 222,581 | 172,026 | 282,453 | 238,395 | 303,919 | 158,468 | 232,197 | 325,962 | 187,700 | 170,172 | 201,487 | 206,539 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 242,925 | 267,816 | 413,231 | 223,899 | 256,141 | 257,851 |
| Insulation Rebate | - | - | - | 17,015 | 45,588 | 29,764 | - | - | - | - | - | - |
| HES Early Retirement Furnace Rebate | - | - | - | 7,132 | 48,552 | - | - | - | - | - | - | - |
| Res High-Efficiency Natural Gas Furnace Replace Rebate | - | - | - | 41,477 | 133,167 | 202,140 | - | - | - | - | - | - |
| Window Rebate | - | - | - | 2,516 | 5,078 | 3,226 | - | - | - | - | - | - |
| **Home Energy Solution (HES) - Total** | **222,581** | **172,026** | **282,453** | **306,535** | **536,304** | **393,598** | **475,122** | **593,778** | **600,931** | **394,072** | **457,629** | **464,390** |
| HES-Income Eligible | 194,946 | 359,607 | 248,413 | 415,930 | 593,667 | 420,481 | 412,516 | 416,211 | 369,070 | 287,197 | 338,577 | 336,872 |
| Water Heating | 10,883 | 7,168 | 6,129 | 2,812 | 49,272 | 70,702 | - | - | - | - | - | - |
| Residential Behavior | - | - | - | - | - | - | - | 321,474 | 47,498 | 141,944 | 182,000 | 154,000 |
| **Subtotal: Residential** | **470,401** | **586,545** | **575,637** | **779,234** | **1,269,239** | **1,021,010** | **995,142** | **1,455,958** | **1,158,902** | **983,717** | **1,096,861** | **1,076,624** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 287,670 | 359,929 | 327,306 | 259,919 | 505,346 | 774,336 | 458,721 | 324,249 | 344,946 | 414,631 | 655,484 | 612,484 |
| **Total: Lost Opportunity** | **287,670** | **359,929** | **327,306** | **259,919** | **505,346** | **774,336** | **458,721** | **324,249** | **344,946** | **414,631** | **655,484** | **612,484** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 205,653 | 404,921 | 255,394 | 481,474 | 614,294 | 459,661 | 826,143 | 859,518 | 862,082 | 970,521 | 734,537 | 683,311 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 66,979 | 15,429 | 52,488 | 53,261 | 164,777 | 192,358 | 562,290 | 563,752 | 405,861 | 583,850 | 660,415 | 585,547 |
| **Total: C&I Large Retrofit** | **272,632** | **420,350** | **307,882** | **534,735** | **779,072** | **652,019** | **1,388,433** | **1,423,270** | **1,267,943** | **1,554,371** | **1,394,952** | **1,268,858** |
| Small Business Energy Advantage | - | - | 23,405 | 72,422 | 57,987 | 53,878 | 66,201 | 95,808 | 104,112 | 84,604 | 92,600 | 99,055 |
| **Subtotal: C&I** | **560,302** | **780,279** | **658,593** | **867,076** | **1,342,405** | **1,480,233** | **1,913,355** | **1,843,327** | **1,717,001** | **2,053,606** | **2,143,036** | **1,980,397** |
| **TOTAL** | **1,030,703** | **1,366,824** | **1,234,230** | **1,646,309** | **2,611,644** | **2,501,243** | **2,908,497** | **3,299,285** | **2,875,903** | **3,037,324** | **3,239,899** | **3,057,023** |

# Table D2 – Eversource Natural Gas Lifetime Savings CCF (2010–2021)

**Table D2**
**Eversource CT Gas - Lifetime Savings (CCF)**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 1,049,784 | 1,193,609 | 952,273 | 1,171,781 | 2,045,134 | 3,271,203 | 2,657,738 | 2,904,240 | 3,247,525 | 4,012,615 | 2,966,400 | 3,034,033 |
| Home Energy Solutions - Core Services (2016-2021) | 4,768,051 | 3,118,836 | 4,870,250 | 4,136,193 | 5,536,786 | 2,997,099 | 4,397,581 | 6,073,461 | 3,560,522 | 3,325,697 | 3,937,608 | 4,036,331 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 4,845,878 | 5,355,264 | 8,262,599 | 4,467,988 | 5,111,390 | 5,145,509 |
| Insulation Rebate | - | - | - | 425,386 | 1,139,707 | 744,112 | - | - | - | - | - | - |
| HES Early Retirement Furnace Rebate | - | - | - | 35,662 | 940,461 | - | - | - | - | - | - | - |
| Res High-Efficiency Natural Gas Furnace Replace Rebate | - | - | - | 829,533 | 2,615,788 | 4,042,806 | - | - | - | - | - | - |
| Window Rebate | - | - | - | 52,674 | 101,568 | 64,512 | - | - | - | - | - | - |
| **Home Energy Solution (HES) - Total** | **4,768,051** | **3,118,836** | **4,870,250** | **5,479,448** | **10,334,310** | **7,848,529** | **9,243,459** | **11,428,725** | **11,823,121** | **7,793,685** | **9,048,998** | **9,181,840** |
| HES-Income Eligible | 2,616,614 | 6,081,081 | 3,750,072 | 6,590,419 | 11,276,075 | 8,697,544 | 7,535,882 | 8,142,754 | 7,536,237 | 5,653,175 | 6,664,444 | 6,646,203 |
| Water Heating | 217,664 | 143,360 | 84,305 | 56,244 | 944,742 | 1,329,986 | - | - | - | - | - | - |
| Residential Behavior | - | - | - | - | - | - | - | 861,903 | 122,689 | 366,648 | 461,006 | 390,082 |
| **Subtotal: Residential Energy Efficiency Portfolio** | **8,652,113** | **10,536,886** | **9,656,900** | **13,297,892** | **24,600,260** | **21,147,262** | **19,437,079** | **23,337,622** | **22,729,572** | **17,826,123** | **19,140,848** | **19,252,158** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 4,371,511 | 5,637,483 | 5,074,442 | 4,012,514 | 7,665,291 | 14,168,474 | 6,862,601 | 4,932,458 | 5,016,971 | 6,432,888 | 10,169,649 | 9,502,515 |
| **Total - Lost Opportunity** | **4,371,511** | **5,637,483** | **5,074,442** | **4,012,514** | **7,665,291** | **14,168,474** | **6,862,601** | **4,932,458** | **5,016,971** | **6,432,888** | **10,169,649** | **9,502,515** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 2,347,874 | 4,168,922 | 3,017,300 | 5,870,925 | 7,136,800 | 5,687,189 | 8,948,254 | 9,274,301 | 8,677,066 | 11,190,008 | 8,469,134 | 7,878,507 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 669,798 | 77,145 | 369,200 | 398,693 | 958,524 | 1,120,186 | 3,456,389 | 3,428,408 | 2,301,322 | 4,137,477 | 4,680,059 | 4,149,502 |
| **Total - C&I Large Retrofit** | **3,017,672** | **4,246,067** | **3,386,500** | **6,269,618** | **8,095,324** | **6,807,375** | **12,404,643** | **12,702,709** | **10,978,388** | **15,327,486** | **13,149,193** | **12,028,009** |
| Small Business Energy Advantage | - | - | 290,172 | 835,602 | 693,581 | 738,098 | 771,880 | 1,335,130 | 1,273,289 | 1,060,289 | 1,160,503 | 1,241,392 |
| **Subtotal: C&I Energy Efficiency Portfolio** | **7,389,183** | **9,883,550** | **8,751,114** | **11,117,734** | **16,454,196** | **21,713,947** | **20,039,124** | **18,970,297** | **17,268,648** | **22,820,663** | **24,479,345** | **22,771,916** |
| **TOTAL** | **16,041,296** | **20,420,436** | **18,408,014** | **24,415,626** | **41,054,456** | **42,861,209** | **39,476,203** | **42,307,919** | **39,998,220** | **40,646,787** | **43,620,195** | **42,024,077** |

# Table D3 – Eversource Natural Gas: Cost per Annual Savings CCF (2010-2021)

**Table D3**
**Eversource CT Gas - Cost per Annual Savings (CCF)**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $10.476 | $16.119 | $ 6.933 | $ 3.589 | $7.532 | $ 5.614 | $ 6.441 | $ 7.080 | $ 6.496 | $ 5.12 | $ 7.92 | $ 7.85 |
| Home Energy Solutions - Core Services (2016-2021) | $ 5.892 | $ 6.959 | $ 5.798 | $ 5.626 | $8.378 | $ 8.721 | $ 6.213 | $ 5.692 | $ 3.067 | $ 5.07 | $ 5.05 | $ 5.09 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Insulation Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| HES Early Retirement Furnace Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Res High-Eficiency Natural Gas Furnace Replace Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Window Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Home Energy Solution (HES) - Total** | **$ 5.892** | **$ 6.959** | **$ 5.798** | **$ 5.626** | **$8.378** | **$ 8.721** | **$ 9.725** | **$ 8.191** | **$ 7.958** | **$11.06** | **$10.87** | **$10.86** |
| HES-Income Eligible | $ 5.412 | $ 5.268 | $ 6.779 | $ 7.546 | $9.458 | $11.060 | $11.941 | $11.093 | $11.922 | $12.97 | $12.84 | $13.03 |
| Water Heating | $ 5.591 | $ 6.968 | $ 9.089 | $14.605 | $6.680 | $ 7.409 | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Behavior | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Residential** | **$ 6.095** | **$ 6.668** | **$ 6.332** | **$ 6.542** | **$8.757** | **$ 9.179** | **$10.473** | **$ 7.539** | **$ 8.860** | **$ 9.47** | **$ 9.69** | **$ 9.99** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 3.481 | $ 5.597 | $ 3.811 | $ 4.432 | $6.005 | $ 3.402 | $ 4.536 | $ 4.944 | $ 5.309 | $ 6.82 | $ 7.13 | $ 7.63 |
| **Total - Lost Opportunity** | **$ 3.481** | **$ 5.597** | **$ 3.811** | **$ 4.432** | **$6.005** | **$ 3.402** | **$ 4.536** | **$ 4.944** | **$ 5.309** | **$ 6.82** | **$ 7.13** | **$ 7.63** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 2.392 | $ 3.951 | $ 4.437 | $ 1.808 | $3.343 | $ 3.629 | $ 5.006 | $ 4.137 | $ 4.753 | $ 5.25 | $ 5.93 | $ 6.38 |
| Business & Energy Sustainability (O&M, RCx, BSC) | $ 1.841 | $ 1.651 | $ 1.055 | $ 1.775 | $1.815 | $ 1.139 | $ 1.206 | $ 0.982 | $ 1.403 | $ 1.08 | $ 1.08 | $ 1.24 |
| **Total - C&I Large Retrofit** | **$ 2.257** | **$ 3.866** | **$ 3.861** | **$ 1.805** | **$3.020** | **$ 2.894** | **$ 3.467** | **$ 2.887** | **$ 3.681** | **$ 3.68** | **$ 3.64** | **$ 4.01** |
| Small Business Energy Advantage | $ - | $ - | $ 2.805 | $ 5.839 | $3.768 | $ 6.108 | $ 5.759 | $ 8.858 | $ 2.376 | $ 8.85 | $ 9.18 | $ 9.59 |
| **Subtotal: C&I** | **$ 2.886** | **$ 4.665** | **$ 3.799** | **$ 2.929** | **$4.176** | **$ 3.277** | **$ 3.803** | **$ 3.559** | **$ 3.929** | **$ 4.53** | **$ 4.94** | **$ 5.41** |
| **TOTAL** | **$ 4.518** | **$ 5.833** | **$ 5.241** | **$ 5.189** | **$7.257** | **$ 6.698** | **$ 6.719** | **$ 5.967** | **$ 6.664** | **$ 6.80** | **$ 7.25** | **$ 7.79** |

# Table D4 – Eversource Natural Gas: Cost per Lifetime Savings CCF (2010–2021)

**Table D4**
**Eversource CT Gas - Cost per Lifetime Savings (CCF)**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | $ 0.419 | $ 0.645 | $ 0.281 | $ 0.165 | $ 0.331 | $ 0.234 | $ 0.261 | $ 0.304 | $ 0.283 | $ 0.20 | $ 0.32 | $ 0.31 |
| Home Energy Solutions - Core Services (2016-2021) | $ 0.275 | $ 0.384 | $ 0.336 | $ 0.315 | $ 0.435 | $ 0.437 | $ 0.319 | $ 0.296 | $ 0.156 | $ 0.26 | $ 0.26 | $ 0.26 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Insulation Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| HES Early Retirement Furnace Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Res High-Efficiency Natural Gas Furnace Replace Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Window Rebate | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Home Energy Solution (HES) - Total** | **$ 0.275** | **$ 0.384** | **$ 0.336** | **$ 0.315** | **$ 0.435** | **$ 0.437** | **$ 0.500** | **$ 0.426** | **$ 0.404** | **$ 0.56** | **$ 0.55** | **$ 0.55** |
| HES-Income Eligible | $ 0.403 | $ 0.312 | $ 0.449 | $ 0.476 | $ 0.498 | $ 0.535 | $ 0.654 | $ 0.567 | $ 0.584 | $ 0.66 | $ 0.65 | $ 0.66 |
| Water Heating | $ 0.280 | $ 0.348 | $ 0.661 | $ 0.730 | $ 0.348 | $ 0.394 | $ - | $ - | $ - | $ - | $ - | $ - |
| Residential Behavior | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Residential Energy Efficiency Portfo** | **$ 0.331** | **$ 0.371** | **$ 0.377** | **$ 0.383** | **$ 0.452** | **$ 0.443** | **$ 0.536** | **$ 0.470** | **$ 0.452** | **$ 0.52** | **$ 0.56** | **$ 0.56** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.229 | $ 0.357 | $ 0.246 | $ 0.287 | $ 0.396 | $ 0.186 | $ 0.303 | $ 0.325 | $ 0.365 | $ 0.44 | $ 0.46 | $ 0.49 |
| **Total - Lost Opportunity** | **$ 0.229** | **$ 0.357** | **$ 0.246** | **$ 0.287** | **$ 0.396** | **$ 0.186** | **$ 0.303** | **$ 0.325** | **$ 0.365** | **$ 0.44** | **$ 0.46** | **$ 0.49** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | $ 0.210 | $ 0.384 | $ 0.376 | $ 0.148 | $ 0.288 | $ 0.293 | $ 0.462 | $ 0.383 | $ 0.211 | $ 0.25 | $ 0.55 | $ 0.59 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 0.184 | $ 0.330 | $ 0.150 | $ 0.237 | $ 0.312 | $ 0.196 | $ 0.196 | $ 0.162 | $ 0.247 | $ 0.15 | $ 0.15 | $ 0.17 |
| **Total - C&I Large Retrofit** | **$ 0.204** | **$ 0.383** | **$ 0.351** | **$ 0.154** | **$ 0.291** | **$ 0.277** | **$ 0.388** | **$ 0.323** | **$ 0.425** | **$ 0.37** | **$ 0.39** | **$ 0.42** |
| Small Business Energy Advantage | $ - | $ - | $ 0.226 | $ 0.506 | $ 0.315 | $ 0.446 | $ 0.494 | $ 0.636 | $ 0.194 | $ 0.71 | $ 0.73 | $ 0.77 |
| **Subtotal: C&I Energy Efficiency Portfolio** | **$ 0.219** | **$ 0.368** | **$ 0.286** | **$ 0.228** | **$ 0.341** | **$ 0.223** | **$ 0.363** | **$ 0.346** | **$ 0.391** | **$ 0.41** | **$ 0.43** | **$ 0.47** |
| **TOTAL** | **$ 0.290** | **$ 0.390** | **$ 0.351** | **$ 0.350** | **$ 0.462** | **$ 0.391** | **$ 0.495** | **$ 0.465** | **$ 0.479** | **$ 0.51** | **$ 0.54** | **$ 0.57** |

# Table D5 – Eversource Natural Gas Units (2010-2021)

**Table D5**
**Eversource CT Gas - Units**
**Natural Gas Conservation Plan Actual/Budget**

| Natural Gas EE Actual/Budget | 2010 Actual | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Budget | 2020 Budget | 2021 Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | | |
| New Construction, Additions & Major Renovations | 206 | 235 | 356 | 634 | 792 | 138 | 202 | 1,058 | 736 | 341 | 390 | 396 |
| Home Energy Solutions - Core Services (2016-2021) | 2,768 | 1,811 | 3,918 | 2,869 | 3,048 | 1,613 | 2,141 | 4,973 | 2,212 | 2,915 | 3,437 | 3,524 |
| Home Energy Solutions - HVAC, Water Heaters (2016-2021) | - | - | - | - | - | - | 3,350 | 3,393 | 4,783 | 3,814 | 4,363 | 4,392 |
| Insulation Rebate | - | - | - | 140 | 333 | 306 | - | - | - | - | - | - |
| HES Early Retirement Furnace Rebate | - | - | - | 34 | 394 | - | - | - | - | - | - | - |
| Res High-Efficiency Natural Gas Furnace Replace Rebate | - | - | - | 247 | 1,334 | 2,108 | - | - | - | - | - | - |
| Window Rebate | - | - | - | 217 | 529 | 336 | - | - | - | - | - | - |
| **Home Energy Solution (HES) - Total** | **2,768** | **1,811** | **3,918** | **3,507** | **5,638** | **4,363** | **5,491** | **8,366** | **6,995** | **6,729** | **7,801** | **7,916** |
| HES-Income Eligible | 2,497 | 2,347 | 1,579 | 2,052 | 4,070 | 2,978 | 2,205 | 8,590 | 4,036 | 8,616 | 10,109 | 10,059 |
| Water Heating | 179 | 128 | 112 | 54 | 752 | 1,084 | - | - | - | - | - | - |
| Residential Behavior | - | - | - | - | - | - | - | 95,000 | 29,750 | 60,000 | 35,000 | 35,000 |
| **Subtotal Residential** | **5,650** | **4,521** | **5,965** | **6,247** | **11,252** | **8,563** | **7,898** | **113,014** | **41,517** | **75,685** | **53,299** | **53,371** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | | | | | | |
| Energy Conscious Blueprint | 64 | 85 | 92 | 136 | 153 | 150 | 172 | 192 | 153 | 221 | 250 | 233 |
| **Total - Lost Opportunity** | **64** | **85** | **92** | **136** | **153** | **150** | **172** | **192** | **153** | **221** | **250** | **233** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | | |
| Energy Opportunities | 28 | 42 | 50 | 42 | 55 | 49 | 61 | 55 | 49 | 69 | 78 | 72 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 3 | 1 | 5 | 4 | 8 | 11 | 23 | 25 | 23 | 31 | 35 | 31 |
| **Total - C&I Large Retrofit** | **31** | **43** | **55** | **46** | **63** | **60** | **84** | **80** | **72** | **100** | **113** | **103** |
| Small Business Energy Advantage | - | - | 20 | 50 | 62 | 58 | 50 | 53 | 64 | 116 | 127 | 136 |
| **Subtotal: C&I Energy Efficiency Portfolio** | **95** | **128** | **167** | **232** | **278** | **268** | **306** | **325** | **289** | **436** | **489** | **472** |
| **TOTAL** | **5,745** | **4,649** | **6,132** | **6,479** | **11,530** | **8,831** | **8,204** | **113,339** | **41,806** | **76,121** | **53,788** | **53,843** |

## Eversource Natural Gas PMI (2019)

**Eversource CT Gas Company**

**2019 Management Incentive Performance Indicators and Incentive Matrix**

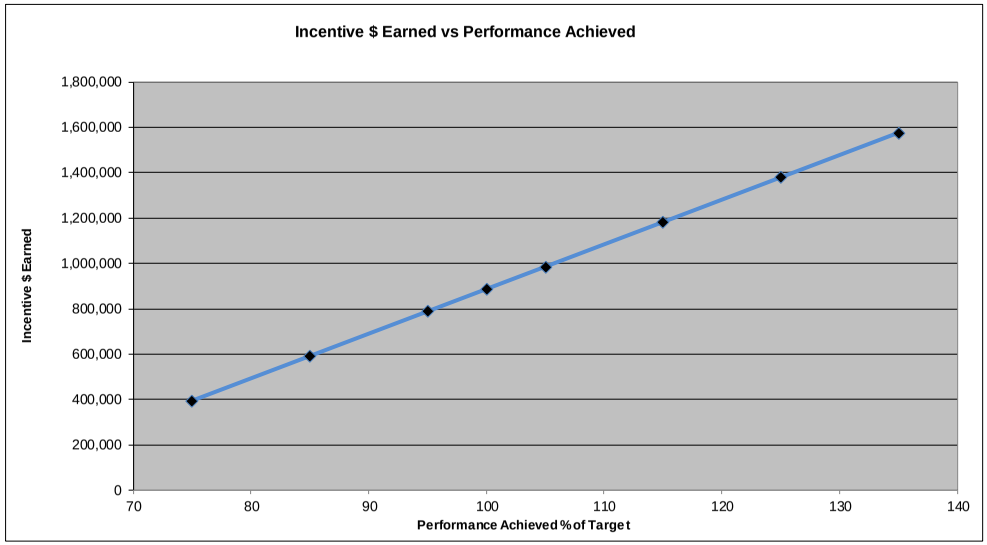
Eversource CT Gas and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Gas Performance Incentive is **$886,597** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$19,702,158** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $394,043 |
| 85 | 3% | $591,065 |
| 95 | 4% | $788,086 |
| **100** | **4.5%** | **$886,597** |
| 105 | 5% | $985,108 |
| 115 | 6% | $1,182,129 |
| 125 | 7% | $1,379,151 |
| 135 | 8% | $1,576,173 |

**Maximum Incentive Basis Budget** **$19,702,158**

**Goals will be pro-rated based on actual over/under spend of budget.**



## Eversource Natural Gas PMI (2019) – continued

| SECTOR<br>Program | | Performance Indicators | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| RESIDENTIAL | | | | | | | | | |
| | | Program Name | LT-CCF | | % (1) | | | | |
| Residential Programs (Sector Level) Sector Budget | $9,316,680 | New Construction | 4,012,615 | | 22.51% | Sum of Gas System Benefit from Residential programs | Gas System Benefit from Residential programs<br>$17,858,962 | 0.1950 | $172,886 |
| | | Home Energy Solutions | 3,325,697 | | 18.66% | | | | |
| | | HVAC | 4,467,988 | | 25.06% | | | | |
| | | HES-Income Eligible | 5,653,175 | | 31.71% | | | | |
| | | Behavior | 366,648 | | 2.06% | | | | |
| | | Total | 17,826,123 | | | | | | |
| | | Savings Rate | **$1.0018** | / CCF | | | | | |
| | | Savings | **$17,858,962** | | | | | | |
| | | (1) percent of target goal | | | | | | | |
| Net Residential Gas Benefit: | | Net Residential Gas Benefit : | **$8,542,282** | | | | $8,542,282 | 0.1950 | $172,886 |
| Home Energy Solutions | $4,360,371 | Achieve CCF savings per single-family home based on 2018 actuals adjusted to 2019 CT PSD plus 2.0%.(131.90*1.02) | | | | CCF/home | Achieve 134.58CCF savings/single-family home | 0.0600 | $53,196 |
| HES-Income Eligible | $3,725,172 | Annual CCF savings | | | | Annual CCF Savings | 287,197 | 0.0300 | $26,598 |

## Eversource Natural Gas PMI (2019) – continued

| SECTOR<br>Program | | Performance Indicators | | | Incentive Metrics<br>Incentive Metric | Target Goal | Weight | Incentive |
|---|---|---|---|---|---|---|---|---|
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | | | |
| | | **Program Name** | **LT-CCF** | **% (1)** | | | | |
| C&I Programs (Sector Level) Sector Budget | $9,304,305 | Energy Conscious Blueprint | 6,432,888 | 28.19% | Total Gas System Benefit from C&I programs | Gas System Benefit from C&I programs<br>$24,619,300 | 0.2100 | $186,185 |
| | | Energy Opportunities | 11,190,008 | 49.03% | | | | |
| | | Business and Energy Sustainability | 4,137,477 | 18.13% | | | | |
| | | Small Business | 1,060,289 | 4.65% | | | | |
| | | Total | 22,820,663 | | | | | |
| | | Savings Rate | **$1.0788** | / CCF | | | | |
| | | Savings | **$24,619,300** | | | | | |
| | | (1) percent of target goal | | | | | | |
| Net C&I Gas System Benefit: | | Net C&I Gas System Benefit: | **$15,314,995** | | | $15,314,995 | 0.2100 | $186,185 |
| Small Business Energy Advantage | $749,000 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures. | | | **%** of Gas Projects | **25%** of signed projects | 0.0500 | $44,330 |
| Energy Conscious Blueprint /Energy Opportunities | $7,925,633 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end uses with BES counting as more than one end use. | | | **%** of Gas Projects | **30%** of signed projects | 0.0500 | $44,330 |
| **Total Incentive $ Residential and C&I** | | | | | | | **1.00000** | **$886,597** |

## Eversource Natural Gas PMI (2020)

**Eversource CT Gas Company**

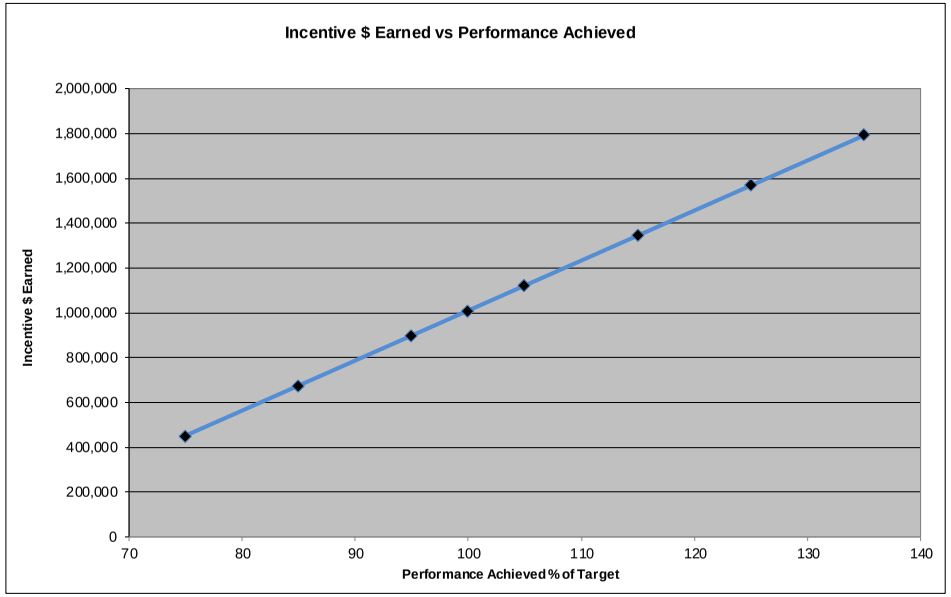
**2020 Management Incentive Performance Indicators and Incentive Matrix**

Eversource CT Gas and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Gas Performance Incentive is **$1,008,623** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$22,413,845** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $448,277 |
| 85 | 3% | $672,415 |
| 95 | 4% | $896,554 |
| **100** | **4.5%** | **$1,008,623** |
| 105 | 5% | $1,120,692 |
| 115 | 6% | $1,344,831 |
| 125 | 7% | $1,568,969 |
| 135 | 8% | $1,793,108 |
| **Maximum Incentive Basis Budget** | **$22,413,845** | |

**Goals will be pro-rated based on actual over/underspend of budget.**



## Eversource CT Gas Company

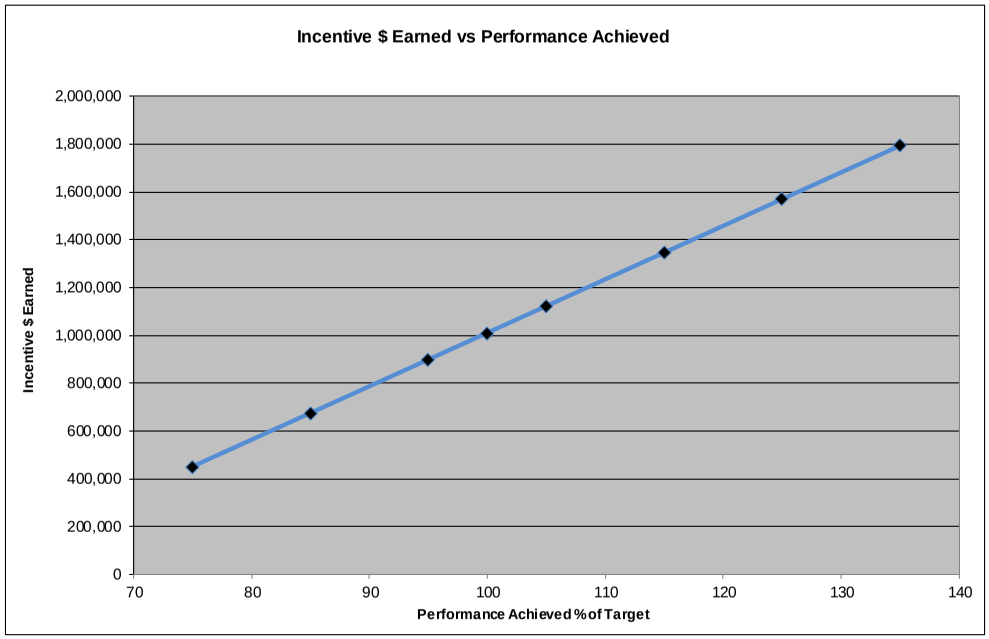
### 2020 Management Incentive Performance Indicators and Incentive Matrix

Eversource CT Gas and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Gas Performance Incentive is **$1,008,623** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$23,495,801** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $448,277 |
| 85 | 3% | $672,415 |
| 95 | 4% | $896,554 |
| **100** | **4.5%** | **$1,008,623** |
| 105 | 5% | $1,120,692 |
| 115 | 6% | $1,344,831 |
| 125 | 7% | $1,568,969 |
| 135 | 8% | $1,793,108 |
| **Maximum Incentive Basis Budget** | **$22,413,845** | |

**Goals will be pro-rated based on actual over/underspend of budget.**



## Eversource Natural Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | | | |
| | | **Program Name** | **LT-CCF** | | **% (1)** | | | | |
| Residential Programs (Sector Level) Sector Budget | $10,623,670 | New Construction | 2,966,400 | | 15.50% | Sum of Gas System Benefit from Residential programs | Gas System Benefit from Residential programs<br>$15,752,742 | 0.1950 | $196,681 |
| | | Home Energy Solutions | 3,937,608 | | 20.57% | | | | |
| | | HVAC | 5,111,390 | | 26.70% | | | | |
| | | HES-Income Eligible | 6,664,444 | | 34.82% | | | | |
| | | Behavior | 461,006 | | 2.41% | | | | |
| | | **Total** | **19,140,848** | | | | | | |
| | | Savings Rate | **$0.8230** | / CCF | | | | | |
| | | Savings | **$15,752,742** | | | | | | |
| | | (1) percent of target goal | | | | | | | |
| Net Residential Gas Benefit: | | Net Residential Gas Benefit : | **$5,129,072** | | | | $5,129,072 | 0.1950 | $196,681 |
| Home Energy Solutions | $4,972,237 | Achieve CCF savings per single family home - based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | | | CCF/home | Achieve CCF savings/single-family home. | 0.0600 | $60,517 |
| HES-Income Eligible | $4,346,973 | Annual CCF savings | | | | Annual CCF Savings | 338,577 | 0.0300 | $30,259 |

## Eversource Natural Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | | | |
| | | **Program Name** | **LT-CCF** | **% (1)** | | | | |
| C&I Programs (Sector Level) Sector Budget | $10,595,582 | Energy Conscious Blueprint | 10,169,649 | 41.54% | Total Gas System Benefit from C&I programs | Gas System Benefit from C&I programs | 0.2100 | $211,811 |
| | | Energy Opportunities | 8,469,134 | 34.60% | | $22,820,313 | | |
| | | Business and Energy Sustainability | 4,680,059 | 19.12% | | | | |
| | | Small Business Energy Advantage | 1,160,503 | 4.74% | | | | |
| | | **Total** | **24,479,345** | | | | | |
| | | Savings Rate | **$0.9322** | / CCF | | | | |
| | | Savings | **$22,820,313** | | | | | |
| | | (1) percent of target goal | | | | | | |
| Net C&I Gas System Benefit: | | Net C&I Gas System Benefit: | **$12,224,731** | | | $12,224,731 | 0.2100 | $211,811 |
| Small Business Energy Advantage | $850,000 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures based on 2019 Actual Results plus 5%. | | | % of Gas Projects | % of Signed Projects | 0.0500 | $50,431 |
| Energy Conscious Blueprint /Energy Opportunities | $9,030,258 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures with BES counting as more than one end use. Based on 2019 Actual Results plus 5%. | | | % of Gas Projects | % of Signed Projects | 0.0500 | $50,431 |
| **Total Incentive $ Residential and C&I** | | | | | | | **1.00000** | **$1,008,623** |

## Eversource Natural Gas PMI (2021)

### Eversource CT Gas Company

**2021 Management Incentive Performance Indicators and Incentive Matrix**

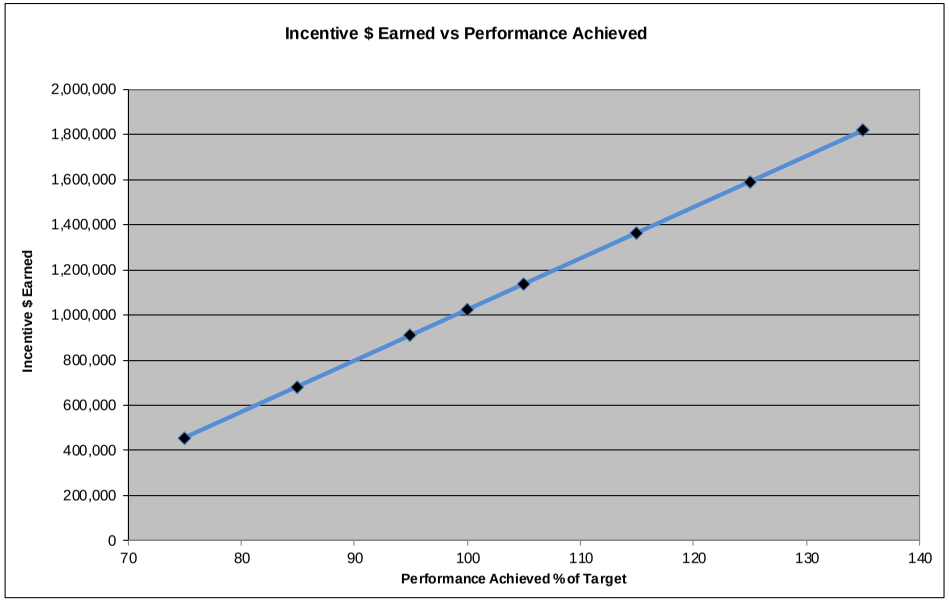
Eversource CT Gas and the EEB recognize that having clear indicators and metrics of performance are helpful in delivering quality programs to Connecticut consumers. The following is a table of performance and incentive metrics developed by the Companies with input from the EEB, the Board consultants and DEEP. These performance and incentive metrics apply to the programs delineated in the 2019-2021 Plan. The projected Eversource CT Gas Performance Incentive is **$1,022,947** and is based on achieving **100%** of all performance targets and earning an incentive of **4.5%** of the total EE program budget of **$23,828,432** as shown on Table A (exclusive of EEB costs, Evaluation Consultant costs, Management incentives and Audit costs). The actual earned amount will be calculated on a sliding scale based on the percent of goal achieved and the actual total expenditures, based on the following performance range:

**-Performance Incentive Illustration-**

| Performance % Minimum | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2% | $454,643 |
| 85 | 3% | $681,965 |
| 95 | 4% | $909,286 |
| **100** | **4.5%** | **$1,022,947** |
| 105 | 5% | $1,136,608 |
| 115 | 6% | $1,363,929 |
| 125 | 7% | $1,591,251 |
| 135 | 8% | $1,818,572 |

**Maximum Incentive Basis Budget** **$22,732,152**

**Goals will be prorated based on actual over/under spend of budget.**



## Eversource Natural Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **RESIDENTIAL** | | | | | | | | |
| | | **Program Name** | **LT-CCF** | **% (1)** | | | | |
| Residential Programs (Sector Level) Sector Budget | $10,753,060 | New Construction | 3,034,033 | 15.76% | Sum of Gas System Benefit from Residential programs | Gas System Benefit from Residential programs $15,540,166 | 0.1950 | $199,475 |
| | | Home Energy Solutions | 4,036,331 | 20.97% | | | | |
| | | HVAC | 5,145,509 | 26.73% | | | | |
| | | HES-Income Eligible | 6,646,203 | 34.52% | | | | |
| | | Behavior | 390,082 | 2.03% | | | | |
| | | Total | 19,252,158 | | | | | |
| | | Savings Rate | **$0.8072** | / CCF | | | | |
| | | Savings | **$15,540,166** | | | | | |
| | | (1) percent of target goal | | | | | | |
| Net Residential Gas Benefit: | | Net Residential Gas Benefit : | **$4,787,106** | | | $4,787,106 | 0.1950 | $199,475 |
| Home Energy Solutions | $5,041,518 | Achieve CCF savings per single-family home based on 2020 actuals adjusted to 2021 CT PSD plus 2.0% | | | CCF/home | Achieve CCF savings/single-family home | 0.0600 | $61,377 |
| HES-Income Eligible | $4,387,998 | Annual CCF savings | | | Annual CCF Savings | 336,872 | 0.0300 | $30,688 |

## Eversource Natural Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Incentive Metric | Target Goal | Weight | Incentive |
| **COMMERCIAL & INDUSTRIAL (C&I)** | | | | | | | | |
| | | **Program Name** | **LT-CCF** | **% (1)** | | | | |
| C&I Programs (Sector Level) Sector Budget | $10,711,364 | Energy Conscious Blueprint | 9,502,515 | 41.73% | Total Gas System Benefit from C&I programs | Gas System Benefit from C&I programs<br>$20,525,901 | 0.2100 | $214,819 |
| | | Energy Opportunities | 7,878,507 | 34.60% | | | | |
| | | Business and Energy Sustainability | 4,149,502 | 18.22% | | | | |
| | | Small Business Energy Advantage | 1,241,392 | 5.45% | | | | |
| | | Total | 22,771,916 | | | | | |
| | | Savings Rate | **$0.9014** | / CCF | | | | |
| | | Savings | **$20,525,901** | | | | | |
| | | (1) percent of target goal | | | | | | |
| Net C&I Gas System Benefit: | | Net C&I Gas System Benefit: | **$9,814,537** | | | $9,814,537 | 0.2100 | $214,819 |
| Business Energy Adv | $950,000 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering / all signed projects (excluding rebates). Comprehensive shall be defined as including more than one end use - based on 2020 Actual Results plus 5% | | | **%** of Gas Projects | **%** of signed projects | 0.0500 | $51,147 |
| Energy Conscious Blueprint /Energy Opportunities | $9,035,681 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering / all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use with BES counting as more than one end use.- based on 2020 Actual Results plus 5% | | | **%** of Gas Projects | **%** of signed projects | 0.0500 | $51,147 |
| **Total Incentive $ Residential and C&I** | | | | | | | **1.00000** | **$1,022,947** |

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# CONNECTICUT NATURAL GAS BUDGET AND SAVINGS TABLES

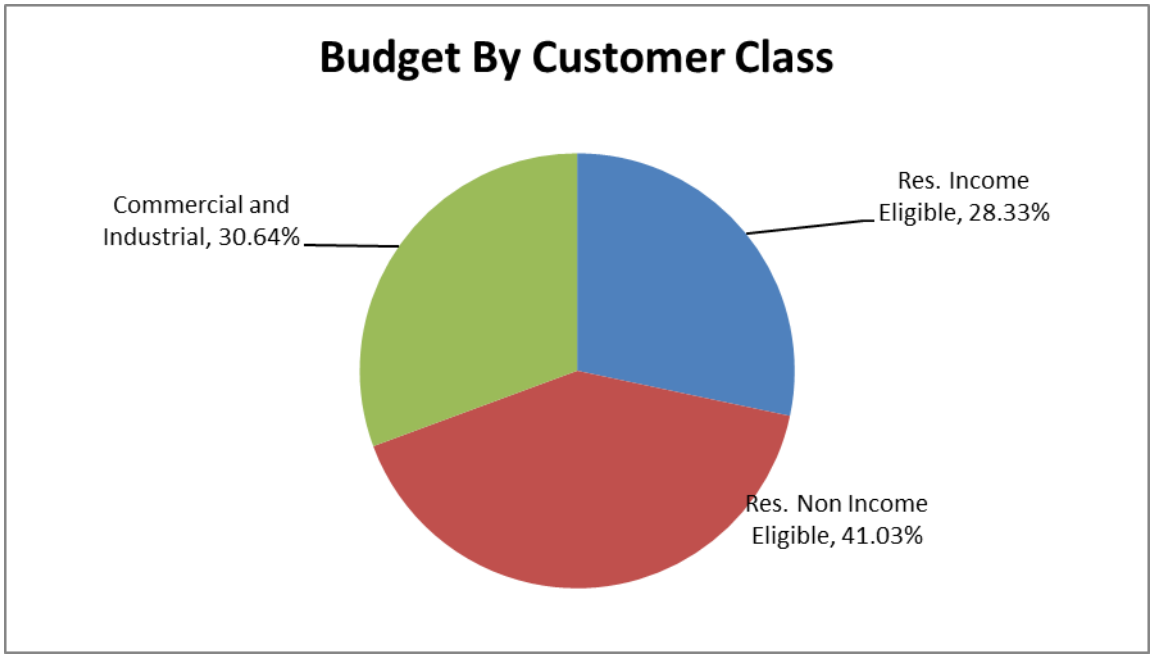
## Table A – Connecticut Natural Gas (2019)

**Table A**

**Proposed Natural Gas Energy Efficiency Plan Budget**

| Natural Gas EE Budget | 2018 CNG Actual Results | 2019 CNG Budget Update 11/1/2018 | 2019 CNG Budget Update 3/1/2019 | 2020 CNG Budget Update 3/1/2019 | 2021 CNG Budget Update 3/1/2019 |
|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | |
| New Construction, Additions & Major Renovation | $ 479,749 | $ 705,984 | $ 719,950 | $ 695,034 | $ 703,626 |
| Home Energy Solutions (HES) | $ 1,846,216 | $ 3,173,720 | $ 3,236,505 | $ 3,092,712 | $ 3,126,775 |
| HVAC/Water Heating | $ 2,051,069 | $ 1,788,801 | $ 1,824,189 | $ 1,804,983 | $ 1,822,968 |
| HES-Income Eligible | $ 4,987,179 | $ 4,124,823 | $ 4,206,424 | $ 4,096,485 | $ 4,117,341 |
| Residential Behavior | $ 137,830 | $ 153,197 | $ 156,228 | $ 153,445 | $ 155,328 |
| **Subtotal: Residential** | **$ 9,502,043** | **$ 9,946,524** | **$ 10,143,296** | **$ 9,842,659** | **$ 9,926,037** |
| **COMMERCIAL & INDUSTRIAL** | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | |
| Energy Conscious Blueprint | $ 1,901,649 | $ 2,109,594 | $ 2,151,328 | $ 2,059,924 | $ 2,095,137 |
| **Total - Lost Opportunity** | **$ 1,901,649** | **$ 2,109,594** | **$ 2,151,328** | **$ 2,059,924** | **$ 2,095,137** |
| **C&I LARGE RETROFIT** | | | | | |
| Energy Opportunities | $ 716,275 | $ 1,238,007 | $ 1,262,498 | $ 1,176,759 | $ 1,192,975 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 1,011,601 | $ 719,586 | $ 733,821 | $ 682,351 | $ 690,456 |
| **Total - C&I Large Retrofit** | **$ 1,727,876** | **$ 1,957,592** | **$ 1,996,318** | **$ 1,859,110** | **$ 1,883,431** |
| Small Business Energy Advantage | $ 211,943 | $ 328,242 | $ 334,736 | $ 318,826 | $ 322,674 |
| **Subtotal: C&I** | **$ 3,841,468** | **$ 4,395,429** | **$ 4,482,383** | **$ 4,237,860** | **$ 4,301,242** |
| **OTHER - EDUCATION** | | | | | |
| Educate the Public | $ 68,326 | $ 65,796 | $ 65,796 | $ 65,796 | $ 65,796 |
| Customer Engagement | $ 32,815 | $ - | $ - | $ 150,000 | $ 150,000 |
| Educate the Students | $ 25,891 | $ 22,859 | $ 22,859 | $ 45,164 | $ 45,164 |
| Educate the Workforce | $ 12,456 | $ 13,671 | $ 13,671 | $ 35,034 | $ 35,034 |
| **Subtotal: Education** | **$ 139,488** | **$ 102,326** | **$ 102,326** | **$ 295,994** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | |
| Financing Support - Residential | $ - | $ 86,292 | $ 86,292 | $ 86,292 | $ 86,292 |
| Financing Support - C&I | $ - | $ 20,000 | $ 20,000 | $ 20,000 | $ 20,000 |
| Research, Development and Demonstration | $ 54,781 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 54,781** | **$ 156,292** | **$ 156,292** | **$ 156,292** | **$ 156,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | |
| Administration | $ 143,237 | $ 150,463 | $ 150,463 | $ 154,854 | $ 159,218 |
| Marketing Plan | $ 31,196 | $ 14,630 | $ 14,630 | $ 31,100 | $ 40,100 |
| Information Technology | $ 150,315 | $ 137,531 | $ 137,531 | $ 139,037 | $ 140,589 |
| Planning | $ 108,069 | $ 96,583 | $ 96,583 | $ 99,480 | $ 102,465 |
| Evaluation Measurement and Verification | $ 217,514 | $ 217,523 | $ 217,523 | $ 200,000 | $ 200,000 |
| Evaluation Administrator | $ 18,667 | $ 18,667 | $ 18,667 | $ 20,000 | $ 20,000 |
| Energy Efficiency Board Consultants | $ 31,893 | $ 31,893 | $ 31,893 | $ 43,333 | $ 43,333 |
| Audits - Financial and Operational | $ 4,200 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Performance Management Incentive | $ 877,258 | $ 684,779 | $ 697,546 | $ 682,077 | $ 689,487 |
| **Subtotal: Other - Administrative & Planning** | **$ 1,582,349** | **$ 1,362,069** | **$ 1,374,837** | **$ 1,379,882** | **$ 1,405,192** |
| **TOTAL** | **$ 15,120,129** | **$ 15,962,640** | **$ 16,259,133** | **$ 15,912,687** | **$ 16,084,757** |

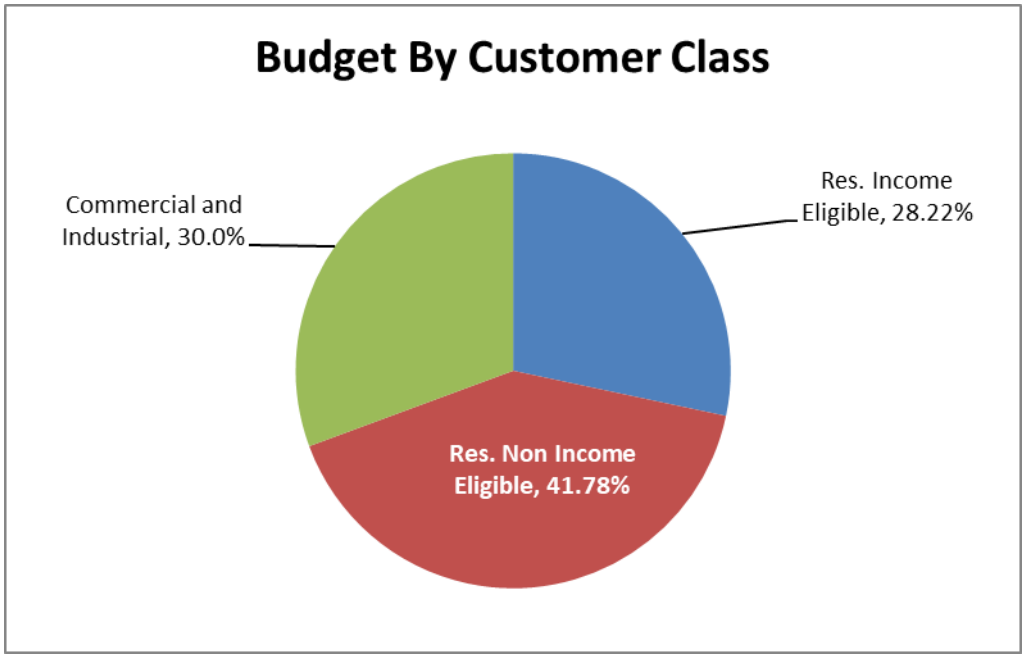
## Table A Pie Chart – Connecticut Natural Gas (2019)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,206,424 | 25.87% | 28.33% |
| Res. Non-Income Eligible | $6,092,889 | 37.47% | 41.03% |
| **Residential Subtotal** | $10,299,312 | 63.34% | 69.36% |
| Commercial and Industrial | $4,549,614 | 27.98% | 30.64% |
| **C&I Subtotal** | $4,549,614 | 27.98% | 30.64% |
| **Residential and C&I Subtotal** | $14,848,926 | 91.33% | 100.00% |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,410,207 | 8.67% | |
| **Other Expenditures Subtotal** | $1,410,207 | 8.67% | |
| **TOTAL** | **$16,259,133** | **100.00%** | |

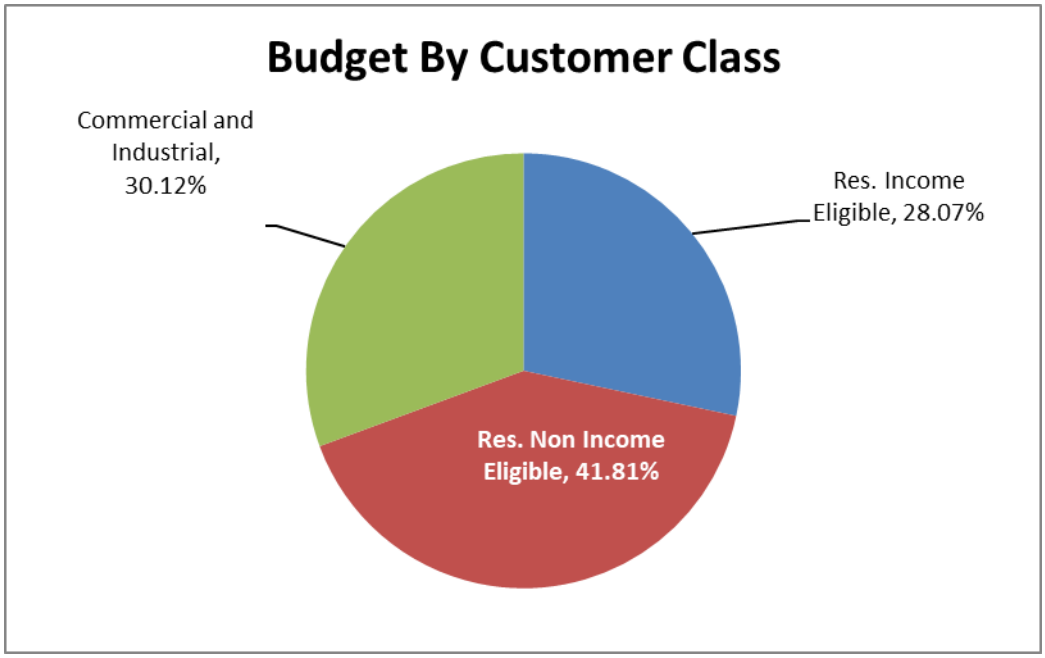
*Please see attached Budget Allocation Table.

## Table A Pie Chart - Connecticut Natural Gas (2020)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,096,485 | 25.74% | 28.22% |
| Res. Non-Income Eligible | $6,063,892 | 38.11% | 41.78% |
| **Residential Subtotal** | $10,160,377 | 63.85% | 70.00% |
| | | | |
| Commercial and Industrial | $4,353,528 | 27.36% | 30.00% |
| **C&I Subtotal** | $4,353,528 | 27.36% | 30.00% |
| | | | |
| **Residential and C&I Subtotal** | $14,513,905 | 91.21% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,398,782 | 8.79% | |
| **Other Expenditures Subtotal** | $1,398,782 | 8.79% | |
| | | | |
| **TOTAL** | **$15,912,687** | **100.00%** | |
| | | | |
| *Please see attached Budget Allocation Table. | | | |

## Table A Pie Chart - Connecticut Natural Gas (2021)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,117,341 | 25.60% | 28.07% |
| Res. Non-Income Eligible | $6,133,615 | 38.13% | 41.81% |
| **Residential Subtotal** | $10,250,955 | 63.73% | 69.88% |
| | | | |
| Commercial and Industrial | $4,418,709 | 27.47% | 30.12% |
| **C&I Subtotal** | $4,418,709 | 27.47% | 30.12% |
| | | | |
| **Residential and C&I Subtotal** | $14,669,665 | 91.20% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,415,092 | 8.80% | |
| **Other Expenditures Subtotal** | $1,415,092 | 8.80% | |
| | | | |
| **TOTAL** | **$16,084,757** | **100.00%** | |

*Please see attached Budget Allocation Table.

# Table B – Connecticut Natural Gas Costs and Benefits (2019)

**Table B**

**2019 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,206,424 | $ 4,207,292 | $ 4,671,220 | $ 8,576,668 | 1.11 | 2.04 | 4,243 | Homes |
| SCG HES-Income Eligible | $ 3,321,827 | $ 3,322,853 | $ 3,883,250 | $ 6,895,036 | 1.17 | 2.08 | 2,707 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,528,251** | **$ 7,530,145** | **$ 8,554,470** | **$ 15,471,704** | **1.14** | **2.05** | **6,950** | **Homes** |
| CNG Home Energy Solutions | $ 3,236,505 | $ 3,910,693 | $ 3,863,371 | $ 7,322,391 | 1.19 | 1.87 | 2,955 | Homes |
| SCG Home Energy Solutions | $ 1,944,962 | $ 2,618,003 | $ 2,661,054 | $ 4,964,778 | 1.37 | 1.90 | 1,763 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 5,181,467** | **$ 6,528,696** | **$ 6,524,425** | **$ 12,287,168** | **1.26** | **1.88** | **4,718** | **Homes** |
| CNG HVAC/Water Heating | $ 1,824,189 | $ 5,374,494 | $ 1,996,128 | $ 3,407,057 | 1.09 | 0.63 | 2,736 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,571,838 | $10,852,792 | $ 4,501,342 | $ 7,687,726 | 1.26 | 0.71 | 6,018 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 5,396,027** | **$ 16,227,286** | **$ 6,497,469** | **$ 11,094,784** | **1.20** | **0.68** | **8,753** | **HVAC** |
| CNG Residential Behavior | $ 156,228 | $ 156,228 | $ 211,804 | $ 340,071 | 1.36 | 2.18 | 15,000 | Units |
| SCG Residential Behavior | $ 179,676 | $ 179,676 | $ 211,804 | $ 340,071 | 1.18 | 1.89 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 335,904** | **$ 335,904** | **$ 423,609** | **$ 680,142** | **1.26** | | **30,000** | |
| CNG New Construction | $ 719,950 | $ 1,989,236 | $ 1,751,950 | $ 2,977,869 | 2.43 | 1.50 | 326 | Homes |
| SCG New Construction | $ 1,099,837 | $ 3,094,059 | $ 1,799,154 | $ 3,058,102 | 1.64 | 0.99 | 504 | Homes |
| **Subtotal: New Construction** | **$ 1,819,787** | **$ 5,083,295** | **$ 3,551,104** | **$ 6,035,971** | **1.95** | **1.19** | **830** | **Homes** |
| **Subtotal: Residential** | **$ 20,261,435** | **$35,705,326** | **$25,551,078** | **$ 45,569,769** | **1.26** | **1.28** | **51,250** | **Homes/ Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,151,328 | $ 2,831,535 | $ 2,844,677 | $ 4,715,078 | 1.32 | 1.67 | 142 | Projects |
| SCG Energy Conscious Blueprint | $ 2,011,328 | $ 2,764,544 | $ 3,150,010 | $ 5,221,171 | 1.57 | 1.89 | 157 | Projects |
| **Subtotal: Lost Opportunity** | **$ 4,162,656** | **$ 5,596,078** | **$ 5,994,687** | **$ 9,936,249** | **1.44** | **1.78** | **300** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,262,498 | $ 2,841,293 | $ 2,319,724 | $ 3,642,287 | 1.84 | 1.28 | 28 | Projects |
| SCG Energy Opportunities | $ 1,327,765 | $ 3,323,795 | $ 2,932,767 | $ 4,604,848 | 2.21 | 1.39 | 35 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,590,263** | **$ 6,165,089** | **$ 5,252,491** | **$ 8,247,135** | **2.03** | **1.34** | **63** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 733,821 | $ 1,423,932 | $ 4,078,343 | $ 6,125,237 | 5.56 | 4.30 | 27 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 574,069 | $ 1,233,310 | $ 3,895,915 | $ 5,851,250 | 6.79 | 4.74 | 26 | Projects |
| **Subtotal: O&M** | **$ 1,307,889** | **$ 2,657,242** | **$ 7,974,258** | **$ 11,976,487** | **6.10** | **4.51** | **52** | **Projects** |
| CNG Small Business Energy Advantage | $ 334,736 | $ 626,813 | $ 836,318 | $ 1,319,937 | 2.50 | 2.11 | 36 | Projects |
| SCG Small Business Energy Advantage | $ 286,415 | $ 639,585 | $ 1,011,248 | $ 1,596,024 | 3.53 | 2.50 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 621,151** | **$ 1,266,399** | **$ 1,847,565** | **$ 2,915,961** | **2.97** | **2.30** | **73** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 8,681,959** | **$ 15,684,808** | **$ 21,069,001** | **$ 33,075,831** | **2.43** | **2.11** | **488** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 102,326 | | | | | | | |
| SCG Other Programs/Requirements | $ 102,326 | | | | | | | |
| **Subtotal** | **$ 204,652** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,531,129 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,574,748 | | | | | | | |
| **Subtotal** | **$ 3,105,876** | | | | | | | |
| **Subtotal: Other** | **$ 3,310,529** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 10,143,296 | $ 15,637,943 | $ 12,494,474 | $ 22,624,055 | | | 25,259 | |
| **SCG Residential** | $ 10,118,139 | $ 20,067,383 | $ 13,056,604 | $ 22,945,713 | | | 25,991 | |
| **Residential Total** | **$ 20,261,435** | **$ 35,705,326** | **$ 25,551,078** | **$ 45,569,769** | | | **51,250** | |
| **CNG C&I** | $ 4,482,383 | $ 7,723,573 | $ 10,079,062 | $ 15,802,539 | | | 232 | |
| **SCG C&I** | $ 4,199,577 | $ 7,961,235 | $ 10,989,939 | $ 17,273,292 | | | 255 | |
| **C&I Total** | **$ 8,681,959** | **$ 15,684,808** | **$ 21,069,001** | **$ 33,075,831** | | | **488** | |
| **CNG Other** | $ 1,633,455 | | | | | | | |
| **SCG Other** | $ 1,677,074 | | | | | | | |
| **Other Total** | **$ 3,310,529** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 16,259,133** | **$ 23,361,516** | **$ 22,573,536** | **$ 38,426,594** | | | **25,492** | |
| **SCG TOTAL** | **$ 15,994,790** | **$ 28,028,617** | **$ 24,046,543** | **$ 40,219,006** | | | **26,247** | |
| **GRAND TOTAL** | **$ 32,253,923** | **$ 51,390,133** | **$ 46,620,079** | **$ 78,645,600** | **1.45** | **1.53** | **51,738** | |

# Table B – Connecticut Natural Gas Costs and Benefits (2019) — continued

**Table B**

**2019 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 326,524 | 7,063,295 | 3,291 | $ 12.88 | $ 0.60 | $ 1,278.01 | 33,599 | 726,813 | $ 125.19 | $ 5.79 |
| SCG HES-Income Eligible | 267,316 | 5,889,319 | 2,638 | $ 12.43 | $ 0.56 | $ 1,259.18 | 27,507 | 606,011 | $ 120.76 | $ 5.48 |
| **Subtotal: HES-Income Eligible** | **593,840** | **12,952,614** | **5,929** | **$ 12.68** | **$ 0.58** | **$ 1,269.63** | **61,106** | **1,332,824** | **$ 123.20** | **$ 5.65** |
| CNG Home Energy Solutions | 281,946 | 5,621,215 | 2,725 | $ 11.48 | $ 0.58 | $ 1,187.65 | 29,012 | 578,423 | $ 111.56 | $ 5.60 |
| SCG Home Energy Solutions | 185,707 | 3,939,131 | 1,838 | $ 10.47 | $ 0.49 | $ 1,058.23 | 19,109 | 405,337 | $ 101.78 | $ 4.80 |
| **Subtotal: Home Energy Solutions** | **467,653** | **9,560,347** | **4,563** | **$ 11.08** | **$ 0.54** | **$ 1,135.52** | **48,121** | **983,760** | **$ 107.67** | **$ 5.27** |
| CNG HVAC/Water Heating | 146,698 | 2,926,200 | 1,315 | $ 12.43 | $ 0.62 | $ 1,386.71 | 15,095 | 301,106 | $ 120.85 | $ 6.06 |
| SCG HVAC/Water Heating | 330,580 | 6,611,595 | 2,955 | $ 10.80 | $ 0.54 | $ 1,208.57 | 34,017 | 680,333 | $ 105.00 | $ 5.25 |
| **Subtotal: HVAC/Water Heating** | **477,278** | **9,537,796** | **4,271** | **$ 11.31** | **$ 0.57** | **$ 1,263.44** | **49,112** | **981,439** | **$ 109.87** | **$ 5.50** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.56 | $ 0.78 | | 10,298 | 20,596 | $ 15.17 | $ 7.59 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.80 | $ 0.90 | | 10,298 | 20,596 | $ 17.45 | $ 8.72 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.68** | **$ 0.84** | | **20,596** | **41,193** | **$ 16.31** | **$ 8.15** |
| CNG New Construction | 109,539 | 2,738,484 | 1,054 | $ 6.57 | $ 0.26 | $ 683.15 | 11,272 | 281,790 | $ 63.87 | $ 2.55 |
| SCG New Construction | 112,491 | 2,812,268 | 1,082 | $ 9.78 | $ 0.39 | $ 1,016.24 | 11,575 | 289,382 | $ 95.02 | $ 3.80 |
| **Subtotal: New Construction** | **222,030** | **5,550,753** | **2,136** | **$ 8.20** | **$ 0.33** | **$ 851.91** | **22,847** | **571,172** | **$ 79.65** | **$ 3.19** |
| **Subtotal: Residential** | **1,960,961** | **38,001,829** | **16,900** | **$ 10.33** | **$ 0.53** | **$ 1,198.93** | **201,783** | **3,910,388** | **$ 100.41** | **$ 5.18** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 259,256 | 3,542,521 | 3,884 | $ 8.30 | $ 0.61 | $ 553.85 | 26,677 | 364,525 | $ 80.64 | $ 5.90 |
| SCG Energy Conscious Blueprint | 287,084 | 3,922,758 | 4,301 | $ 7.01 | $ 0.51 | $ 467.62 | 29,541 | 403,652 | $ 68.09 | $ 4.98 |
| **Subtotal: Lost Opportunity** | **546,340** | **7,465,279** | **8,186** | **$ 7.62** | **$ 0.56** | **$ 508.54** | **56,218** | **768,177** | **$ 74.04** | **$ 5.42** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 209,536 | 2,415,903 | 1,484 | $ 6.03 | $ 0.52 | $ 850.60 | 21,561 | 248,596 | $ 58.55 | $ 5.08 |
| SCG Energy Opportunities | 264,911 | 3,054,363 | 1,876 | $ 5.01 | $ 0.43 | $ 707.58 | 27,259 | 314,294 | $ 48.71 | $ 4.22 |
| **Subtotal: Energy Opportunities** | **474,447** | **5,470,266** | **3,361** | **$ 5.46** | **$ 0.47** | **$ 770.74** | **48,821** | **562,890** | **$ 53.06** | **$ 4.60** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 499,687 | 3,476,719 | 1,675 | $ 1.47 | $ 0.21 | $ 438.06 | 51,418 | 357,754 | $ 14.27 | $ 2.05 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 477,335 | 3,321,202 | 1,600 | $ 1.20 | $ 0.17 | $ 358.74 | 49,118 | 341,752 | $ 11.69 | $ 1.68 |
| **Subtotal: O&M** | **977,022** | **6,797,921** | **3,275** | **$ 1.34** | **$ 0.19** | **$ 399.31** | **100,536** | **699,506** | **$ 13.01** | **$ 1.87** |
| CNG Small Business Energy Advantage | 83,439 | 867,240 | 2,012 | $ 4.01 | $ 0.39 | $ 166.39 | 8,586 | 89,239 | $ 38.99 | $ 3.75 |
| SCG Small Business Energy Advantage | 100,892 | 1,048,638 | 2,433 | $ 2.84 | $ 0.27 | $ 117.74 | 10,382 | 107,905 | $ 27.59 | $ 2.65 |
| **Subtotal: Small Business Energy Advantage** | **184,331** | **1,915,878** | **4,444** | **$ 3.37** | **$ 0.32** | **$ 139.76** | **18,968** | **197,144** | **$ 32.75** | **$ 3.15** |
| **Subtotal: Commercial & Industrial** | **2,182,140** | **21,649,345** | **19,266** | **$ 3.98** | **$ 0.40** | **$ 450.63** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 964,788 | 18,549,356 | 8,386 | $ 10.51 | $ 0.55 | $ 1,209.57 | 99,277 | 1,908,729 | $ 102.17 | $ 5.31 |
| **SCG Residential** | 996,174 | 19,452,473 | 8,514 | $ 10.16 | $ 0.52 | $ 1,188.45 | 102,506 | 2,001,660 | $ 98.71 | $ 5.05 |
| **Residential Total** | **1,960,961** | **38,001,829** | **16,900** | **$ 10.33** | **$ 0.53** | **$ 1,198.93** | **201,783** | **3,910,388** | **$ 100.41** | **$ 5.18** |
| **CNG C&I** | 1,051,918 | 10,302,384 | 9,056 | $ 4.26 | $ 0.44 | $ 494.99 | 108,242 | 1,060,115 | $ 41.41 | $ 4.23 |
| **SCG C&I** | 1,130,222 | 11,346,961 | 10,211 | $ 3.72 | $ 0.37 | $ 411.30 | 116,300 | 1,167,602 | $ 36.11 | $ 3.60 |
| **C&I Total** | **2,182,140** | **21,649,345** | **19,266** | **$ 3.98** | **$ 0.40** | **$ 450.63** | **224,542** | **2,227,718** | **$ 38.67** | **$ 3.90** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | **-** | **-** | **-** | | | | **0** | **0** | | |
| **CNG TOTAL** | **2,016,706** | **28,851,740** | **17,441** | **$ 8.06** | **$ 0.56** | **$ 932.22** | **207,519** | **2,968,844** | **$ 78.35** | **$ 5.48** |
| **SCG TOTAL** | **2,126,395** | **30,799,435** | **18,724** | **$ 7.52** | **$ 0.52** | **$ 854.23** | **218,806** | **3,169,262** | **$ 73.10** | **$ 5.05** |
| **GRAND TOTAL** | **4,143,101** | **59,651,174** | **36,166** | **$ 7.78** | **$ 0.54** | **$ 891.84** | **426,325** | **6,138,106** | **$ 75.66** | **$ 5.25** |

# Table B – Connecticut Natural Gas Costs and Benefits (2020)

**Table B**

**2020 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,096,485 | $ 4,097,325 | $ 4,570,422 | $ 8,420,136 | 1.12 | 2.06 | 4,119 | Homes |
| SCG HES-Income Eligible | $ 3,043,129 | $ 3,044,059 | $ 3,565,182 | $ 6,351,486 | 1.17 | 2.09 | 2,455 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,139,614** | **$ 7,141,384** | **$ 8,135,604** | **$ 14,771,622** | **1.14** | **2.07** | **6,575** | **Homes** |
| CNG Home Energy Solutions | $ 3,092,712 | $ 3,608,982 | $ 3,776,032 | $ 7,185,100 | 1.22 | 1.99 | 2,856 | Homes |
| SCG Home Energy Solutions | $ 1,742,346 | $ 2,481,296 | $ 4,383,759 | $ 8,209,708 | 2.52 | 3.31 | 2,870 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 4,835,059** | **$ 6,090,278** | **$ 8,159,792** | **$ 15,394,808** | **1.69** | **2.53** | **5,725** | **Homes** |
| CNG HVAC/Water Heating | $ 1,804,983 | $ 5,308,152 | $ 1,992,524 | $ 3,412,565 | 1.10 | 0.64 | 2,699 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,138,217 | $ 9,701,980 | $ 4,058,385 | $ 6,954,874 | 1.29 | 0.72 | 5,363 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 4,943,200** | **$ 15,010,131** | **$ 6,050,909** | **$ 10,367,439** | **1.22** | **0.69** | **8,062** | **HVAC** |
| CNG Residential Behavior | $ 153,445 | $ 153,445 | $ 237,972 | $ 368,804 | 1.55 | 2.40 | 15,000 | Units |
| SCG Residential Behavior | $ 159,643 | $ 159,643 | $ 237,972 | $ 368,804 | 1.49 | 2.31 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 313,088** | **$ 313,088** | **$ 475,943** | **$ 737,608** | **1.52** | | **30,000** | |
| CNG New Construction | $ 695,034 | $ 1,910,096 | $ 1,698,422 | $ 2,895,440 | 2.44 | 1.52 | 312 | Homes |
| SCG New Construction | $ 958,519 | $ 2,664,966 | $ 1,559,094 | $ 2,657,916 | 1.63 | 1.00 | 431 | Homes |
| **Subtotal: New Construction** | **$ 1,653,553** | **$ 4,575,063** | **$ 3,257,515** | **$ 5,553,356** | **1.97** | **1.21** | **743** | **Homes** |
| **Subtotal: Residential** | **$ 18,884,514** | **$ 33,129,945** | **$ 26,079,763** | **$ 46,824,833** | **1.38** | **1.41** | **51,105** | **Homes/Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,059,924 | $ 2,754,834 | $ 2,563,033 | $ 4,286,278 | 1.24 | 1.56 | 142 | Projects |
| SCG Energy Conscious Blueprint | $ 1,722,875 | $ 2,465,460 | $ 2,602,700 | $ 4,352,615 | 1.51 | 1.77 | 157 | Projects |
| **Subtotal: Lost Opportunity** | **$ 3,782,799** | **$ 5,220,294** | **$ 5,165,733** | **$ 8,638,893** | **1.37** | **1.65** | **300** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,176,759 | $ 2,608,469 | $ 1,940,401 | $ 3,083,705 | 1.65 | 1.18 | 24 | Projects |
| SCG Energy Opportunities | $ 1,131,751 | $ 2,800,927 | $ 2,262,240 | $ 3,595,175 | 2.00 | 1.28 | 28 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,308,510** | **$ 5,409,396** | **$ 4,202,641** | **$ 6,678,880** | **1.82** | **1.23** | **51** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 682,351 | $ 1,388,009 | $ 3,338,937 | $ 4,970,098 | 4.89 | 3.58 | 24 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 507,317 | $ 1,077,835 | $ 3,829,523 | $ 5,851,250 | 7.55 | 5.43 | 21 | Projects |
| **Subtotal: O&M** | **$ 1,189,668** | **$ 2,465,844** | **$ 7,168,459** | **$ 10,821,347** | **6.03** | **4.39** | **45** | **Projects** |
| CNG Small Business Energy Advantage | $ 318,826 | $ 596,395 | $ 732,466 | $ 1,170,585 | 2.30 | 1.96 | 35 | Projects |
| SCG Small Business Energy Advantage | $ 248,811 | $ 539,391 | $ 766,804 | $ 1,225,461 | 3.08 | 2.27 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 567,637** | **$ 1,135,786** | **$ 1,499,269** | **$ 2,396,046** | **2.64** | **2.11** | **72** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 7,848,613** | **$ 14,231,319** | **$ 18,036,103** | **$ 28,535,167** | **2.30** | **2.01** | **468** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 295,994 | | | | | | | |
| SCG Other Programs/Requirements | $ 295,994 | | | | | | | |
| **Subtotal** | **$ 591,988** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,536,174 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,529,395 | | | | | | | |
| **Subtotal** | **$ 3,065,569** | | | | | | | |
| **Subtotal: Other** | **$ 3,657,557** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 9,842,659 | $ 15,078,001 | $ 12,275,372 | $ 22,282,045 | | | 24,986 | |
| **SCG Residential** | $ 9,041,855 | $ 18,051,944 | $ 13,804,391 | $ 24,542,788 | | | 26,119 | |
| **Residential Total** | **$ 18,884,514** | **$ 33,129,945** | **$ 26,079,763** | **$ 46,824,833** | | | **51,105** | |
| **CNG C&I** | $ 4,237,860 | $ 7,347,706 | $ 8,574,837 | $ 13,510,666 | | | 225 | |
| **SCG C&I** | $ 3,610,753 | $ 6,883,613 | $ 9,461,266 | $ 15,024,501 | | | 243 | |
| **C&I Total** | **$ 7,848,613** | **$ 14,231,319** | **$ 18,036,103** | **$ 28,535,167** | | | **468** | |
| **CNG Other** | $ 1,832,168 | | | | | | | |
| **SCG Other** | $ 1,825,389 | | | | | | | |
| **Other Total** | **$ 3,657,557** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 15,912,687** | **$ 22,425,707** | **$ 20,850,208** | **$ 35,792,711** | | | **25,211** | |
| **SCG TOTAL** | **$ 14,477,997** | **$ 24,935,557** | **$ 23,265,658** | **$ 39,567,289** | | | **26,362** | |
| **GRAND TOTAL** | **$ 30,390,684** | **$ 47,361,264** | **$ 44,115,866** | **$ 75,360,000** | **1.45** | **1.59** | **51,573** | |

# Table B – Connecticut Natural Gas Costs and Benefits (2020) — continued

**Table B**

**2020 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 315,625 | 6,827,538 | 3,182 | $ 12.98 | $ 0.60 | $ 1,287.59 | 32,478 | 702,554 | $ 126.13 | $ 5.83 |
| SCG HES-Income Eligible | 242,454 | 5,341,574 | 2,393 | $ 12.55 | $ 0.57 | $ 1,271.82 | 24,949 | 549,648 | $ 121.98 | $ 5.54 |
| **Subtotal: HES-Income Eligible** | **558,079** | **12,169,112** | **5,574** | **$ 12.79** | **$ 0.59** | **$ 1,280.82** | **57,426** | **1,252,202** | **$ 124.33** | **$ 5.70** |
| CNG Home Energy Solutions | 272,426 | 5,431,411 | 2,129 | $ 11.35 | $ 0.57 | $ 1,452.69 | 28,033 | 558,892 | $ 110.33 | $ 5.53 |
| SCG Home Energy Solutions | 302,369 | 6,413,707 | 2,993 | $ 5.76 | $ 0.27 | $ 582.23 | 31,114 | 659,970 | $ 56.00 | $ 2.64 |
| **Subtotal: Home Energy Solutions** | **574,795** | **11,845,118** | **5,122** | **$ 8.41** | **$ 0.41** | **$ 944.07** | **59,146** | **1,218,863** | **$ 81.75** | **$ 3.97** |
| CNG HVAC/Water Heating | 144,751 | 2,887,350 | 1,298 | $ 12.47 | $ 0.63 | $ 1,390.57 | 14,895 | 297,108 | $ 121.18 | $ 6.08 |
| SCG HVAC/Water Heating | 294,612 | 5,892,232 | 2,634 | $ 10.65 | $ 0.53 | $ 1,191.49 | 30,316 | 606,311 | $ 103.52 | $ 5.18 |
| **Subtotal: HVAC/Water Heating** | **439,362** | **8,779,582** | **3,932** | **$ 11.25** | **$ 0.56** | **$ 1,257.21** | **45,210** | **903,419** | **$ 109.34** | **$ 5.47** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.53 | $ 0.77 | | 10,298 | 20,596 | $ 14.90 | $ 7.45 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.60 | $ 0.80 | | 10,298 | 20,596 | $ 15.50 | $ 7.75 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.56** | **$ 0.78** | | **20,596** | **41,193** | **$ 15.20** | **$ 7.60** |
| CNG New Construction | 104,860 | 2,621,497 | 1,009 | $ 6.63 | $ 0.27 | $ 688.94 | 10,790 | 269,752 | $ 64.41 | $ 2.58 |
| SCG New Construction | 96,258 | 2,406,445 | 926 | $ 9.96 | $ 0.40 | $ 1,035.03 | 9,905 | 247,623 | $ 96.77 | $ 3.87 |
| **Subtotal: New Construction** | **201,118** | **5,027,943** | **1,935** | **$ 8.22** | **$ 0.33** | **$ 854.58** | **20,695** | **517,375** | **$ 79.90** | **$ 3.20** |
| **Subtotal: Residential** | **1,973,514** | **38,222,075** | **16,563** | **$ 9.57** | **$ 0.49** | **$ 1,140.19** | **203,075** | **3,933,052** | **$ 92.99** | **$ 4.80** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 234,176 | 3,199,814 | 3,509 | $ 8.80 | $ 0.64 | $ 587.12 | 24,097 | 329,261 | $ 85.49 | $ 6.26 |
| SCG Energy Conscious Blueprint | 237,800 | 3,249,336 | 3,563 | $ 7.25 | $ 0.53 | $ 483.57 | 24,470 | 334,357 | $ 70.41 | $ 5.15 |
| **Subtotal: Lost Opportunity** | **471,975** | **6,449,150** | **7,071** | **$ 8.01** | **$ 0.59** | **$ 534.94** | **48,566** | **663,617** | **$ 77.89** | **$ 5.70** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 177,584 | 2,047,504 | 1,258 | $ 6.63 | $ 0.57 | $ 935.48 | 18,273 | 210,688 | $ 64.40 | $ 5.59 |
| SCG Energy Opportunities | 207,039 | 2,387,107 | 1,467 | $ 5.47 | $ 0.47 | $ 771.71 | 21,304 | 245,633 | $ 53.12 | $ 4.61 |
| **Subtotal: Energy Opportunities** | **384,623** | **4,434,611** | **2,724** | **$ 6.00** | **$ 0.52** | **$ 847.32** | **39,578** | **456,322** | **$ 58.33** | **$ 5.06** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 499,687 | 2,635,806 | 1,675 | $ 1.37 | $ 0.26 | $ 407.33 | 51,418 | 271,224 | $ 13.27 | $ 2.52 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 477,335 | 3,321,202 | 1,600 | $ 1.06 | $ 0.15 | $ 317.03 | 49,118 | 341,752 | $ 10.33 | $ 1.48 |
| **Subtotal: O&M** | **977,022** | **5,957,008** | **3,275** | **$ 1.22** | **$ 0.20** | **$ 363.21** | **100,536** | **612,976** | **$ 11.83** | **$ 1.94** |
| CNG Small Business Energy Advantage | 74,107 | 770,243 | 1,787 | $ 4.30 | $ 0.41 | $ 178.44 | 7,626 | 79,258 | $ 41.81 | $ 4.02 |
| SCG Small Business Energy Advantage | 77,581 | 806,352 | 1,871 | $ 3.21 | $ 0.31 | $ 133.01 | 7,983 | 82,974 | $ 31.17 | $ 3.00 |
| **Subtotal: Small Business Energy Advantage** | **151,688** | **1,576,595** | **3,657** | **$ 3.74** | **$ 0.36** | **$ 155.21** | **15,609** | **162,232** | **$ 36.37** | **$ 3.50** |
| **Subtotal: Commercial & Industrial** | **1,985,308** | **18,417,364** | **16,729** | **$ 3.95** | **$ 0.43** | **$ 469.17** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 937,742 | 17,967,957 | 7,617 | $ 10.50 | $ 0.55 | $ 1,292.14 | 96,494 | 1,848,903 | $ 102.00 | $ 5.32 |
| **SCG Residential** | 1,035,772 | 20,254,118 | 8,945 | $ 8.73 | $ 0.45 | $ 1,010.80 | 106,581 | 2,084,149 | $ 84.84 | $ 4.34 |
| **Residential Total** | **1,973,514** | **38,222,075** | **16,563** | **$ 9.57** | **$ 0.49** | **$ 1,140.19** | **203,075** | **3,933,052** | **$ 92.99** | **$ 4.80** |
| **CNG C&I** | 985,553 | 8,653,367 | 8,228 | $ 4.30 | $ 0.49 | $ 515.03 | 101,413 | 890,431 | $ 41.79 | $ 4.76 |
| **SCG C&I** | 999,755 | 9,763,997 | 8,500 | $ 3.61 | $ 0.37 | $ 424.79 | 102,875 | 1,004,715 | $ 35.10 | $ 3.59 |
| **C&I Total** | **1,985,308** | **18,417,364** | **16,729** | **$ 3.95** | **$ 0.43** | **$ 469.17** | **204,288** | **1,895,147** | **$ 38.42** | **$ 4.14** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | **-** | **-** | **-** | | | | **0** | **0** | | |
| **CNG TOTAL** | **1,923,295** | **26,621,324** | **15,846** | **$ 8.27** | **$ 0.60** | **$ 1,004.23** | **197,907** | **2,739,334** | **$ 80.40** | **$ 5.81** |
| **SCG TOTAL** | **2,035,527** | **30,018,115** | **17,445** | **$ 7.11** | **$ 0.48** | **$ 829.90** | **209,456** | **3,088,864** | **$ 69.12** | **$ 4.69** |
| **GRAND TOTAL** | **3,958,822** | **56,639,439** | **33,291** | **$ 7.68** | **$ 0.54** | **$ 912.88** | **407,363** | **5,828,198** | **$ 74.60** | **$ 5.21** |

# Table B – Connecticut Natural Gas Costs and Benefits (2021)

**Table B**

**2021 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,117,341 | $ 4,118,180 | $ 4,580,311 | $ 8,502,271 | 1.11 | 2.06 | 4,116 | Homes |
| SCG HES-Income Eligible | $ 3,109,482 | $ 3,110,428 | $ 3,638,118 | $ 6,529,418 | 1.17 | 2.10 | 2,498 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,226,823** | **$ 7,228,608** | **$ 8,218,428** | **$ 15,031,689** | **1.14** | **2.08** | **6,614** | **Homes** |
| CNG Home Energy Solutions | $ 3,126,775 | $ 3,647,880 | $ 3,824,134 | $ 7,339,478 | 1.22 | 2.01 | 2,887 | Homes |
| SCG Home Energy Solutions | $ 1,754,838 | $ 2,150,542 | $ 2,353,315 | $ 4,443,068 | 1.34 | 2.07 | 1,537 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 4,881,614** | **$ 5,798,423** | **$ 6,177,449** | **$ 11,782,547** | **1.27** | **2.03** | **4,424** | **Homes** |
| CNG HVAC/Water Heating | $ 1,822,968 | $ 5,362,037 | $ 2,016,764 | $ 3,480,049 | 1.1063 | 0.65 | 2,727 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,150,629 | $ 9,734,188 | $ 4,078,673 | $ 7,042,106 | 1.29 | 0.72 | 5,379 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 4,973,597** | **$ 15,096,225** | **$ 6,095,437** | **$ 10,522,155** | **1.23** | **0.70** | **8,106** | **HVAC** |
| CNG Residential Behavior | $ 155,328 | $ 155,328 | $ 247,856 | $ 381,305 | 1.60 | 2.45 | 15,000 | Units |
| SCG Residential Behavior | $ 159,689 | $ 159,689 | $ 247,856 | $ 381,305 | 1.55 | 2.39 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 315,016** | **$ 315,016** | **$ 495,713** | **$ 762,610** | **1.57** | | **30,000** | |
| CNG New Construction | $ 703,626 | $ 1,931,351 | $ 1,723,809 | $ 2,957,491 | 2.45 | 1.53 | 315 | Homes |
| SCG New Construction | $ 964,726 | $ 2,677,154 | $ 1,544,924 | $ 2,625,976 | 1.60 | 0.98 | 433 | Homes |
| **Subtotal: New Construction** | **$ 1,668,352** | **$ 4,608,505** | **$ 3,268,733** | **$ 5,583,468** | **1.96** | **1.21** | **748** | **Homes** |
| **Subtotal: Residential** | **$ 19,065,401** | **$ 33,046,777** | **$ 24,255,761** | **$ 43,682,468** | **1.27** | **1.32** | **49,892** | **Homes/Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,095,137 | $ 2,802,556 | $ 2,399,266 | $ 4,715,078 | 1.15 | 1.68 | 122 | Projects |
| SCG Energy Conscious Blueprint | $ 1,743,640 | $ 2,493,463 | $ 2,416,827 | $ 5,221,171 | 1.39 | 2.09 | 123 | Projects |
| **Subtotal: Lost Opportunity** | **$ 3,838,777** | **$ 5,296,019** | **$ 4,816,094** | **$ 9,936,249** | **1.25** | **1.88** | **246** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,192,975 | $ 2,645,337 | $ 1,801,144 | $ 2,920,606 | 1.51 | 1.10 | 22 | Projects |
| SCG Energy Opportunities | $ 1,146,268 | $ 2,835,206 | $ 2,074,627 | $ 3,360,319 | 1.81 | 1.19 | 26 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,339,243** | **$ 5,480,542** | **$ 3,875,772** | **$ 6,280,924** | **1.25** | **1.49** | **48** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | $ 690,456 | $ 1,402,789 | $ 3,266,095 | $ 5,084,983 | 4.73 | 3.62 | 23 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | $ 512,992 | $ 1,089,031 | $ 2,787,950 | $ 4,340,558 | 5.43 | 3.99 | 19 | Projects |
| **Subtotal: O&M** | **$ 1,203,447** | **$ 2,491,821** | **$ 6,054,045** | **$ 9,425,541** | **5.03** | **3.78** | **42** | **Projects** |
| CNG Small Business Energy Advantage | $ 322,674 | $ 603,412 | $ 670,022 | $ 1,092,437 | 2.08 | 1.81 | 36 | Projects |
| SCG Small Business Energy Advantage | $ 252,114 | $ 544,900 | $ 698,776 | $ 1,139,319 | 2.77 | 2.09 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 574,788** | **$ 1,148,312** | **$ 1,368,798** | **$ 2,231,756** | **2.38** | **1.94** | **73** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 7,956,256** | **$ 14,416,694** | **$ 16,114,708** | **$ 27,874,470** | **2.03** | **1.93** | **25,406** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 295,994 | | | | | | | |
| SCG Other Programs/Requirements | $ 295,994 | | | | | | | |
| **Subtotal** | **$ 591,988** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,561,484 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,554,480 | | | | | | | |
| **Subtotal** | **$ 3,115,964** | | | | | | | |
| **Subtotal: Other** | **$ 3,707,952** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 9,926,037 | $ 15,214,775 | $ 12,392,874 | $ 22,660,595 | | | 25,045 | |
| **SCG Residential** | $ 9,139,364 | $ 17,832,002 | $ 11,862,886 | $ 21,021,873 | | | 24,847 | |
| **Residential Total** | **$ 19,065,401** | **$ 33,046,777** | **$ 24,255,761** | **$ 43,682,468** | | | **49,892** | |
| **CNG C&I** | $ 4,301,242 | $ 7,454,094 | $ 8,136,528 | $ 13,813,103 | | | 203 | |
| **SCG C&I** | $ 3,655,014 | $ 6,962,600 | $ 7,978,180 | $ 14,061,367 | | | 206 | |
| **C&I Total** | **$ 7,956,256** | **$ 14,416,694** | **$ 16,114,708** | **$ 27,874,470** | | | **409** | |
| **CNG Other** | $ 1,857,478 | | | | | | | |
| **SCG Other** | $ 1,850,474 | | | | | | | |
| **Other Total** | **$ 3,707,952** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 16,084,757** | **$ 22,668,869** | **$ 20,529,402** | **$ 36,473,698** | | | **25,248** | |
| **SCG TOTAL** | **$ 14,644,852** | **$ 24,794,602** | **$ 19,841,066** | **$ 35,083,240** | | | **25,053** | |
| **GRAND TOTAL** | **$ 30,729,609** | **$ 47,463,471** | **$ 40,370,469** | **$ 71,556,938** | **1.31** | **1.51** | **50,301** | |

# Table B – Connecticut Natural Gas Costs and Benefits (2021) — continued

**Table B**

**2021 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

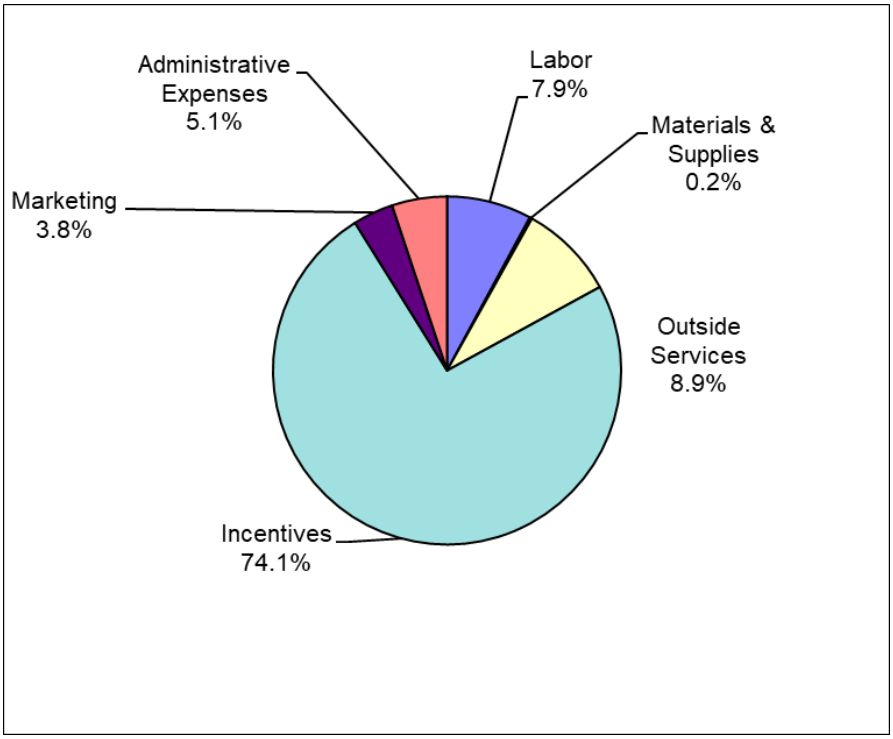
| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 315,401 | 6,822,682 | 3,179 | $ 13.05 | $ 0.60 | $ 1,295.07 | 32,455 | 702,054 | $ 126.86 | $ 5.86 |
| SCG HES-Income Eligible | 246,657 | 5,434,176 | 1,654 | $ 12.61 | $ 0.57 | $ 1,879.92 | 25,381 | 559,177 | $ 122.51 | $ 5.56 |
| **Subtotal: HES-Income Eligible** | **562,058** | **12,256,858** | **4,833** | **$ 12.86** | **$ 0.59** | **$ 1,495.21** | **57,836** | **1,261,231** | **$ 124.95** | **$ 5.73** |
| CNG Home Energy Solutions | 275,410 | 5,490,912 | 2,662 | $ 11.35 | $ 0.57 | $ 1,174.61 | 28,340 | 565,015 | $ 110.33 | $ 5.53 |
| SCG Home Energy Solutions | 161,917 | 3,434,509 | 1,602 | $ 10.84 | $ 0.51 | $ 1,095.07 | 16,661 | 353,411 | $ 105.32 | $ 4.97 |
| **Subtotal: Home Energy Solutions** | **437,327** | **8,925,421** | **4,264** | **$ 11.16** | **$ 0.55** | **$ 1,144.72** | **45,001** | **918,426** | **$ 108.48** | **$ 5.32** |
| CNG HVAC/Water Heating | 146,234 | 2,916,939 | 1,311 | $ 12.47 | $ 0.62 | $ 1,390.18 | 15,047 | 300,153 | $ 121.15 | $ 6.07 |
| SCG HVAC/Water Heating | 295,510 | 5,910,209 | 2,642 | $ 10.66 | $ 0.53 | $ 1,192.57 | 30,408 | 608,160 | $ 103.61 | $ 5.18 |
| **Subtotal: HVAC/Water Heating** | **441,744** | **8,827,148** | **3,953** | **$ 11.26** | **$ 0.56** | **$ 1,258.12** | **45,456** | **908,314** | **$ 109.42** | **$ 5.48** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.55 | $ 0.78 | | 10,298 | 20,596 | $ 15.08 | $ 7.54 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.60 | $ 0.80 | | 10,298 | 20,596 | $ 15.51 | $ 7.75 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.57** | **$ 0.79** | | **20,596** | **41,193** | **$ 15.29** | **$ 7.65** |
| CNG New Construction | 105,953 | 2,648,816 | 1,019 | $ 6.64 | $ 0.27 | $ 690.27 | 10,903 | 272,563 | $ 64.54 | $ 2.58 |
| SCG New Construction | 96,595 | 2,414,880 | 929 | $ 9.99 | $ 0.40 | $ 1,038.09 | 9,940 | 248,491 | $ 97.06 | $ 3.88 |
| **Subtotal: New Construction** | **202,548** | **5,063,696** | **1,949** | **$ 8.24** | **$ 0.33** | **$ 856.14** | **20,842** | **521,054** | **$ 80.05** | **$ 3.20** |
| **Subtotal: Residential** | **1,843,838** | **35,473,442** | **15,000** | **$ 10.34** | **$ 0.54** | **$ 1,271.06** | **189,731** | **3,650,217** | **$100.49** | **$ 5.22** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 223,020 | 3,047,380 | 3,341 | $ 9.39 | $ 0.69 | $ 627.02 | 22,949 | 313,575 | $ 91.30 | $ 6.68 |
| SCG Energy Conscious Blueprint | 224,652 | 3,069,685 | 3,366 | $ 7.76 | $ 0.57 | $ 518.04 | 23,117 | 315,871 | $ 75.43 | $ 5.52 |
| **Subtotal: Lost Opportunity** | **447,672** | **6,117,065** | **6,707** | **$ 8.57** | **$ 0.63** | **$ 572.33** | **46,065** | **629,446** | **$ 83.33** | **$ 6.10** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 168,360 | 1,965,699 | 1,193 | $ 7.09 | $ 0.61 | $ 1,000.33 | 17,324 | 202,270 | $ 68.86 | $ 5.90 |
| SCG Energy Opportunities | 195,785 | 2,257,354 | 1,387 | $ 5.85 | $ 0.51 | $ 826.53 | 20,146 | 232,282 | $ 56.90 | $ 4.93 |
| **Subtotal: Energy Opportunities** | **364,145** | **4,223,053** | **2,579** | **$ 6.42** | **$ 0.55** | **$ 906.89** | **37,471** | **434,552** | **$ 62.43** | **$ 5.38** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | 426,784 | 2,969,475 | 1,431 | $ 1.62 | $ 0.23 | $ 482.58 | 43,916 | 305,559 | $ 15.72 | $ 2.26 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | 364,304 | 2,534,753 | 1,221 | $ 1.41 | $ 0.20 | $ 420.04 | 37,487 | 260,826 | $ 13.68 | $ 1.97 |
| **Subtotal: O&M** | **791,088** | **5,504,228** | **2,652** | **$ 1.52** | **$ 0.22** | **$ 453.78** | **81,403** | **566,385** | **$ 14.78** | **$ 2.12** |
| CNG Small Business Energy Advantage | 70,050 | 728,073 | 1,689 | $ 4.61 | $ 0.44 | $ 191.05 | 7,208 | 74,919 | $ 44.77 | $ 4.31 |
| SCG Small Business Energy Advantage | 73,056 | 759,319 | 1,761 | $ 3.45 | $ 0.33 | $ 143.13 | 7,517 | 78,134 | $ 33.54 | $ 3.23 |
| **Subtotal: Small Business Energy Advantage** | **143,105** | **1,487,392** | **3,450** | **$ 4.02** | **$ 0.39** | **$ 166.59** | **14,726** | **153,053** | **$ 39.03** | **$ 3.76** |
| **Subtotal: Commercial & Industrial** | **1,746,010** | **17,331,738** | **15,389** | **$ 4.56** | **$ 0.46** | **$ 517.00** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 943,078 | 18,079,509 | 8,172 | $ 10.53 | $ 0.55 | $ 1,214.66 | 97,043 | 1,860,381 | $ 102.29 | $ 5.34 |
| **SCG Residential** | 900,760 | 17,393,934 | 6,828 | $ 10.15 | $ 0.53 | $ 1,338.56 | 92,688 | 1,789,836 | $ 98.60 | $ 5.11 |
| **Residential Total** | **1,843,838** | **35,473,442** | **15,000** | **$ 10.34** | **$ 0.54** | **$ 1,271.06** | **189,731** | **3,650,217** | **$ 100.49** | **$ 5.22** |
| **CNG C&I** | 888,214 | 8,710,627 | 7,654 | $ 4.84 | $ 0.49 | $ 561.98 | 91,397 | 896,324 | $ 47.06 | $ 4.80 |
| **SCG C&I** | 857,797 | 8,621,111 | 7,735 | $ 4.26 | $ 0.42 | $ 472.50 | 88,267 | 887,112 | $ 41.41 | $ 4.12 |
| **C&I Total** | **1,746,010** | **17,331,738** | **15,389** | **$ 4.56** | **$ 0.46** | **$ 517.00** | **179,664** | **1,783,436** | **$ 44.28** | **$ 4.46** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | - | - | - | | | | **0** | **0** | | |
| **CNG TOTAL** | **1,831,291** | **26,790,136** | **15,826** | **$ 8.78** | **$ 0.60** | **$ 1,016.38** | **188,440** | **2,756,705** | **$ 85.36** | **$ 5.83** |
| **SCG TOTAL** | **1,758,557** | **26,015,045** | **14,563** | **$ 8.33** | **$ 0.56** | **$ 1,005.61** | **180,955** | **2,676,948** | **$ 80.93** | **$ 5.47** |
| **GRAND TOTAL** | **3,589,848** | **52,805,181** | **30,389** | **$ 8.56** | **$ 0.58** | **$ 1,011.21** | **369,395** | **5,433,653** | **$ 83.19** | **$ 5.66** |

## Table C – Connecticut Natural Gas (2019)

### Table C
### CNG 2019 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 73,175 | $ 1,000 | $ 4,632 | $ 634,643 | $ 4,000 | $ 2,500 | $ 719,950 |
| Home Energy Solutions (HES) | $ 206,626 | $ 2,000 | $ 344,103 | $ 2,576,417 | $ 103,333 | $ 4,027 | $ 3,236,505 |
| HVAC/Water Heating | $ 62,466 | $ 6,300 | $ 139,672 | $ 1,587,750 | $ 25,000 | $ 3,000 | $ 1,824,189 |
| HES-Income Eligible | $ 205,967 | $ 2,500 | $ 53,800 | $ 3,879,556 | $ 62,000 | $ 2,600 | $ 4,206,424 |
| Residential Behavior | $ 17,848 | $ - | $ 138,380 | $ - | $ - | $ - | $ 156,228 |
| **Subtotal: Residential** | **$ 566,082** | **$ 11,800** | **$ 680,587** | **$ 8,678,367** | **$ 194,333** | **$ 12,127** | **$ 10,143,296** |
| **COMMERCIAL & INDUSTRIAL LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 118,968 | $ 10,251 | $ 88,470 | $ 1,714,964 | $ 198,173 | $ 20,502 | $ 2,151,328 |
| **Subtotal: C&I - Lost Opportunity** | **$ 118,968** | **$ 10,251** | **$ 88,470** | **$ 1,714,964** | **$ 198,173** | **$ 20,502** | **$ 2,151,328** |
| **COMMERCIAL & INDUSTRIAL LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 118,968 | $ 5,000 | $ 30,316 | $ 958,612 | $ 144,602 | $ 5,000 | $ 1,262,498 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 96,377 | $ 5,000 | $ 45,612 | $ 530,039 | $ 49,292 | $ 7,500 | $ 733,821 |
| **Subtotal: C&I - Lost Opportunity** | **$ 215,345** | **$ 10,000** | **$ 75,928** | **$ 1,488,651** | **$ 193,894** | **$ 12,500** | **$ 1,996,318** |
| Small Business Energy Advantage | $ 76,396 | $ 2,000 | $ 10,250 | $ 164,718 | $ 21,372 | $ 60,000 | $ 334,736 |
| **Subtotal: C&I** | **$ 410,709** | **$ 22,251** | **$ 174,649** | **$ 3,368,334** | **$ 413,439** | **$ 93,002** | **$ 4,482,383** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Educate the Students | $ 7,139 | $ 374 | $ 14,015 | $ - | $ 862 | $ 469 | $ 22,859 |
| Educate the Workforce | $ 1,785 | $ 1,147 | $ 7,394 | $ - | $ - | $ 3,345 | $ 13,671 |
| **Subtotal: Education** | **$ 18,626** | **$ 1,990** | **$ 50,196** | **$ -** | **$ 2,519** | **$ 28,995** | **$ 102,326** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 156,292** | **$ -** | **$ -** | **$ -** | **$ 156,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 141,135 | $ - | $ 9,328 | $ - | $ - | $ - | $ 150,463 |
| Marketing Plan | $ - | $ - | $ 14,630 | $ - | $ - | $ - | $ 14,630 |
| Information Technology | $ 50,210 | $ - | $ 87,321 | $ - | $ - | $ - | $ 137,531 |
| Planning | $ 96,583 | $ - | $ - | $ - | $ - | $ - | $ 96,583 |
| Evaluation Measurement and Verification | $ - | $ - | $ 217,523 | $ - | $ - | $ - | $ 217,523 |
| Evaluation Administrator | $ - | $ - | $ 18,667 | $ - | $ - | $ - | $ 18,667 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 31,893 | $ - | $ - | $ - | $ 31,893 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 697,546 | $ 697,546 |
| **Subtotal: Other** | **$ 287,928** | **$ -** | **$ 389,362** | **$ -** | **$ -** | **$ 697,546** | **$ 1,374,837** |
| **TOTAL BUDGET** | **$ 1,283,344** | **$ 36,041** | **$ 1,451,086** | **$ 12,046,700** | **$ 610,291** | **$ 831,670** | **$ 16,259,133** |

## Table C Pie Chart - Connecticut Natural Gas (2019)



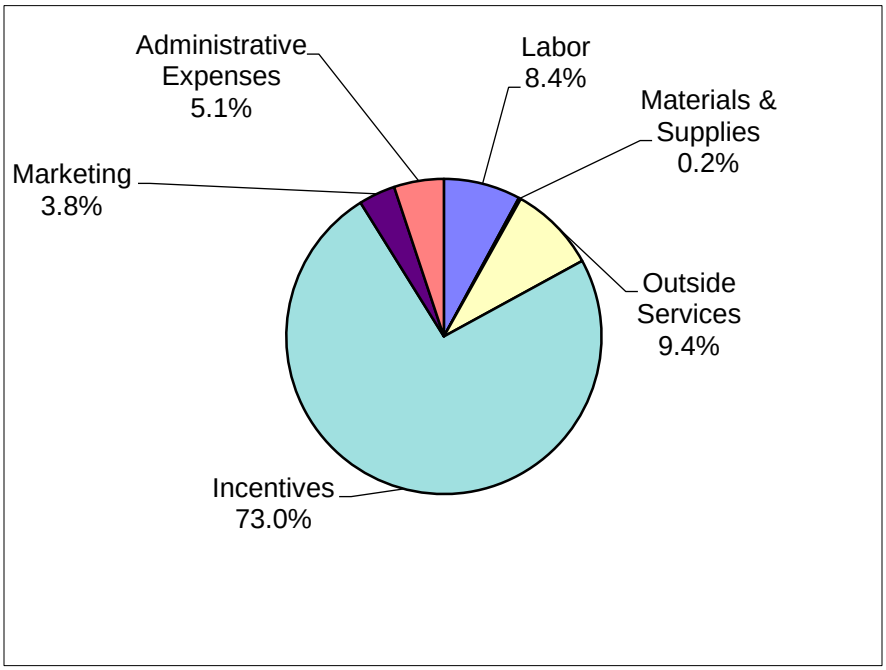

| Expense Classes | Budget | % of Budget |
|---|---|---|
| | | |
| Labor | $ 1,283,344 | 7.9% |
| Materials & Supplies | $ 36,041 | 0.2% |
| Outside Services | $ 1,451,086 | 8.9% |
| Incentives | $ 12,046,700 | 74.1% |
| Marketing | $ 610,291 | 3.8% |
| Administrative Expenses | $ 831,670 | 5.1% |
| | | |
| **Total** | **$16,259,133** | **100.00%** |

## Table C – Connecticut Natural Gas (2020)

### Table C
### CNG 2020 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 75,370 | $ 1,000 | $ 4,632 | $ 607,531 | $ 4,000 | $ 2,500 | $ 695,034 |
| Home Energy Solutions (HES) | $ 226,197 | $ 2,000 | $ 267,733 | $ 2,489,422 | $ 103,333 | $ 4,027 | $ 3,092,712 |
| HVAC/Water Heating | $ 64,340 | $ 6,300 | $ 139,672 | $ 1,566,670 | $ 25,000 | $ 3,000 | $ 1,804,983 |
| HES-Income Eligible | $ 225,520 | $ 2,500 | $ 53,800 | $ 3,750,065 | $ 62,000 | $ 2,600 | $ 4,096,485 |
| Residential Behavior | $ 18,383 | $ - | $ 135,062 | $ - | $ - | $ - | $ 153,445 |
| **Subtotal: Residential** | **$ 609,810** | **$ 11,800** | **$ 600,899** | **$ 8,413,689** | **$ 194,333** | **$ 12,127** | **$ 9,842,659** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 122,537 | $ 10,251 | $ 50,970 | $ 1,657,490 | $ 198,173 | $ 20,502 | $ 2,059,924 |
| **Subtotal: C&I - Lost Opportunity** | **$ 122,537** | **$ 10,251** | **$ 50,970** | **$ 1,657,490** | **$ 198,173** | **$ 20,502** | **$ 2,059,924** |
| **C&I LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 122,537 | $ 5,000 | $ 30,316 | $ 869,304 | $ 144,602 | $ 5,000 | $ 1,176,759 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 99,268 | $ 5,000 | $ 8,112 | $ 513,178 | $ 49,292 | $ 7,500 | $ 682,351 |
| **Subtotal: C&I - Large Retrofit** | **$ 221,805** | **$ 10,000** | **$ 38,428** | **$ 1,382,483** | **$ 193,894** | **$ 12,500** | **$ 1,859,110** |
| Small Business Energy Advantage | $ 68,668 | $ 2,000 | $ 10,250 | $ 156,536 | $ 21,372 | $ 60,000 | $ 318,826 |
| **Subtotal: C&I** | **$ 413,010** | **$ 22,251** | **$ 99,649** | **$ 3,196,509** | **$ 413,439** | **$ 93,002** | **$ 4,237,860** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ 150,000 | $ - | $ - | $ - | $ 150,000 |
| Educate the Students | $ 8,303 | $ 374 | $ 32,671 | $ - | $ 862 | $ 2,954 | $ 45,164 |
| Educate the Workforce | $ 7,039 | $ 1,147 | $ 25,217 | $ - | $ - | $ 1,631 | $ 35,034 |
| **Subtotal: Education** | **$ 25,044** | **$ 1,990** | **$ 236,675** | **$ -** | **$ 2,519** | **$ 29,766** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 156,292** | **$ -** | **$ -** | **$ -** | **$ 156,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 145,471 | $ - | $ 9,383 | $ - | $ - | $ - | $ 154,854 |
| Marketing Plan | $ - | $ - | $ 31,100 | $ - | $ - | $ - | $ 31,100 |
| Information Technology | $ 51,716 | $ - | $ 87,321 | $ - | $ - | $ - | $ 139,037 |
| Planning | $ 99,480 | $ - | $ - | $ - | $ - | $ - | $ 99,480 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 682,077 | $ 682,077 |
| **Subtotal: Other** | **$ 296,668** | **$ -** | **$ 401,137** | **$ -** | **$ -** | **$ 682,077** | **$ 1,379,882** |
| **TOTAL BUDGET** | **$ 1,344,532** | **$ 36,041** | **$ 1,494,652** | **$ 11,610,198** | **$ 610,291** | **$ 816,972** | **$ 15,912,687** |

## Table C Pie Chart – Connecticut Natural Gas (2020)



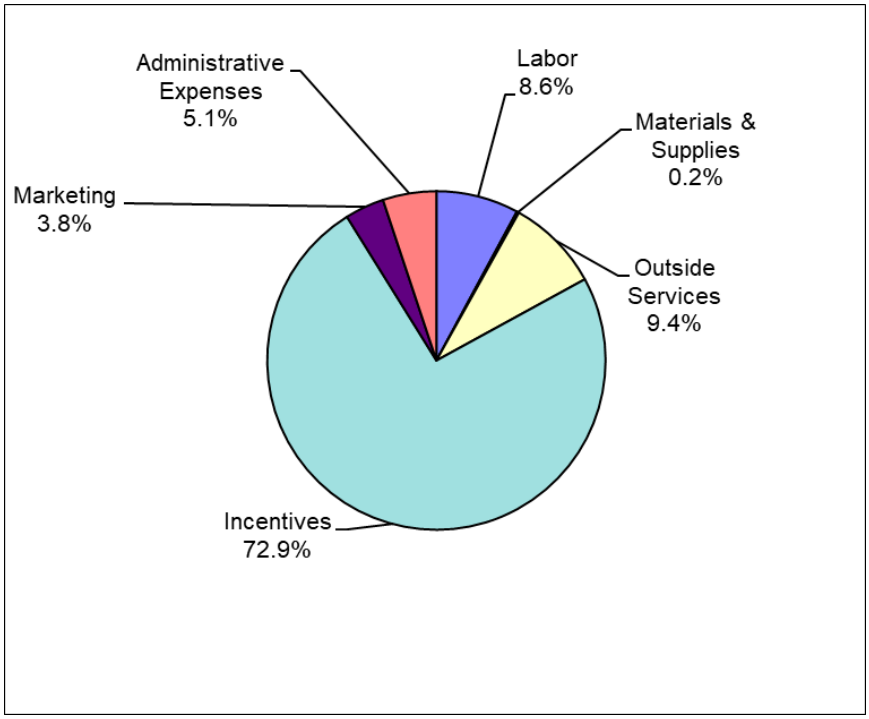

| Expense Classes | Budget | % of Budget |
|---|---|---|
| | | |
| Labor | $ 1,344,532 | 8.4% |
| Materials & Supplies | $ 36,041 | 0.2% |
| Outside Services | $ 1,494,652 | 9.4% |
| Incentives | $11,610,198 | 73.0% |
| Marketing | $ 610,291 | 3.8% |
| Administrative Expenses | $ 816,972 | 5.1% |
| | | |
| **Total** | **$15,912,687** | **100.00%** |

## Table C – Connecticut Natural Gas (2021)

### Table C
### CNG 2021 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 77,631 | $ 1,000 | $ 4,632 | $ 613,862 | $ 4,000 | $ 2,500 | $ 703,626 |
| Home Energy Solutions (HES) | $ 232,983 | $ 2,000 | $ 267,733 | $ 2,516,699 | $ 103,333 | $ 4,027 | $ 3,126,775 |
| HVAC/Water Heating | $ 66,270 | $ 6,300 | $ 139,672 | $ 1,582,725 | $ 25,000 | $ 3,000 | $ 1,822,968 |
| HES-Income Eligible | $ 232,285 | $ 2,500 | $ 53,800 | $ 3,764,155 | $ 62,000 | $ 2,600 | $ 4,117,341 |
| Residential Behavior | $ 18,935 | $ - | $ 136,393 | $ - | $ - | $ - | $ 155,328 |
| **Subtotal: Residential** | **$ 628,105** | **$ 11,800** | **$ 602,230** | **$ 8,477,442** | **$ 194,333** | **$ 12,127** | **$ 9,926,037** |
| **COMMERCIAL & INDUSTRIAL LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 126,213 | $ 10,251 | $ 50,970 | $ 1,689,027 | $ 198,173 | $ 20,502 | $ 2,095,137 |
| **Subtotal: C&I - Lost Opportunity** | **$ 126,213** | **$ 10,251** | **$ 50,970** | **$ 1,689,027** | **$ 198,173** | **$ 20,502** | **$ 2,095,137** |
| **COMMERCIAL & INDUSTRIAL LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 126,213 | $ 5,000 | $ 30,316 | $ 881,844 | $ 144,602 | $ 5,000 | $ 1,192,975 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 102,246 | $ 5,000 | $ 8,112 | $ 518,305 | $ 49,292 | $ 7,500 | $ 690,456 |
| **Subtotal: C&I - Lost Opportunity** | **$ 228,460** | **$ 10,000** | **$ 38,428** | **$ 1,400,149** | **$ 193,894** | **$ 12,500** | **$ 1,883,431** |
| Small Business Energy Advantage | $ 70,728 | $ 2,000 | $ 10,250 | $ 158,324 | $ 21,372 | $ 60,000 | $ 322,674 |
| **Subtotal: C&I** | **$ 425,401** | **$ 22,251** | **$ 99,649** | **$ 3,247,500** | **$ 413,439** | **$ 93,002** | **$ 4,301,242** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ 150,000 | $ - | $ - | $ - | $ 150,000 |
| Educate the Students | $ 8,303 | $ 374 | $ 32,671 | $ - | $ 862 | $ 2,954 | $ 45,164 |
| Educate the Workforce | $ 7,039 | $ 1,147 | $ 25,217 | $ - | $ - | $ 1,631 | $ 35,034 |
| **Subtotal: Education** | **$ 25,044** | **$ 1,990** | **$ 236,675** | **$ -** | **$ 2,519** | **$ 29,766** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 156,292** | **$ -** | **$ -** | **$ -** | **$ 156,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 149,835 | $ - | $ 9,383 | $ - | $ - | $ - | $ 159,218 |
| Marketing Plan | $ - | $ - | $ 40,100 | $ - | $ - | $ - | $ 40,100 |
| Information Technology | $ 53,268 | $ - | $ 87,321 | $ - | $ - | $ - | $ 140,589 |
| Planning | $ 102,465 | $ - | $ - | $ - | $ - | $ - | $ 102,465 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 689,487 | $ 689,487 |
| **Subtotal: Other** | **$ 305,568** | **$ -** | **$ 410,137** | **$ -** | **$ -** | **$ 689,487** | **$ 1,405,192** |
| **TOTAL BUDGET** | **$ 1,384,117** | **$ 36,041** | **$ 1,504,983** | **$ 11,724,942** | **$ 610,291** | **$ 824,382** | **$ 16,084,757** |

## Table C Pie Chart - Connecticut Natural Gas (2021)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| | | | |
| Labor | $ | 1,384,117 | 8.6% |
| Materials & Supplies | $ | 36,041 | 0.2% |
| Outside Services | $ | 1,504,983 | 9.4% |
| Incentives | $ | 11,724,942 | 72.9% |
| Marketing | $ | 610,291 | 3.8% |
| Administrative Expenses | $ | 824,382 | 5.1% |
| | | | |
| **Total** | **$** | **16,084,757** | **100.00%** |

# Table D – Connecticut Natural Gas Historical and Projected Expenditures

**Table D**

**CNG Historical and Projected $**

| Expenditures $ (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 1,035 | $ 838 | $ 904 | $ 2,912 | $ 4,513 | $ 4,256 | $ 5,307 | $ 4,987 | $ 4,206 | $ 4,096 | $ 4,117 |
| Home Energy Solutions (HES) | $ 1,518 | $ 1,548 | $ 2,014 | $ 4,584 | $ 3,342 | $ 2,439 | $ 2,356 | $ 1,846 | $ 3,237 | $ 3,093 | $ 3,127 |
| HVAC/Water Heating | $ - | $ - | $ - | $ - | $ - | $ 1,870 | $ 1,746 | $ 2,051 | $ 1,824 | $ 1,805 | $ 1,823 |
| New Construction, Additions & Major Renovations | $ 905 | $ 477 | $ 1,374 | $ 448 | $ 562 | $ 710 | $ 427 | $ 480 | $ 720 | $ 695 | $ 704 |
| Residential Behavior | | | | | | $ 165 | $ 32 | $ 138 | $ 156 | $ 153 | $ 155 |
| Water Heating | $ 45 | $ 45 | $ 22 | $ 97 | $ 344 | | | | | | |
| **Subtotal: Residential** | **$ 3,503** | **$ 2,908** | **$ 4,314** | **$ 8,041** | **$ 8,761** | **$ 9,440** | **$ 9,868** | **$ 9,502** | **$ 10,143** | **$ 9,843** | **$ 9,926** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 873 | $ 1,262 | $ 1,177 | $ 1,885 | $ 1,151 | $ 2,120 | $ 2,297 | $ 1,902 | $ 2,151 | $ 2,060 | $ 2,095 |
| **Total - Lost Opportunity** | **$ 873** | **$ 1,262** | **$ 1,177** | **$ 1,885** | **$ 1,151** | **$ 2,120** | **$ 2,297** | **$ 1,902** | **$ 2,151** | **$ 2,060** | **$ 2,095** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 471 | $ 778 | $ 1,536 | $ 814 | $ 1,150 | $ 854 | $ 1,286 | $ 716 | $ 1,262 | $ 1,177 | $ 1,193 |
| Business & Energy Sustainability (O&M, RetroCx, BSC) | $ 29 | $ 160 | $ 90 | $ 385 | $ 78 | $ 312 | $ 602 | $ 1,012 | $ 734 | $ 682 | $ 690 |
| Process Retrofit Project | | | | | | | | | | | |
| **Total - C&I Large Retrofit** | **$ 500** | **$ 938** | **$ 1,626** | **$ 1,199** | **$ 1,228** | **$ 1,166** | **$ 1,888** | **$ 1,728** | **$ 1,996** | **$ 1,859** | **$ 1,883** |
| Small Business Energy Advantage | $ - | $ 51 | $ 211 | $ 199 | $ 192 | $ 195 | $ 138 | $ 212 | $ 335 | $ 319 | $ 323 |
| **Subtotal: C&I** | **$ 1,374** | **$ 2,251** | **$ 3,014** | **$ 3,283** | **$ 2,571** | **$ 3,481** | **$ 4,323** | **$ 3,841** | **$ 4,482** | **$ 4,238** | **$ 4,301** |
| **OTHER-EDUCATION** | | | | | | | | | | | |
| Educate the Public | $ - | $ - | $ - | $ - | $ - | $ 200 | $ 186 | $ 68 | $ 66 | $ 66 | $ 66 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ - | $ 94 | $ 34 | $ 33 | $ - | $ 150 | $ 150 |
| Educate the Students | $ - | $ - | $ - | $ - | $ - | $ 33 | $ 68 | $ 26 | $ 23 | $ 45 | $ 45 |
| Educate the Workforce | $ - | $ - | $ - | $ - | $ - | $ 30 | $ 14 | $ 12 | $ 14 | $ 35 | $ 35 |
| Smart Living Center / Science Center | $ - | $ - | $ - | $ 167 | $ 100 | $ - | $ - | $ - | $ - | $ - | $ - |
| EESmarts/K-12 Education | $ - | $ - | $ - | $ 26 | $ 70 | $ - | $ - | $ - | $ - | $ - | $ - |
| Clean Energy Communities | $ - | $ - | $ 6 | $ 41 | $ 57 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Education** | **$ -** | **$ -** | **$ 6** | **$ 234** | **$ 227** | **$ 357** | **$ 302** | **$ 139** | **$ 102** | **$ 296** | **$ 296** |
| **OTHER-PROGRAMS/REQUIREMENTS** | | | | | | | | | | | |
| Financing Support - Residential | $ 53 | $ 57 | $ 56 | $ 56 | $ 77 | $ 59 | $ 67 | $ - | $ 86 | $ 86 | $ 86 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - | $ (7) | $ 23 | $ - | $ 20 | $ 20 | $ 20 |
| Research, Development & Demonstration | $ - | $ - | $ 79 | $ - | $ - | $ 7 | $ 16 | $ 55 | $ 50 | $ 50 | $ 50 |
| Institute for Sustainable Energy | $ - | $ - | $ - | $ 37 | $ 41 | $ - | $ - | $ - | $ - | $ - | $ - |
| ESPC Project Manager | $ - | $ - | $ - | $ 6 | $ 3 | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Loan Program | $ - | $ - | $ 18 | $ - | $ 9 | $ - | $ - | $ - | $ - | $ - | $ - |
| EE Loan Defaults | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Self Funding | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Funding Requests | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Programs/Requirements** | **$ 53** | **$ 57** | **$ 153** | **$ 99** | **$ 130** | **$ 59** | **$ 106** | **$ 55** | **$ 156** | **$ 156** | **$ 156** |
| **OTHER-ADMINSTRATIVE & PLANNING** | | | | | | | | | | | |
| Administration | $ - | $ - | $ 90 | $ 130 | $ 237 | $ 130 | $ 172 | $ 143 | $ 150 | $ 155 | $ 159 |
| Marketing Plan | $ - | $ - | $ - | $ 97 | $ 85 | $ 109 | $ 73 | $ 31 | $ 15 | $ 31 | $ 40 |
| Planning | $ 28 | $ 234 | $ 145 | $ 99 | $ 101 | $ 141 | $ 169 | $ 108 | $ 97 | $ 99 | $ 102 |
| Evaluation Measurement and Verification | $ 18 | $ 128 | $ 36 | $ 132 | $ 231 | $ 200 | $ 200 | $ 218 | $ 218 | $ 200 | $ 200 |
| Evaluation Administrator | $ - | $ - | $ - | $ 26 | $ 26 | $ 20 | $ 20 | $ 19 | $ 19 | $ 20 | $ 20 |
| Information Technology | $ 31 | $ 32 | $ 49 | $ 101 | $ 141 | $ 109 | $ 107 | $ 150 | $ 138 | $ 139 | $ 141 |
| Energy Efficiency Board Consultants | $ 12 | $ 22 | $ 43 | $ 24 | $ 63 | $ 43 | $ 43 | $ 32 | $ 32 | $ 43 | $ 43 |
| Audits - Financial and Operational | $ - | $ - | $ - | $ - | $ - | $ - | $ 10 | $ 4 | $ 10 | $ 10 | $ 10 |
| Performance Management Incentive | $ - | $ - | $ 601 | $ 598 | $ 733 | $ 687 | $ 896 | $ 877 | $ 698 | $ 682 | $ 689 |
| **Subtotal: Administrative & Planning** | **$ 89** | **$ 417** | **$ 964** | **$ 1,208** | **$ 1,617** | **$ 1,439** | **$ 1,690** | **$ 1,582** | **$ 1,375** | **$ 1,380** | **$ 1,405** |
| **TOTAL** | **$ 5,019** | **$ 5,633** | **$ 8,450** | **$ 12,865** | **$ 13,306** | **$ 14,776** | **$ 16,289** | **$ 15,120** | **$ 16,259** | **$ 15,913** | **$ 16,085** |

# Table D1 – Connecticut Natural Gas Annual & Lifetime Savings CCF (2011-2021)

**Table D1**

**CNG Historical and Projected Annual and Lifetime ccf**

| Annual ccf (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | 211 | 124 | 95 | 423 | 451 | 594 | 473 | 442 | 327 | 316 | 315 |
| Home Energy Solutions (HES) | 196 | 269 | 403 | 607 | 486 | 278 | 243 | 216 | 282 | 272 | 275 |
| HVAC/Water Heating | - | - | - | - | - | 257 | 215 | 269 | 147 | 145 | 146 |
| New Construction, Additions & Major Renovations | 35 | 34 | 74 | 90 | 49 | 96 | 97 | 95 | 110 | 105 | 106 |
| Residential Behavior | | | | | | 89 | 62 | - | 100 | 100 | 100 |
| Water Heating | 14 | 8 | 1 | 16 | 44 | - | - | - | - | - | - |
| **Subtotal: Residential** | **456** | **435** | **573** | **1,136** | **1,030** | **1,314** | **1,090** | **1,022** | **965** | **938** | **943** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 154 | 308 | 399 | 274 | 256 | 403 | 528 | 193 | 259 | 234 | 223 |
| **Total - Lost Opportunity** | **154** | **308** | **399** | **274** | **256** | **403** | **528** | **193** | **259** | **234** | **223** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 140 | 217 | 403 | 264 | 203 | 222 | 307 | 427 | 210 | 178 | 168 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 34 | 200 | 91 | 245 | 133 | 134 | 195 | 392 | 500 | 500 | 427 |
| **Total - C&I Large Retrofit** | **174** | **417** | **494** | **509** | **336** | **356** | **502** | **819** | **709** | **677** | **595** |
| Small Business Energy Advantage | - | 19 | 33 | 14 | 40 | 16 | 48 | 24 | 83 | 74 | 70 |
| **Subtotal: C&I** | **328** | **744** | **926** | **797** | **632** | **775** | **1,078** | **1,036** | **1,052** | **986** | **888** |
| **TOTAL** | **783** | **1,180** | **1,500** | **1,934** | **1,662** | **2,089** | **2,168** | **2,058** | **2,017** | **1,923** | **1,831** |

| Lifetime ccf (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | 2,752 | 2,500 | 1,612 | 8,285 | 8,660 | 12,047 | 9,848 | 9,235 | 7,063 | 6,828 | 6,823 |
| Home Energy Solutions (HES) | 3,416 | 4,997 | 7,461 | 12,033 | 9,870 | 5,652 | 4,944 | 4,367 | 5,621 | 5,431 | 5,491 |
| HVAC/Water Heating | - | - | - | - | - | 5,114 | 4,264 | 5,369 | 2,926 | 2,887 | 2,917 |
| New Construction, Additions & Major Renovations | 878 | 820 | 1,675 | 2,078 | 1,116 | 2,384 | 2,414 | 2,261 | 2,738 | 2,621 | 2,649 |
| Residential Behavior | | | | | | 232 | 162 | - | 200 | 200 | 200 |
| Water Heating | 280 | 146 | 25 | 285 | 809 | - | - | - | - | - | - |
| **Subtotal: Residential** | **7,325** | **8,463** | **10,773** | **22,681** | **20,455** | **25,430** | **21,632** | **21,232** | **18,549** | **17,968** | **18,080** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 2,343 | 4,294 | 6,670 | 4,233 | 4,136 | 6,233 | 8,415 | 2,926 | 3,543 | 3,200 | 3,047 |
| **Total - Lost Opportunity** | **2,343** | **4,294** | **6,670** | **4,233** | **4,136** | **6,233** | **8,415** | **2,926** | **3,543** | **3,200** | **3,047** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 1,483 | 2,094 | 4,517 | 2,793 | 2,476 | 2,331 | 3,541 | 4,411 | 2,416 | 2,048 | 1,966 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 327 | 1,172 | 466 | 1,700 | 889 | 729 | 1,041 | 2,037 | 3,477 | 2,636 | 2,969 |
| **Total - C&I Large Retrofit** | **1,809** | **3,267** | **4,983** | **4,493** | **3,365** | **3,060** | **4,582** | **6,448** | **5,893** | **4,683** | **4,935** |
| Small Business Energy Advantage | - | 193 | 442 | 217 | 485 | 181 | 592 | 277 | 867 | 770 | 728 |
| **Subtotal: C&I** | **4,153** | **7,753** | **12,095** | **8,943** | **7,986** | **9,474** | **13,589** | **9,651** | **10,302** | **8,653** | **8,711** |
| **TOTAL** | **11,478** | **16,216** | **22,868** | **31,624** | **28,441** | **34,904** | **35,221** | **30,883** | **28,852** | **26,621** | **26,790** |

# Table D2 – Connecticut Natural Gas Annual & Lifetime Cost Rates $/CCF (2011-2021)

**Table D2**

**CNG Historical and Projected Annual and Lifetime Cost Rates**

**Annual $/ccf**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 4.906 | $ 6.734 | $ 9.464 | $ 6.884 | $ 10.007 | $ 7.165 | $ 11.220 | $ 11.283 | $ 12.882 | $ 12.979 | $ 13.054 |
| Home Energy Solutions (HES) | $ 7.757 | $ 5.748 | $ 4.998 | $ 7.552 | $ 6.877 | $ 8.773 | $ 9.695 | $ 8.547 | $ 11.479 | $ 11.352 | $ 11.353 |
| HVAC/Water Heating | | | | | | $ 7.276 | $ 8.121 | $ 7.625 | $ 12.435 | $ 12.470 | $ 12.466 |
| New Construction, Additions & Major Renovations | $25.790 | $14.046 | $ 18.663 | $ 4.978 | $ 11.469 | $ 7.396 | $ 4.402 | $ 5.050 | $ 6.573 | $ 6.628 | $ 6.641 |
| Residential Behavior | | | | | | $ 1.854 | $ 0.516 | #DIV/0! | $ 1.561 | $ 1.533 | $ 1.552 |
| Water Heating | $ 3.218 | $ 5.900 | $ 17.200 | $ 6.013 | $ 7.818 | | | | | | |
| **Subtotal: Residential** | **$ 7.687** | **$ 6.680** | **$ 7.523** | **$ 7.077** | **$ 8.506** | **$ 7.184** | **$ 9.053** | **$ 9.297** | **$ 10.514** | **$ 10.496** | **$ 10.525** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 5.688 | $ 4.093 | $ 2.950 | $ 6.880 | $ 4.496 | $ 5.261 | $ 4.350 | $ 9.853 | $ 8.298 | $ 8.796 | $ 9.394 |
| **Total - Lost Opportunity** | **$ 5.688** | **$ 4.093** | **$ 2.950** | **$ 6.880** | **$ 4.496** | **$ 5.261** | **$ 4.350** | **$ 9.853** | **$ 8.298** | **$ 8.796** | **$ 9.394** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 3.352 | $ 3.585 | $ 3.811 | $ 3.083 | $ 5.665 | $ 3.847 | $ 4.189 | $ 1.677 | $ 6.025 | $ 6.626 | $ 7.086 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 0.876 | $ 0.799 | $ 0.989 | $ 1.571 | $ 0.586 | $ 2.328 | $ 3.087 | $ 2.581 | $ 1.469 | $ 1.366 | $ 1.618 |
| **Total - C&I Large Retrofit** | **$ 2.875** | **$ 2.250** | **$ 3.291** | **$ 2.356** | **$ 3.655** | **$ 3.275** | **$ 3.761** | **$ 2.110** | **$ 2.815** | **$ 2.745** | **$ 3.165** |
| Small Business Energy Advantage | $ - | $ 2.676 | $ 6.337 | $ 13.808 | $ 4.800 | $ 12.188 | $ 2.875 | $ 8.831 | $ 4.012 | $ 4.302 | $ 4.606 |
| **Subtotal: C&I** | **$ 4.194** | **$ 3.024** | **$ 3.254** | **$ 4.117** | **$ 4.068** | **$ 4.492** | **$ 4.010** | **$ 3.708** | **$ 4.261** | **$ 4.300** | **$ 4.843** |

**Lifetime $/ccf**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 0.376 | $ 0.335 | $ 0.561 | $ 0.351 | $ 0.521 | $ 0.353 | $ 0.539 | $ 0.540 | $ 0.596 | $ 0.600 | $ 0.603 |
| Home Energy Solutions (HES) | $ 0.444 | $ 0.310 | $ 0.270 | $ 0.381 | $ 0.339 | $ 0.432 | $ 0.477 | $ 0.423 | $ 0.576 | $ 0.569 | $ 0.569 |
| HVAC/Water Heating | | | | | | $ 0.366 | $ 0.409 | $ 0.382 | $ 0.623 | $ 0.625 | $ 0.625 |
| New Construction, Additions & Major Renovations | $ 1.032 | $ 0.582 | $ 0.821 | $ 0.216 | $ 0.504 | $ 0.298 | $ 0.177 | $ 0.212 | $ 0.263 | $ 0.265 | $ 0.266 |
| Residential Behavior | | | | | | $ 0.711 | $ 0.198 | #DIV/0! | $ 0.781 | $ 0.767 | $ 0.776 |
| Water Heating | $ 0.161 | $ 0.306 | $ 0.860 | $ 0.341 | $ 0.425 | | | | | | |
| **Subtotal: Residential** | **$ 0.478** | **$ 0.344** | **$ 0.400** | **$ 0.355** | **$ 0.428** | **$ 0.371** | **$ 0.456** | **$ 0.448** | **$ 0.547** | **$ 0.548** | **$ 0.549** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.373 | $ 0.294 | $ 0.176 | $ 0.445 | $ 0.278 | $ 0.340 | $ 0.273 | $ 0.650 | $ 0.607 | $ 0.644 | $ 0.688 |
| **Total - Lost Opportunity** | **$ 0.373** | **$ 0.294** | **$ 0.176** | **$ 0.445** | **$ 0.278** | **$ 0.340** | **$ 0.273** | **$ 0.650** | **$ 0.607** | **$ 0.644** | **$ 0.688** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 0.318 | $ 0.372 | $ 0.340 | $ 0.291 | $ 0.464 | $ 0.366 | $ 0.363 | $ 0.162 | $ 0.523 | $ 0.575 | $ 0.607 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 0.090 | $ 0.136 | $ 0.193 | $ 0.226 | $ 0.088 | $ 0.428 | $ 0.578 | $ 0.497 | $ 0.211 | $ 0.259 | $ 0.233 |
| Process Retrofit Project | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 1.000 | $ 2.000 | $ 3.000 |
| **Total - C&I Large Retrofit** | **$ 0.276** | **$ 0.287** | **$ 0.326** | **$ 0.267** | **$ 0.365** | **$ 0.381** | **$ 0.412** | **$ 0.268** | **$ 0.339** | **$ 0.397** | **$ 0.382** |
| Small Business Energy Advantage | $ - | $ 0.265 | $ 0.476 | $ 0.918 | $ 0.396 | $ 1.077 | $ 0.233 | $ 0.765 | $ 0.386 | $ 0.414 | $ 0.443 |
| **Subtotal: C&I** | **$ 0.331** | **$ 0.290** | **$ 0.249** | **$ 0.367** | **$ 0.322** | **$ 0.367** | **$ 0.318** | **$ 0.398** | **$ 0.435** | **$ 0.490** | **$ 0.494** |

## Table D3 – Connecticut Natural Gas Units (2011-2021)

**Table D3**

**CNG Historical and Projected Units**

| Units | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | 1,720 | 1,112 | 800 | 3,766 | 4,036 | 5,720 | 1,584 | 4,183 | 4,243 | 4,119 | 4,116 |
| Home Energy Solutions (HES) | 1,895 | 2,709 | 4,543 | 4,872 | 3,957 | 2,937 | 2,251 | 2,692 | 2,955 | 2,856 | 2,887 |
| HVAC/Water Heating | - | - | - | - | - | 2,922 | 2,452 | 2,815 | 2,736 | 2,699 | 2,727 |
| New Construction, Additions & Major Renovations | 204 | 276 | 345 | 163 | 181 | 275 | 355 | 320 | 326 | 312 | 315 |
| Residential Behavior | | | | | | 26,243 | 26,455 | 15,000 | 15,000 | 15,000 | 15,000 |
| Water Heating | 250 | 88 | 26 | 288 | 736 | - | - | - | - | - | - |
| **Subtotal: Residential** | **4,069** | **4,185** | **5,714** | **9,089** | **8,910** | **38,097** | **33,097** | **25,010** | **25,259** | **24,986** | **25,045** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 46 | 93 | 125 | 97 | 54 | 125 | 163 | 198 | 142 | 142 | 122 |
| **Total - Lost Opportunity** | **46** | **93** | **125** | **97** | **54** | **125** | **163** | **198** | **142** | **142** | **122** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 44 | 20 | 24 | 31 | 22 | 38 | 32 | 40 | 28 | 24 | 22 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 3 | 9 | 8 | 19 | 26 | 12 | 26 | 78 | 27 | 24 | 23 |
| **Total - C&I Large Retrofit** | **47** | **29** | **32** | **50** | **48** | **50** | **58** | **118** | **55** | **48** | **45** |
| Small Business Energy Advantage | - | 9 | 20 | 24 | 31 | 26 | 28 | 51 | 36 | 35 | 36 |
| **Subtotal: C&I** | **93** | **131** | **177** | **171** | **133** | **201** | **249** | **366** | **232** | **225** | **203** |
| **TOTAL** | **4,162** | **4,316** | **5,891** | **9,260** | **9,043** | **38,298** | **33,346** | **25,377** | **25,492** | **25,211** | **25,248** |

## Connecticut Natural Gas PMI (2019)

**CONNECTICUT NATURAL GAS CORPORATION**

**2019 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2019 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is: $697,546

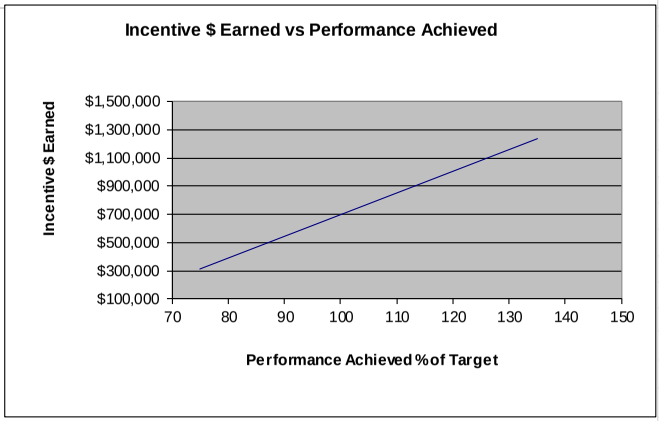
This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including ECMB costs, Audit Costs or Management Incentive).

Goals will be prorated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $310,021 |
| 85 | 3.0% | $465,031 |
| 95 | 4.0% | $620,041 |
| **100** | **4.5%** | **$697,546** |
| 105 | 5.0% | $775,051 |
| 115 | 6.0% | $930,062 |
| 125 | 7.0% | $1,085,072 |
| 135 | 8.0% | $1,240,082 |
| | | |
| Total Original Budget* | $15,501,027 | |

*Does not include Incentive, EEB costs, and Audit.



## Connecticut Natural Gas PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 10,143,296 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs | 0.195 | $136,022 |
| | | HES-Income Eligible | 7,063,295 | | $12,494,474 | | |
| | | Home Energy Solutions (HES) | | | $8,826,016 | | |
| | | Residential New Construction | | | | | |
| | | Water Heating | | | | | |
| | | | | | | | |
| | | Home Energy Solutions | 5,621,215 | | | | |
| | | HVAC/Water Heating | 2,926,200 | | | | |
| | | Residential Behavior | 200,160 | | | | |
| | | New Construction, Additions & Major Renovations | 2,738,484 | | | | |
| | | Water Heating | 0 | | | | |
| | | Total Lifetime Savings (ccf) | 18,549,356 | | | | |
| | | | | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6736 | | | | |
| | | | | | | | |
| | | Total Residential Gas Benefit: | $12,494,474 | | | | |
| | | Net Residential Gas Benefit: | $2,351,178 | | $2,351,178 | 0.195 | $136,022 |
| HES | $ 3,236,505 | Achieve CCF savings per single-family home. This is based on 2018 actuals adjusted to 2019 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings/single-family home | 0.060 | $41,853 |
| HES-Income Eligible | $ 4,206,424 | Annual ccf savings | | Annual ccf savings | 326,524 | 0.030 | $20,926 |

## Connecticut Natural Gas PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 4,482,383 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I Programs | Gas Benefit from all C&I Programs | 0.210 | $146,485 |
| | | Energy Conscious Blueprint | 3,542,521 | | $10,079,062 | | |
| | | Energy Opportunities | 2,415,903 | | | | |
| | | O&M | 3,476,719 | | | | |
| | | Small Business Enegy Advantage | 867,240 | | | | |
| | | Total Lifetime Savings (ccf) | 10,302,384 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9783 | | | | |
| | | Total C&I Gas Benefit: | $10,079,062 | | | | |
| | | Net C&I Gas Benefit: | $5,596,679 | | $5,596,679 | 0.210 | $146,485 |
| Small Business Energy Advantage | $ 334,736 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures. | | % of Gas Projects | 20% of Signed Projects | 0.050 | $34,877 |
| Energy Conscious Blueprint/Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end uses with BES counting as more than one end use. | | % of Gas Projects | 25% of Signed Projects | 0.050 | $34,877 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$697,546** |

## Connecticut Natural Gas PMI (2020)

**CONNECTICUT NATURAL GAS CORPORATION**

**2020 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2020 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is $682,077

This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including EEB costs, Audit Costs or Management Incentive).

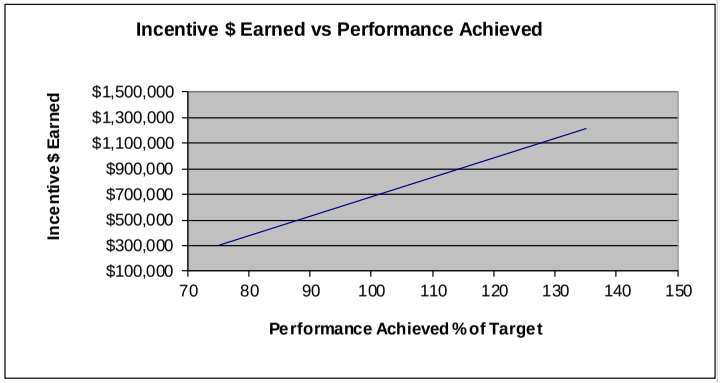
Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pre-tax | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $303,146 |
| 85 | 3.0% | $454,718 |
| 95 | 4.0% | $606,291 |
| **100** | **4.5%** | **$682,077** |
| 105 | 5.0% | $757,864 |
| 115 | 6.0% | $909,437 |
| 125 | 7.0% | $1,061,009 |
| 135 | 8.0% | $1,212,582 |

| | |
|---|---|
| **Total Original Budget*** | **$15,157,277** |

*Does not include Incentive, EEB costs, and Audit.



## Connecticut Natural Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 9,842,659 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs $12,275,372 | 0.195 | $133,005 |
| | | HES-Income Eligible | 6,827,538 | | | | |
| | | Home Energy Solutions | 5,431,411 | | | | |
| | | HVAC/Water Heating | 2,887,350 | | | | |
| | | Residential Behavior | 200,160 | | | | |
| | | New Construction, Additions & Major Renovations | 2,621,497 | | | | |
| | | Total Lifetime Savings (ccf) | 17,967,957 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6832 | | | | |
| | | Total Residential Gas Benefit: | $12,275,372 | | | | |
| | | Net Residential Gas Benefit: | $2,432,713 | | $2,432,713 | 0.195 | $133,005 |
| HES | $ 3,092,712 | Achieve CCF savings per single-family home. This is based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings/single-family home | 0.060 | $40,925 |

## Connecticut Natural Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 4,237,860 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I Programs | Gas Benefit from all C&I Programs $8,574,837 | 0.210 | $143,236 |
| | | Energy Conscious Blueprint | 3,199,814 | | | | |
| | | Energy Opportunities | 2,047,504 | | | | |
| | | O&M | 2,635,806 | | | | |
| | | Small Business | 770,243 | | | | |
| | | Total Lifetime Savings (ccf) | 8,653,367 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9909 | | | | |
| | | Total C&I Gas Benefit: | $8,574,837 | | | | |
| | | Net C&I Gas Benefit: | $4,336,977 | | $4,336,977 | 0.210 | $143,236 |
| Small Business Energy Advantage | $ 318,826 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures based on 2019 Actual Results plus 5%. | | % of Gas Projects | 20% of Signed Projects | 0.050 | $34,104 |
| Energy Conscious Blueprint/Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures with BES counting as more than one end use. Based on 2019 Actual Results plus 5%. | | % of Gas Projects | 25% of Signed Projects | 0.050 | $34,104 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$682,077** |

## Connecticut Natural Gas PMI (2021)

**CONNECTICUT NATURAL GAS CORPORATION**

**2021 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2021 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is $689,487

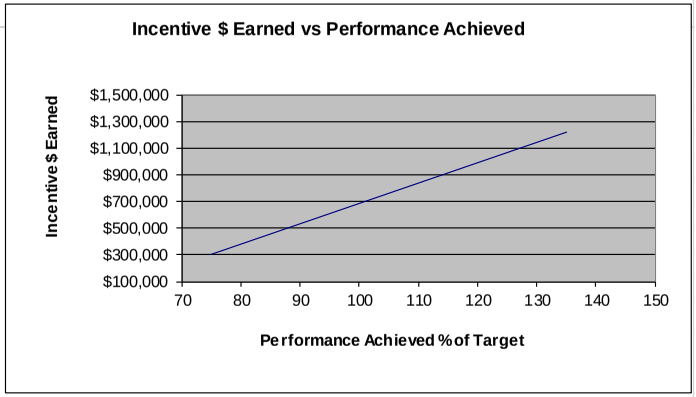
This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including ECMB costs, Audit Costs or Management Incentive).

Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $306,439 |
| 85 | 3.0% | $459,658 |
| 95 | 4.0% | $612,877 |
| **100** | **4.5%** | **$689,487** |
| 105 | 5.0% | $766,097 |
| 115 | 6.0% | $919,316 |
| 125 | 7.0% | $1,072,536 |
| 135 | 8.0% | $1,225,755 |
| Total Original Budget* | $15,321,937 | |

*Does not include Incentive, EEB costs, and Audit.



## Connecticut Natural Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 9,926,037 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs $12,392,874 | 0.195 | $134,450 |
| | | HES-Income Eligible | 6,822,682 | | | | |
| | | Home Energy Solutions | 5,490,912 | | | | |
| | | HVAC/Water Heating | 2,916,939 | | | | |
| | | Residential Behavior | 200,160 | | | | |
| | | New Construction, Additions & Major Renovations | 2,648,816 | | | | |
| | | Total Lifetime Savings (ccf) | 18,079,509 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6855 | | | | |
| | | Total Residential Gas Benefit: | $12,392,874 | | | | |
| | | Net Residential Gas Benefit: | $2,466,837 | | $2,466,837 | 0.195 | $134,450 |
| HES | $ 3,126,775 | Achieve CCF savings per single-family home. This is based on 2020 actuals adjusted to 2021 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings/single-family home | 0.060 | $41,369 |
| HES-Income Eligible | $ 4,117,341 | Annual ccf savings | | Annual ccf Savings | 315,401 | 0.030 | $20,685 |

## Connecticut Natural Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 4,301,242 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I programs | Gas Benefit from all C&I programs $8,136,528 | 0.210 | $144,792 |
| | | Energy Conscious Blueprint | 3,047,380 | | | | |
| | | Energy Opportunities | 1,965,699 | | | | |
| | | O&M | 2,969,475 | | | | |
| | | Small Business Energy Advantage | 728,073 | | | | |
| | | Total Lifetime Savings (ccf) | 8,710,627 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9341 | | | | |
| | | Total C&I Gas Benefit: | $8,136,528 | | | | |
| | | Net C&I Gas Benefit: | $3,835,286 | | $3,835,286 | 0.210 | $144,792 |
| Small Business Energy Advantage | $ 322,674 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures based on 2019 Actual Results plus 5%. | | % of Gas Projects | 20% of Signed Projects | 0.050 | $34,474 |
| Energy Consicous Blueprint/ Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering /all signed projects (excluding rebates). Comprehensive shall be defined as including multiple end use measures with BES counting as more than one end use. Based on 2019 Actual Results plus 5%. | | % of Gas Projects | 25% of Signed Projects | 0.050 | $34,474 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$689,487** |

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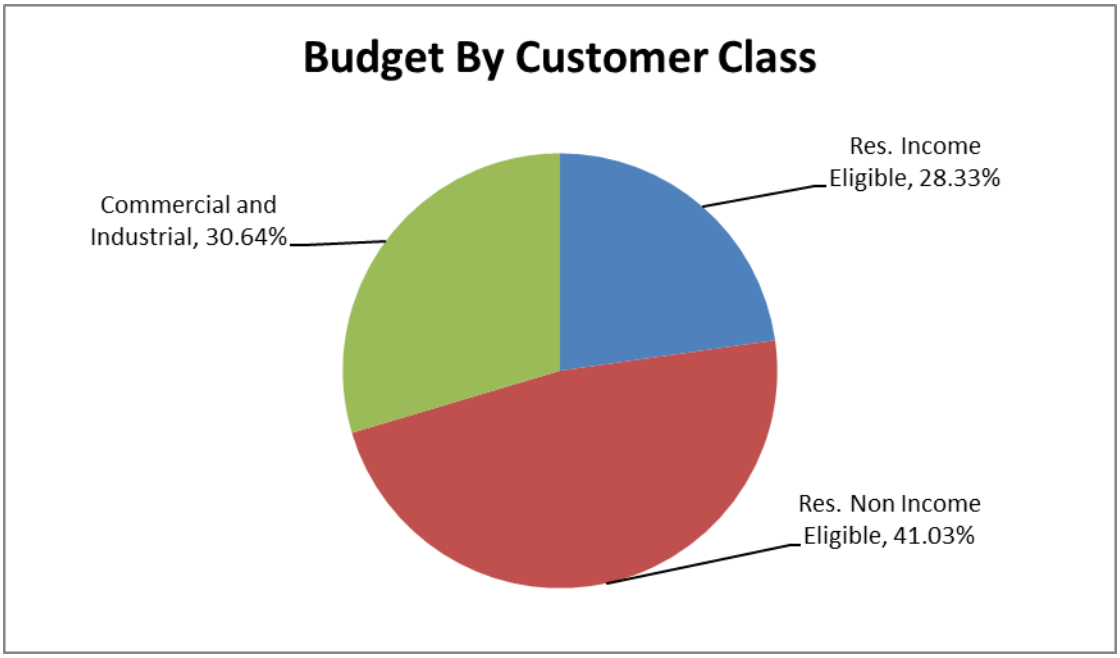
# SCG BUDGET AND SAVINGS TABLES

## Table A – Southern Connecticut Gas (2019-2021)

**Table A**
**Proposed Natural Gas Energy Efficiency Plan Budget**

| Natural Gas EE Budget | 2018 SCG Actual Results | 2019 SCG Budget Update 11/1/2018 | 2019 SCG Budget Update 3/1/2019 | 2020 SCG Budget Update 3/1/2019 | 2021 SCG Budget Update 3/1/2019 |
|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | |
| New Construction, Additions & Major Renovations | $ (255,564) | $ 941,409 | $ 1,099,837 | $ 958,519 | $ 964,726 |
| Home Energy Solutions (HES) | $ 1,425,026 | $ 1,664,797 | $ 1,944,962 | $ 1,742,346 | $ 1,754,838 |
| HVAC/Water Heating | $ 2,811,800 | $ 3,057,327 | $ 3,571,838 | $ 3,138,217 | $ 3,150,629 |
| HES-Income Eligible - Weatherization | $ 3,217,032 | $ 2,843,329 | $ 3,321,827 | $ 3,043,129 | $ 3,109,482 |
| Residential Behavior | $ 125,944 | $ 153,794 | $ 179,676 | $ 159,643 | $ 159,689 |
| **Subtotal: Residential** | **$ 7,324,238** | **$ 8,660,655** | **$ 10,118,139** | **$ 9,041,855** | **$ 9,139,364** |
| **COMMERCIAL & INDUSTRIAL** | | | | | |
| **C&I LOST OPPORTUNITY** | | | | | |
| Energy Conscious Blueprint | $ 759,888 | $ 1,721,603 | $ 2,011,328 | $ 1,722,875 | $ 1,743,640 |
| **Total - Lost Opportunity** | **$ 759,888** | **$ 1,721,603** | **$ 2,011,328** | **$ 1,722,875** | **$ 1,743,640** |
| **C&I LARGE RETROFIT** | | | | | |
| Energy Opportunities | $ 1,208,221 | $ 1,136,505 | $ 1,327,765 | $ 1,131,751 | $ 1,146,268 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 130,461 | $ 491,376 | $ 574,069 | $ 507,317 | $ 512,992 |
| **Total - C&I Large Retrofit** | **$ 1,338,682** | **$ 1,627,881** | **$ 1,901,834** | **$ 1,639,068** | **$ 1,659,259** |
| Small Business Energy Advantage | $ 72,863 | $ 245,158 | $ 286,415 | $ 248,811 | $ 252,114 |
| **Subtotal: C&I** | **$ 2,171,433** | **$ 3,594,642** | **$ 4,199,577** | **$ 3,610,753** | **$ 3,655,014** |
| **OTHER - EDUCATION** | | | | | |
| Educate the Public | $ 68,327 | $ 65,796 | $ 65,796 | $ 65,796 | $ 65,796 |
| Customer Engagement | $ 4,807 | $ - | $ - | $ 150,000 | $ 150,000 |
| Educate the Students | $ 25,891 | $ 22,859 | $ 22,859 | $ 45,164 | $ 45,164 |
| Educate the Workforce | $ 12,836 | $ 13,671 | $ 13,671 | $ 35,034 | $ 35,034 |
| **Subtotal: Education** | **$ 111,861** | **$ 102,326** | **$ 102,326** | **$ 295,994** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | |
| Financing Support - Residential | $ 7,638 | $ 86,292 | $ 86,292 | $ 86,292 | $ 86,292 |
| Financing Support - C&I | $ - | $ 75,000 | $ 75,000 | $ 75,000 | $ 75,000 |
| Research, Development and Demonstration | $ 58,531 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ 66,169** | **$ 211,292** | **$ 211,292** | **$ 211,292** | **$ 211,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | |
| Administration | $ 143,273 | $ 150,465 | $ 150,465 | $ 154,855 | $ 159,219 |
| Marketing Plan | $ 29,900 | $ 14,630 | $ 14,630 | $ 31,100 | $ 40,100 |
| Information Technology | $ 140,182 | $ 137,532 | $ 137,532 | $ 139,038 | $ 140,590 |
| Planning | $ 98,428 | $ 96,583 | $ 96,583 | $ 99,480 | $ 102,465 |
| Evaluation Measurement and Verification | $ 217,523 | $ 217,523 | $ 217,523 | $ 200,000 | $ 200,000 |
| Evaluation Administrator | $ 18,667 | $ 18,667 | $ 18,667 | $ 20,000 | $ 20,000 |
| Energy Efficiency Board Consultants | $ 31,893 | $ 31,893 | $ 31,893 | $ 43,333 | $ 43,333 |
| Audits - Financial and Operational | $ 4,200 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| Performance Management Incentive | $ 709,031 | $ 593,354 | $ 686,163 | $ 620,297 | $ 627,482 |
| **Subtotal: Other - Administrative & Planning** | **$ 1,393,097** | **$ 1,270,647** | **$ 1,363,456** | **$ 1,318,103** | **$ 1,343,188** |
| **TOTAL** | **$ 11,066,798** | **$ 13,839,563** | **$ 15,994,790** | **$ 14,477,997** | **$ 14,644,852** |

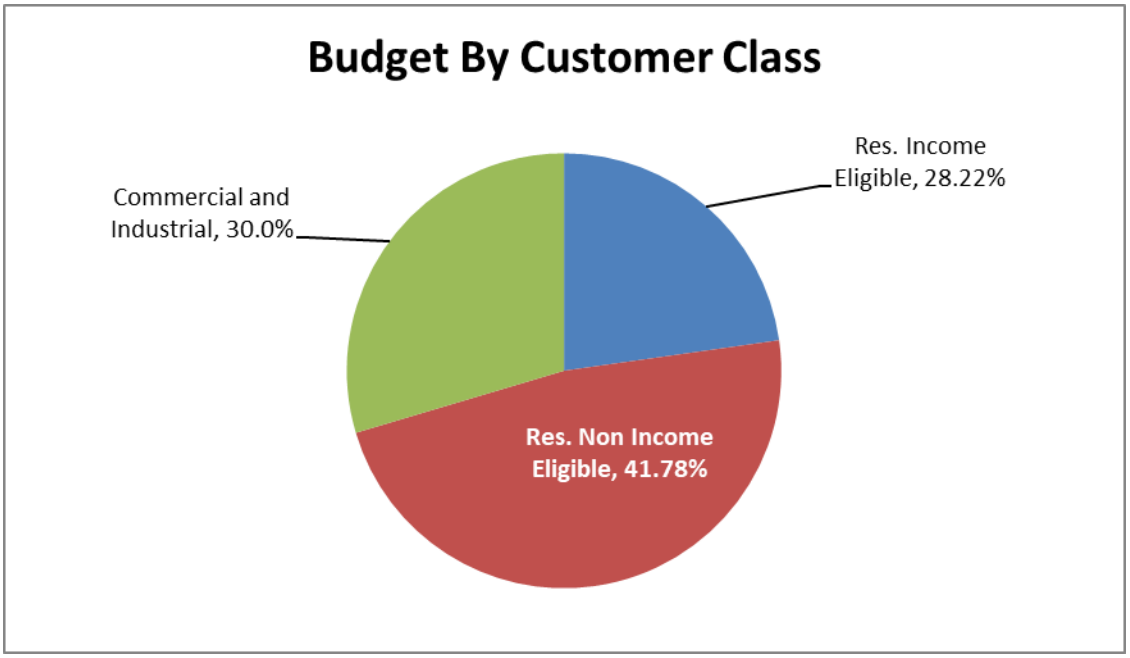
## Table A Pie Chart – Southern Connecticut Gas (2019)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,206,424 | 25.87% | 28.33% |
| Res. Non-Income Eligible | $6,092,889 | 37.47% | 41.03% |
| **Residential Subtotal** | $10,299,312 | 63.34% | 69.36% |
| | | | |
| Commercial and Industrial | $4,549,614 | 27.98% | 30.64% |
| **C&I Subtotal** | $4,549,614 | 27.98% | 30.64% |
| | | | |
| **Residential and C&I Subtotal** | $14,848,926 | 91.33% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,410,207 | 8.67% | |
| **Other Expenditures Subtotal** | $1,410,207 | 8.67% | |
| | | | |
| **TOTAL** | **$16,259,133** | **100.00%** | |

*Please see attached Budget Allocation Table.

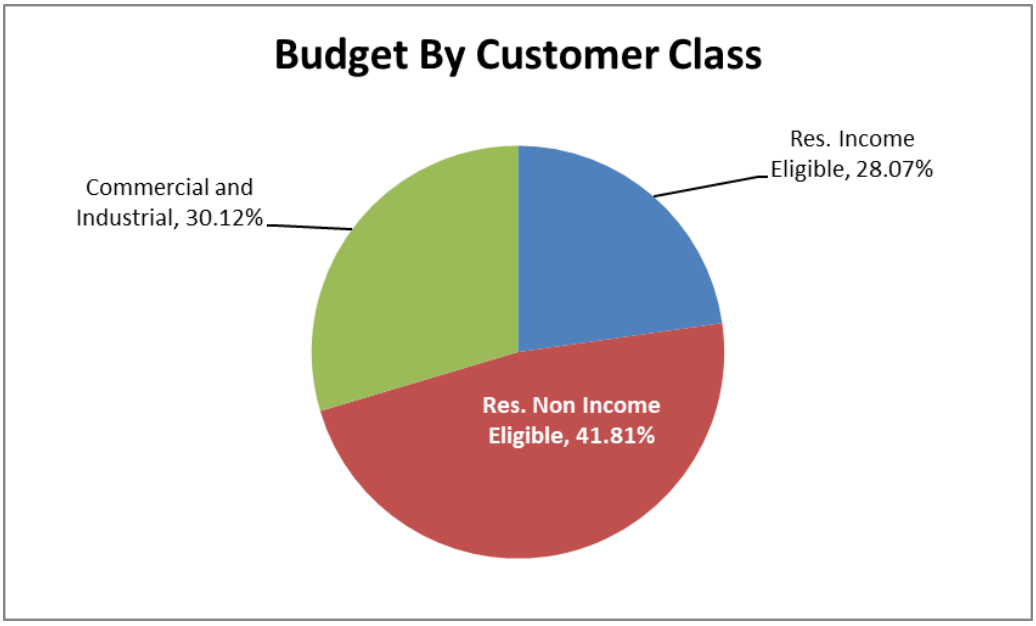
## Table A Pie Chart – Southern Connecticut Gas (2020)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,096,485 | 25.74% | 28.22% |
| Res. Non-Income Eligible | $6,063,892 | 38.11% | 41.78% |
| **Residential Subtotal** | $10,160,377 | 63.85% | 70.00% |
| | | | |
| Commercial and Industrial | $4,353,528 | 27.36% | 30.00% |
| **C&I Subtotal** | $4,353,528 | 27.36% | 30.00% |
| | | | |
| **Residential and C&I Subtotal** | $14,513,905 | 91.21% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,398,782 | 8.79% | |
| **Other Expenditures Subtotal** | $1,398,782 | 8.79% | |
| | | | |
| **TOTAL** | **$15,912,687** | **100.00%** | |

*Please see attached Budget Allocation Table.

## Table A Pie Chart – Southern Connecticut Gas (2021)




| Customer Class | Budget* | % of Total Conservation Budget | % of Residential & C&I Budget |
|---|---|---|---|
| Res. Income Eligible | $4,117,341 | 25.60% | 28.07% |
| Res. Non-Income Eligible | $6,133,615 | 38.13% | 41.81% |
| **Residential Subtotal** | $10,250,955 | 63.73% | 69.88% |
| | | | |
| Commercial and Industrial | $4,418,709 | 27.47% | 30.12% |
| **C&I Subtotal** | $4,418,709 | 27.47% | 30.12% |
| | | | |
| **Residential and C&I Subtotal** | $14,669,665 | 91.20% | 100.00% |
| | | | |
| ***Other Expenditures*** | | | |
| Other Expenditures | $1,415,092 | 8.80% | |
| **Other Expenditures Subtotal** | $1,415,092 | 8.80% | |
| | | | |
| **TOTAL** | **$16,084,757** | **100.00%** | |

*Please see attached Budget Allocation Table.

## Table B – Southern Connecticut Gas Costs and Benefits (2019)

**Table B**

**2019 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,206,424 | $ 4,207,292 | $ 4,671,220 | $ 8,576,668 | 1.11 | 2.04 | 4,243 | Homes |
| SCG HES-Income Eligible | $ 3,321,827 | $ 3,322,853 | $ 3,883,250 | $ 6,895,036 | 1.17 | 2.08 | 2,707 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,528,251** | **$ 7,530,145** | **$ 8,554,470** | **$ 15,471,704** | **1.14** | **2.05** | **6,950** | **Homes** |
| CNG Home Energy Solutions | $ 3,236,505 | $ 3,910,693 | $ 3,863,371 | $ 7,322,391 | 1.19 | 1.87 | 2,955 | Homes |
| SCG Home Energy Solutions | $ 1,944,962 | $ 2,618,003 | $ 2,661,054 | $ 4,964,778 | 1.37 | 1.90 | 1,763 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 5,181,467** | **$ 6,528,696** | **$ 6,524,425** | **$ 12,287,168** | **1.26** | **1.88** | **4,718** | **Homes** |
| CNG HVAC/Water Heating | $ 1,824,189 | $ 5,374,494 | $ 1,996,128 | $ 3,407,057 | 1.09 | 0.63 | 2,736 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,571,838 | $10,852,792 | $ 4,501,342 | $ 7,687,726 | 1.26 | 0.71 | 6,018 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 5,396,027** | **$ 16,227,286** | **$ 6,497,469** | **$ 11,094,784** | **1.20** | **0.68** | **8,753** | **HVAC** |
| CNG Residential Behavior | $ 156,228 | $ 156,228 | $ 211,804 | $ 340,071 | 1.36 | 2.18 | 15,000 | Units |
| SCG Residential Behavior | $ 179,676 | $ 179,676 | $ 211,804 | $ 340,071 | 1.18 | 1.89 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 335,904** | **$ 335,904** | **$ 423,609** | **$ 680,142** | **1.26** | | **30,000** | |
| CNG New Construction | $ 719,950 | $ 1,989,236 | $ 1,751,950 | $ 2,977,869 | 2.43 | 1.50 | 326 | Homes |
| SCG New Construction | $ 1,099,837 | $ 3,094,059 | $ 1,799,154 | $ 3,058,102 | 1.64 | 0.99 | 504 | Homes |
| **Subtotal: New Construction** | **$ 1,819,787** | **$ 5,083,295** | **$ 3,551,104** | **$ 6,035,971** | **1.95** | **1.19** | **830** | **Homes** |
| **Subtotal: Residential** | **$ 20,261,435** | **$35,705,326** | **$25,551,078** | **$ 45,569,769** | **1.26** | **1.28** | **51,250** | **Homes/ Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,151,328 | $ 2,831,535 | $ 2,844,677 | $ 4,715,078 | 1.32 | 1.67 | 142 | Projects |
| SCG Energy Conscious Blueprint | $ 2,011,328 | $ 2,764,544 | $ 3,150,010 | $ 5,221,171 | 1.57 | 1.89 | 157 | Projects |
| **Subtotal: Lost Opportunity** | **$ 4,162,656** | **$ 5,596,078** | **$ 5,994,687** | **$ 9,936,249** | **1.44** | **1.78** | **300** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,262,498 | $ 2,841,293 | $ 2,319,724 | $ 3,642,287 | 1.84 | 1.28 | 28 | Projects |
| SCG Energy Opportunities | $ 1,327,765 | $ 3,323,795 | $ 2,932,767 | $ 4,604,848 | 2.21 | 1.39 | 35 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,590,263** | **$ 6,165,089** | **$ 5,252,491** | **$ 8,247,135** | **2.03** | **1.34** | **63** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 733,821 | $ 1,423,932 | $ 4,078,343 | $ 6,125,237 | 5.56 | 4.30 | 27 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 574,069 | $ 1,233,310 | $ 3,895,915 | $ 5,851,250 | 6.79 | 4.74 | 26 | Projects |
| **Subtotal: O&M** | **$ 1,307,889** | **$ 2,657,242** | **$ 7,974,258** | **$ 11,976,487** | **6.10** | **4.51** | **52** | **Projects** |
| CNG Small Business Energy Advantage | $ 334,736 | $ 626,813 | $ 836,318 | $ 1,319,937 | 2.50 | 2.11 | 36 | Projects |
| SCG Small Business Energy Advantage | $ 286,415 | $ 639,585 | $ 1,011,248 | $ 1,596,024 | 3.53 | 2.50 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 621,151** | **$ 1,266,399** | **$ 1,847,565** | **$ 2,915,961** | **2.97** | **2.30** | **73** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 8,681,959** | **$ 15,684,808** | **$ 21,069,001** | **$ 33,075,831** | **2.43** | **2.11** | **488** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 102,326 | | | | | | | |
| SCG Other Programs/Requirements | $ 102,326 | | | | | | | |
| **Subtotal** | **$ 204,652** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,531,129 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,574,748 | | | | | | | |
| **Subtotal** | **$ 3,105,876** | | | | | | | |
| **Subtotal: Other** | **$ 3,310,529** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 10,143,296 | $15,637,943 | $12,494,474 | $ 22,624,055 | | | 25,259 | |
| **SCG Residential** | $ 10,118,139 | $20,067,383 | $13,056,604 | $ 22,945,713 | | | 25,991 | |
| **Residential Total** | **$ 20,261,435** | **$35,705,326** | **$25,551,078** | **$ 45,569,769** | | | **51,250** | |
| **CNG C&I** | $ 4,482,383 | $ 7,723,573 | $10,079,062 | $ 15,802,539 | | | 232 | |
| **SCG C&I** | $ 4,199,577 | $ 7,961,235 | $10,989,939 | $ 17,273,292 | | | 255 | |
| **C&I Total** | **$ 8,681,959** | **$15,684,808** | **$21,069,001** | **$ 33,075,831** | | | **488** | |
| **CNG Other** | $ 1,633,455 | | | | | | | |
| **SCG Other** | $ 1,677,074 | | | | | | | |
| **Other Total** | **$ 3,310,529** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 16,259,133** | **$23,361,516** | **$22,573,536** | **$ 38,426,594** | | | **25,492** | |
| **SCG TOTAL** | **$ 15,994,790** | **$28,028,617** | **$24,046,543** | **$ 40,219,006** | | | **26,247** | |
| **GRAND TOTAL** | **$ 32,253,923** | **$51,390,133** | **$46,620,079** | **$ 78,645,600** | **1.45** | **1.53** | **51,738** | |

# Table B – Southern Connecticut Gas Costs and Benefits (2019) continued

**Table B**

**2019 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 326,524 | 7,063,295 | 3,291 | $ 12.88 | $ 0.60 | $ 1,278.01 | 33,599 | 726,813 | $ 125.19 | $ 5.79 |
| SCG HES-Income Eligible | 267,316 | 5,889,319 | 2,638 | $ 12.43 | $ 0.56 | $ 1,259.18 | 27,507 | 606,011 | $ 120.76 | $ 5.48 |
| **Subtotal: HES-Income Eligible** | **593,840** | **12,952,614** | **5,929** | **$ 12.68** | **$ 0.58** | **$ 1,269.63** | **61,106** | **1,332,824** | **$ 123.20** | **$ 5.65** |
| CNG Home Energy Solutions | 281,946 | 5,621,215 | 2,725 | $ 11.48 | $ 0.58 | $ 1,187.65 | 29,012 | 578,423 | $ 111.56 | $ 5.60 |
| SCG Home Energy Solutions | 185,707 | 3,939,131 | 1,838 | $ 10.47 | $ 0.49 | $ 1,058.23 | 19,109 | 405,337 | $ 101.78 | $ 4.80 |
| **Subtotal: Home Energy Solutions** | **467,653** | **9,560,347** | **4,563** | **$ 11.08** | **$ 0.54** | **$ 1,135.52** | **48,121** | **983,760** | **$ 107.67** | **$ 5.27** |
| CNG HVAC/Water Heating | 146,698 | 2,926,200 | 1,315 | $ 12.43 | $ 0.62 | $ 1,386.71 | 15,095 | 301,106 | $ 120.85 | $ 6.06 |
| SCG HVAC/Water Heating | 330,580 | 6,611,595 | 2,955 | $ 10.80 | $ 0.54 | $ 1,208.57 | 34,017 | 680,333 | $ 105.00 | $ 5.25 |
| **Subtotal: HVAC/Water Heating** | **477,278** | **9,537,796** | **4,271** | **$ 11.31** | **$ 0.57** | **$ 1,263.44** | **49,112** | **981,439** | **$ 109.87** | **$ 5.50** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.56 | $ 0.78 | | 10,298 | 20,596 | $ 15.17 | $ 7.59 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.80 | $ 0.90 | | 10,298 | 20,596 | $ 17.45 | $ 8.72 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.68** | **$ 0.84** | | **20,596** | **41,193** | **$ 16.31** | **$ 8.15** |
| CNG New Construction | 109,539 | 2,738,484 | 1,054 | $ 6.57 | $ 0.26 | $ 683.15 | 11,272 | 281,790 | $ 63.87 | $ 2.55 |
| SCG New Construction | 112,491 | 2,812,268 | 1,082 | $ 9.78 | $ 0.39 | $ 1,016.24 | 11,575 | 289,382 | $ 95.02 | $ 3.80 |
| **Subtotal: New Construction** | **222,030** | **5,550,753** | **2,136** | **$ 8.20** | **$ 0.33** | **$ 851.91** | **22,847** | **571,172** | **$ 79.65** | **$ 3.19** |
| **Subtotal: Residential** | **1,960,961** | **38,001,829** | **16,900** | **$ 10.33** | **$ 0.53** | **$ 1,198.93** | **201,783** | **3,910,388** | **$ 100.41** | **$ 5.18** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 259,256 | 3,542,521 | 3,884 | $ 8.30 | $ 0.61 | $ 553.85 | 26,677 | 364,525 | $ 80.64 | $ 5.90 |
| SCG Energy Conscious Blueprint | 287,084 | 3,922,758 | 4,301 | $ 7.01 | $ 0.51 | $ 467.62 | 29,541 | 403,652 | $ 68.09 | $ 4.98 |
| **Subtotal: Lost Opportunity** | **546,340** | **7,465,279** | **8,186** | **$ 7.62** | **$ 0.56** | **$ 508.54** | **56,218** | **768,177** | **$ 74.04** | **$ 5.42** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 209,536 | 2,415,903 | 1,484 | $ 6.03 | $ 0.52 | $ 850.60 | 21,561 | 248,596 | $ 58.55 | $ 5.08 |
| SCG Energy Opportunities | 264,911 | 3,054,363 | 1,876 | $ 5.01 | $ 0.43 | $ 707.58 | 27,259 | 314,294 | $ 48.71 | $ 4.22 |
| **Subtotal: Energy Opportunities** | **474,447** | **5,470,266** | **3,361** | **$ 5.46** | **$ 0.47** | **$ 770.74** | **48,821** | **562,890** | **$ 53.06** | **$ 4.60** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 499,687 | 3,476,719 | 1,675 | $ 1.47 | $ 0.21 | $ 438.06 | 51,418 | 357,754 | $ 14.27 | $ 2.05 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 477,335 | 3,321,202 | 1,600 | $ 1.20 | $ 0.17 | $ 358.74 | 49,118 | 341,752 | $ 11.69 | $ 1.68 |
| **Subtotal: O&M** | **977,022** | **6,797,921** | **3,275** | **$ 1.34** | **$ 0.19** | **$ 399.31** | **100,536** | **699,506** | **$ 13.01** | **$ 1.87** |
| CNG Small Business Energy Advantage | 83,439 | 867,240 | 2,012 | $ 4.01 | $ 0.39 | $ 166.39 | 8,586 | 89,239 | $ 38.99 | $ 3.75 |
| SCG Small Business Energy Advantage | 100,892 | 1,048,638 | 2,433 | $ 2.84 | $ 0.27 | $ 117.74 | 10,382 | 107,905 | $ 27.59 | $ 2.65 |
| **Subtotal: Small Business Energy Advantage** | **184,331** | **1,915,878** | **4,444** | **$ 3.37** | **$ 0.32** | **$ 139.76** | **18,968** | **197,144** | **$ 32.75** | **$ 3.15** |
| **Subtotal: Commercial & Industrial** | **2,182,140** | **21,649,345** | **19,266** | **$ 3.98** | **$ 0.40** | **$ 450.63** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 964,788 | 18,549,356 | 8,386 | $ 10.51 | $ 0.55 | $ 1,209.57 | 99,277 | 1,908,729 | $ 102.17 | $ 5.31 |
| **SCG Residential** | 996,174 | 19,452,473 | 8,514 | $ 10.16 | $ 0.52 | $ 1,188.45 | 102,506 | 2,001,660 | $ 98.71 | $ 5.05 |
| **Residential Total** | **1,960,961** | **38,001,829** | **16,900** | **$ 10.33** | **$ 0.53** | **$ 1,198.93** | **201,783** | **3,910,388** | **$ 100.41** | **$ 5.18** |
| **CNG C&I** | 1,051,918 | 10,302,384 | 9,056 | $ 4.26 | $ 0.44 | $ 494.99 | 108,242 | 1,060,115 | $ 41.41 | $ 4.23 |
| **SCG C&I** | 1,130,222 | 11,346,961 | 10,211 | $ 3.72 | $ 0.37 | $ 411.30 | 116,300 | 1,167,602 | $ 36.11 | $ 3.60 |
| **C&I Total** | **2,182,140** | **21,649,345** | **19,266** | **$ 3.98** | **$ 0.40** | **$ 450.63** | **224,542** | **2,227,718** | **$ 38.67** | **$ 3.90** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | - | - | - | | | | **0** | **0** | | |
| **CNG TOTAL** | **2,016,706** | **28,851,740** | **17,441** | **$ 8.06** | **$ 0.56** | **$ 932.22** | **207,519** | **2,968,844** | **$ 78.35** | **$ 5.48** |
| **SCG TOTAL** | **2,126,395** | **30,799,435** | **18,724** | **$ 7.52** | **$ 0.52** | **$ 854.23** | **218,806** | **3,169,262** | **$ 73.10** | **$ 5.05** |
| **GRAND TOTAL** | **4,143,101** | **59,651,174** | **36,166** | **$ 7.78** | **$ 0.54** | **$ 891.84** | **426,325** | **6,138,106** | **$ 75.66** | **$ 5.25** |

## Table B – Southern Connecticut Gas Costs and Benefits (2020)

**Table B**

**2020 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,096,485 | $ 4,097,325 | $ 4,570,422 | $ 8,420,136 | 1.12 | 2.06 | 4,119 | Homes |
| SCG HES-Income Eligible | $ 3,043,129 | $ 3,044,059 | $ 3,565,182 | $ 6,351,486 | 1.17 | 2.09 | 2,455 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,139,614** | **$ 7,141,384** | **$ 8,135,604** | **$ 14,771,622** | **1.14** | **2.07** | **6,575** | **Homes** |
| CNG Home Energy Solutions | $ 3,092,712 | $ 3,608,982 | $ 3,776,032 | $ 7,185,100 | 1.22 | 1.99 | 2,856 | Homes |
| SCG Home Energy Solutions | $ 1,742,346 | $ 2,481,296 | $ 4,383,759 | $ 8,209,708 | 2.52 | 3.31 | 2,870 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 4,835,059** | **$ 6,090,278** | **$ 8,159,792** | **$ 15,394,808** | **1.69** | **2.53** | **5,725** | **Homes** |
| CNG HVAC/Water Heating | $ 1,804,983 | $ 5,308,152 | $ 1,992,524 | $ 3,412,565 | 1.10 | 0.64 | 2,699 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,138,217 | $ 9,701,980 | $ 4,058,385 | $ 6,954,874 | 1.29 | 0.72 | 5,363 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 4,943,200** | **$ 15,010,131** | **$ 6,050,909** | **$ 10,367,439** | **1.22** | **0.69** | **8,062** | **HVAC** |
| CNG Residential Behavior | $ 153,445 | $ 153,445 | $ 237,972 | $ 368,804 | 1.55 | 2.40 | 15,000 | Units |
| SCG Residential Behavior | $ 159,643 | $ 159,643 | $ 237,972 | $ 368,804 | 1.49 | 2.31 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 313,088** | **$ 313,088** | **$ 475,943** | **$ 737,608** | **1.52** | | **30,000** | |
| CNG New Construction | $ 695,034 | $ 1,910,096 | $ 1,698,422 | $ 2,895,440 | 2.44 | 1.52 | 312 | Homes |
| SCG New Construction | $ 958,519 | $ 2,664,966 | $ 1,559,094 | $ 2,657,916 | 1.63 | 1.00 | 431 | Homes |
| **Subtotal: New Construction** | **$ 1,653,553** | **$ 4,575,063** | **$ 3,257,515** | **$ 5,553,356** | **1.97** | **1.21** | **743** | **Homes** |
| **Subtotal: Residential** | **$ 18,884,514** | **$ 33,129,945** | **$ 26,079,763** | **$ 46,824,833** | **1.38** | **1.41** | **51,105** | **Homes/Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,059,924 | $ 2,754,834 | $ 2,563,033 | $ 4,286,278 | 1.24 | 1.56 | 142 | Projects |
| SCG Energy Conscious Blueprint | $ 1,722,875 | $ 2,465,460 | $ 2,602,700 | $ 4,352,615 | 1.51 | 1.77 | 157 | Projects |
| **Subtotal: Lost Opportunity** | **$ 3,782,799** | **$ 5,220,294** | **$ 5,165,733** | **$ 8,638,893** | **1.37** | **1.65** | **300** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,176,759 | $ 2,608,469 | $ 1,940,401 | $ 3,083,705 | 1.65 | 1.18 | 24 | Projects |
| SCG Energy Opportunities | $ 1,131,751 | $ 2,800,927 | $ 2,262,240 | $ 3,595,175 | 2.00 | 1.28 | 28 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,308,510** | **$ 5,409,396** | **$ 4,202,641** | **$ 6,678,880** | **1.82** | **1.23** | **51** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 682,351 | $ 1,388,009 | $ 3,338,937 | $ 4,970,098 | 4.89 | 3.58 | 24 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 507,317 | $ 1,077,835 | $ 3,829,523 | $ 5,851,250 | 7.55 | 5.43 | 21 | Projects |
| **Subtotal: O&M** | **$ 1,189,668** | **$ 2,465,844** | **$ 7,168,459** | **$ 10,821,347** | **6.03** | **4.39** | **45** | **Projects** |
| CNG Small Business Energy Advantage | $ 318,826 | $ 596,395 | $ 732,466 | $ 1,170,585 | 2.30 | 1.96 | 35 | Projects |
| SCG Small Business Energy Advantage | $ 248,811 | $ 539,391 | $ 766,804 | $ 1,225,461 | 3.08 | 2.27 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 567,637** | **$ 1,135,786** | **$ 1,499,269** | **$ 2,396,046** | **2.64** | **2.11** | **72** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 7,848,613** | **$ 14,231,319** | **$ 18,036,103** | **$ 28,535,167** | **2.30** | **2.01** | **468** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 295,994 | | | | | | | |
| SCG Other Programs/Requirements | $ 295,994 | | | | | | | |
| **Subtotal** | **$ 591,988** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,536,174 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,529,395 | | | | | | | |
| **Subtotal** | **$ 3,065,569** | | | | | | | |
| **Subtotal: Other** | **$ 3,657,557** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 9,842,659 | $ 15,078,001 | $ 12,275,372 | $ 22,282,045 | | | 24,986 | |
| **SCG Residential** | $ 9,041,855 | $ 18,051,944 | $ 13,804,391 | $ 24,542,788 | | | 26,119 | |
| **Residential Total** | **$ 18,884,514** | **$ 33,129,945** | **$ 26,079,763** | **$ 46,824,833** | | | **51,105** | |
| **CNG C&I** | $ 4,237,860 | $ 7,347,706 | $ 8,574,837 | $ 13,510,666 | | | 225 | |
| **SCG C&I** | $ 3,610,753 | $ 6,883,613 | $ 9,461,266 | $ 15,024,501 | | | 243 | |
| **C&I Total** | **$ 7,848,613** | **$ 14,231,319** | **$ 18,036,103** | **$ 28,535,167** | | | **468** | |
| **CNG Other** | $ 1,832,168 | | | | | | | |
| **SCG Other** | $ 1,825,389 | | | | | | | |
| **Other Total** | **$ 3,657,557** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 15,912,687** | **$ 22,425,707** | **$ 20,850,208** | **$ 35,792,711** | | | **25,211** | |
| **SCG TOTAL** | **$ 14,477,997** | **$ 24,935,557** | **$ 23,265,658** | **$ 39,567,289** | | | **26,362** | |
| **GRAND TOTAL** | **$ 30,390,684** | **$ 47,361,264** | **$ 44,115,866** | **$ 75,360,000** | **1.45** | **1.59** | **51,573** | |

## Table B – Southern Connecticut Gas Costs and Benefits (2020)—continued

**Table B**

**2020 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 315,625 | 6,827,538 | 3,182 | $ 12.98 | $ 0.60 | $ 1,287.59 | 32,478 | 702,554 | $ 126.13 | $ 5.83 |
| SCG HES-Income Eligible | 242,454 | 5,341,574 | 2,393 | $ 12.55 | $ 0.57 | $ 1,271.82 | 24,949 | 549,648 | $ 121.98 | $ 5.54 |
| **Subtotal: HES-Income Eligible** | **558,079** | **12,169,112** | **5,574** | **$ 12.79** | **$ 0.59** | **$ 1,280.82** | **57,426** | **1,252,202** | **$ 124.33** | **$ 5.70** |
| CNG Home Energy Solutions | 272,426 | 5,431,411 | 2,129 | $ 11.35 | $ 0.57 | $ 1,452.69 | 28,033 | 558,892 | $ 110.33 | $ 5.53 |
| SCG Home Energy Solutions | 302,369 | 6,413,707 | 2,993 | $ 5.76 | $ 0.27 | $ 582.23 | 31,114 | 659,970 | $ 56.00 | $ 2.64 |
| **Subtotal: Home Energy Solutions** | **574,795** | **11,845,118** | **5,122** | **$ 8.41** | **$ 0.41** | **$ 944.07** | **59,146** | **1,218,863** | **$ 81.75** | **$ 3.97** |
| CNG HVAC/Water Heating | 144,751 | 2,887,350 | 1,298 | $ 12.47 | $ 0.63 | $ 1,390.57 | 14,895 | 297,108 | $ 121.18 | $ 6.08 |
| SCG HVAC/Water Heating | 294,612 | 5,892,232 | 2,634 | $ 10.65 | $ 0.53 | $ 1,191.49 | 30,316 | 606,311 | $ 103.52 | $ 5.18 |
| **Subtotal: HVAC/Water Heating** | **439,362** | **8,779,582** | **3,932** | **$ 11.25** | **$ 0.56** | **$ 1,257.21** | **45,210** | **903,419** | **$ 109.34** | **$ 5.47** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.53 | $ 0.77 | | 10,298 | 20,596 | $ 14.90 | $ 7.45 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.60 | $ 0.80 | | 10,298 | 20,596 | $ 15.50 | $ 7.75 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.56** | **$ 0.78** | | **20,596** | **41,193** | **$ 15.20** | **$ 7.60** |
| CNG New Construction | 104,860 | 2,621,497 | 1,009 | $ 6.63 | $ 0.27 | $ 688.94 | 10,790 | 269,752 | $ 64.41 | $ 2.58 |
| SCG New Construction | 96,258 | 2,406,445 | 926 | $ 9.96 | $ 0.40 | $ 1,035.03 | 9,905 | 247,623 | $ 96.77 | $ 3.87 |
| **Subtotal: New Construction** | **201,118** | **5,027,943** | **1,935** | **$ 8.22** | **$ 0.33** | **$ 854.58** | **20,695** | **517,375** | **$ 79.90** | **$ 3.20** |
| **Subtotal: Residential** | **1,973,514** | **38,222,075** | **16,563** | **$ 9.57** | **$ 0.49** | **$ 1,140.19** | **203,075** | **3,933,052** | **$ 92.99** | **$ 4.80** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 234,176 | 3,199,814 | 3,509 | $ 8.80 | $ 0.64 | $ 587.12 | 24,097 | 329,261 | $ 85.49 | $ 6.26 |
| SCG Energy Conscious Blueprint | 237,800 | 3,249,336 | 3,563 | $ 7.25 | $ 0.53 | $ 483.57 | 24,470 | 334,357 | $ 70.41 | $ 5.15 |
| **Subtotal: Lost Opportunity** | **471,975** | **6,449,150** | **7,071** | **$ 8.01** | **$ 0.59** | **$ 534.94** | **48,566** | **663,617** | **$ 77.89** | **$ 5.70** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 177,584 | 2,047,504 | 1,258 | $ 6.63 | $ 0.57 | $ 935.48 | 18,273 | 210,688 | $ 64.40 | $ 5.59 |
| SCG Energy Opportunities | 207,039 | 2,387,107 | 1,467 | $ 5.47 | $ 0.47 | $ 771.71 | 21,304 | 245,633 | $ 53.12 | $ 4.61 |
| **Subtotal: Energy Opportunities** | **384,623** | **4,434,611** | **2,724** | **$ 6.00** | **$ 0.52** | **$ 847.32** | **39,578** | **456,322** | **$ 58.33** | **$ 5.06** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 499,687 | 2,635,806 | 1,675 | $ 1.37 | $ 0.26 | $ 407.33 | 51,418 | 271,224 | $ 13.27 | $ 2.52 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 477,335 | 3,321,202 | 1,600 | $ 1.06 | $ 0.15 | $ 317.03 | 49,118 | 341,752 | $ 10.33 | $ 1.48 |
| **Subtotal: O&M** | **977,022** | **5,957,008** | **3,275** | **$ 1.22** | **$ 0.20** | **$ 363.21** | **100,536** | **612,976** | **$ 11.83** | **$ 1.94** |
| CNG Small Business Energy Advantage | 74,107 | 770,243 | 1,787 | $ 4.30 | $ 0.41 | $ 178.44 | 7,626 | 79,258 | $ 41.81 | $ 4.02 |
| SCG Small Business Energy Advantage | 77,581 | 806,352 | 1,871 | $ 3.21 | $ 0.31 | $ 133.01 | 7,983 | 82,974 | $ 31.17 | $ 3.00 |
| **Subtotal: Small Business Energy Advantage** | **151,688** | **1,576,595** | **3,657** | **$ 3.74** | **$ 0.36** | **$ 155.21** | **15,609** | **162,232** | **$ 36.37** | **$ 3.50** |
| **Subtotal: Commercial & Industrial** | **1,985,308** | **18,417,364** | **16,729** | **$ 3.95** | **$ 0.43** | **$ 469.17** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 937,742 | 17,967,957 | 7,617 | $ 10.50 | $ 0.55 | $ 1,292.14 | 96,494 | 1,848,903 | $ 102.00 | $ 5.32 |
| **SCG Residential** | 1,035,772 | 20,254,118 | 8,945 | $ 8.73 | $ 0.45 | $ 1,010.80 | 106,581 | 2,084,149 | $ 84.84 | $ 4.34 |
| **Residential Total** | **1,973,514** | **38,222,075** | **16,563** | **$ 9.57** | **$ 0.49** | **$ 1,140.19** | **203,075** | **3,933,052** | **$ 92.99** | **$ 4.80** |
| **CNG C&I** | 985,553 | 8,653,367 | 8,228 | $ 4.30 | $ 0.49 | $ 515.03 | 101,413 | 890,431 | $ 41.79 | $ 4.76 |
| **SCG C&I** | 999,755 | 9,763,997 | 8,500 | $ 3.61 | $ 0.37 | $ 424.79 | 102,875 | 1,004,715 | $ 35.10 | $ 3.59 |
| **C&I Total** | **1,985,308** | **18,417,364** | **16,729** | **$ 3.95** | **$ 0.43** | **$ 469.17** | **204,288** | **1,895,147** | **$ 38.42** | **$ 4.14** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | - | - | - | | | | **0** | **0** | | |
| **CNG TOTAL** | **1,923,295** | **26,621,324** | **15,846** | **$ 8.27** | **$ 0.60** | **$ 1,004.23** | **197,907** | **2,739,334** | **$ 80.40** | **$ 5.81** |
| **SCG TOTAL** | **2,035,527** | **30,018,115** | **17,445** | **$ 7.11** | **$ 0.48** | **$ 829.90** | **209,456** | **3,088,864** | **$ 69.12** | **$ 4.69** |
| **GRAND TOTAL** | **3,958,822** | **56,639,439** | **33,291** | **$ 7.68** | **$ 0.54** | **$ 912.88** | **407,363** | **5,828,198** | **$ 74.60** | **$ 5.21** |

## Table B – Southern Connecticut Gas Costs and Benefits (2021)

**Table B**

**2021 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

| Program | Utility Costs | Total Resource Cost | Utility Benefit | Total Resource Benefit | Utility B/C Ratio | Total Resource B/C Ratio | Goals/ No. of Units | Units of Measure |
|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | |
| CNG HES-Income Eligible | $ 4,117,341 | $ 4,118,180 | $ 4,580,311 | $ 8,502,271 | 1.11 | 2.06 | 4,116 | Homes |
| SCG HES-Income Eligible | $ 3,109,482 | $ 3,110,428 | $ 3,638,118 | $ 6,529,418 | 1.17 | 2.10 | 2,498 | Homes |
| **Subtotal: HES-Income Eligible** | **$ 7,226,823** | **$ 7,228,608** | **$ 8,218,428** | **$ 15,031,689** | **1.14** | **2.08** | **6,614** | **Homes** |
| CNG Home Energy Solutions | $ 3,126,775 | $ 3,647,880 | $ 3,824,134 | $ 7,339,478 | 1.22 | 2.01 | 2,887 | Homes |
| SCG Home Energy Solutions | $ 1,754,838 | $ 2,150,542 | $ 2,353,315 | $ 4,443,068 | 1.34 | 2.07 | 1,537 | Homes |
| **Subtotal: Home Energy Solutions** | **$ 4,881,614** | **$ 5,798,423** | **$ 6,177,449** | **$ 11,782,547** | **1.27** | **2.03** | **4,424** | **Homes** |
| CNG HVAC/Water Heating | $ 1,822,968 | $ 5,362,037 | $ 2,016,764 | $ 3,480,049 | 1.1063 | 0.65 | 2,727 | HVAC Rebated |
| SCG HVAC/Water Heating | $ 3,150,629 | $ 9,734,188 | $ 4,078,673 | $ 7,042,106 | 1.29 | 0.72 | 5,379 | HVAC Rebated |
| **Subtotal: HVAC/Water Heating** | **$ 4,973,597** | **$ 15,096,225** | **$ 6,095,437** | **$ 10,522,155** | **1.23** | **0.70** | **8,106** | **HVAC** |
| CNG Residential Behavior | $ 155,328 | $ 155,328 | $ 247,856 | $ 381,305 | 1.60 | 2.45 | 15,000 | Units |
| SCG Residential Behavior | $ 159,689 | $ 159,689 | $ 247,856 | $ 381,305 | 1.55 | 2.39 | 15,000 | Units |
| **Subtotal: Residential Behavior** | **$ 315,016** | **$ 315,016** | **$ 495,713** | **$ 762,610** | **1.57** | | **30,000** | |
| CNG New Construction | $ 703,626 | $ 1,931,351 | $ 1,723,809 | $ 2,957,491 | 2.45 | 1.53 | 315 | Homes |
| SCG New Construction | $ 964,726 | $ 2,677,154 | $ 1,544,924 | $ 2,625,976 | 1.60 | 0.98 | 433 | Homes |
| **Subtotal: New Construction** | **$ 1,668,352** | **$ 4,608,505** | **$ 3,268,733** | **$ 5,583,468** | **1.96** | **1.21** | **748** | **Homes** |
| **Subtotal: Residential** | **$ 19,065,401** | **$ 33,046,777** | **$ 24,255,761** | **$ 43,682,468** | **1.27** | **1.32** | **49,892** | **Homes/Units** |
| | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | |
| CNG Energy Conscious Blueprint | $ 2,095,137 | $ 2,802,556 | $ 2,399,266 | $ 4,715,078 | 1.15 | 1.68 | 122 | Projects |
| SCG Energy Conscious Blueprint | $ 1,743,640 | $ 2,493,463 | $ 2,416,827 | $ 5,221,171 | 1.39 | 2.09 | 123 | Projects |
| **Subtotal: Lost Opportunity** | **$ 3,838,777** | **$ 5,296,019** | **$ 4,816,094** | **$ 9,936,249** | **1.25** | **1.88** | **246** | **Projects** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | |
| CNG Energy Opportunities | $ 1,192,975 | $ 2,645,337 | $ 1,801,144 | $ 2,920,606 | 1.51 | 1.10 | 22 | Projects |
| SCG Energy Opportunities | $ 1,146,268 | $ 2,835,206 | $ 2,074,627 | $ 3,360,319 | 1.81 | 1.19 | 26 | Projects |
| **Subtotal: Energy Opportunities** | **$ 2,339,243** | **$ 5,480,542** | **$ 3,875,772** | **$ 6,280,924** | **1.25** | **1.49** | **48** | **Projects** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | $ 690,456 | $ 1,402,789 | $ 3,266,095 | $ 5,084,983 | 4.73 | 3.62 | 23 | Projects |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | $ 512,992 | $ 1,089,031 | $ 2,787,950 | $ 4,340,558 | 5.43 | 3.99 | 19 | Projects |
| **Subtotal: O&M** | **$ 1,203,447** | **$ 2,491,821** | **$ 6,054,045** | **$ 9,425,541** | **5.03** | **3.78** | **42** | **Projects** |
| CNG Small Business Energy Advantage | $ 322,674 | $ 603,412 | $ 670,022 | $ 1,092,437 | 2.08 | 1.81 | 36 | Projects |
| SCG Small Business Energy Advantage | $ 252,114 | $ 544,900 | $ 698,776 | $ 1,139,319 | 2.77 | 2.09 | 37 | Projects |
| **Subtotal: Small Business Energy Advantage** | **$ 574,788** | **$ 1,148,312** | **$ 1,368,798** | **$ 2,231,756** | **2.38** | **1.94** | **73** | **Projects** |
| **Subtotal: Commercial & Industrial** | **$ 7,956,256** | **$ 14,416,694** | **$ 16,114,708** | **$ 27,874,470** | **2.03** | **1.93** | **25,406** | **Projects** |
| | | | | | | | | |
| **OTHER** | | | | | | | | |
| CNG Other Programs/Requirements | $ 295,994 | | | | | | | |
| SCG Other Programs/Requirements | $ 295,994 | | | | | | | |
| **Subtotal** | **$ 591,988** | | | | | | | |
| CNG Other Education, Administrative & Planning | $ 1,561,484 | | | | | | | |
| SCG Other Education, Administrative & Planning | $ 1,554,480 | | | | | | | |
| **Subtotal** | **$ 3,115,964** | | | | | | | |
| **Subtotal: Other** | **$ 3,707,952** | | | | | | | |
| | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | |
| **CNG Residential** | $ 9,926,037 | $ 15,214,775 | $ 12,392,874 | $ 22,660,595 | | | 25,045 | |
| **SCG Residential** | $ 9,139,364 | $ 17,832,002 | $ 11,862,886 | $ 21,021,873 | | | 24,847 | |
| **Residential Total** | **$ 19,065,401** | **$ 33,046,777** | **$ 24,255,761** | **$ 43,682,468** | | | **49,892** | |
| **CNG C&I** | $ 4,301,242 | $ 7,454,094 | $ 8,136,528 | $ 13,813,103 | | | 203 | |
| **SCG C&I** | $ 3,655,014 | $ 6,962,600 | $ 7,978,180 | $ 14,061,367 | | | 206 | |
| **C&I Total** | **$ 7,956,256** | **$ 14,416,694** | **$ 16,114,708** | **$ 27,874,470** | | | **409** | |
| **CNG Other** | $ 1,857,478 | | | | | | | |
| **SCG Other** | $ 1,850,474 | | | | | | | |
| **Other Total** | **$ 3,707,952** | **$ -** | **$ -** | **$ -** | | | 0 | |
| **CNG TOTAL** | **$ 16,084,757** | **$ 22,668,869** | **$ 20,529,402** | **$ 36,473,698** | | | **25,248** | |
| **SCG TOTAL** | **$ 14,644,852** | **$ 24,794,602** | **$ 19,841,066** | **$ 35,083,240** | | | **25,053** | |
| **GRAND TOTAL** | **$ 30,729,609** | **$ 47,463,471** | **$ 40,370,469** | **$ 71,556,938** | **1.31** | **1.51** | **50,301** | |

# Table B – Southern Connecticut Gas Costs and Benefits (2021) —continued

**Table B**

**2021 COMPARISON OF ENERGY EFFICIENCY PROGRAMS**

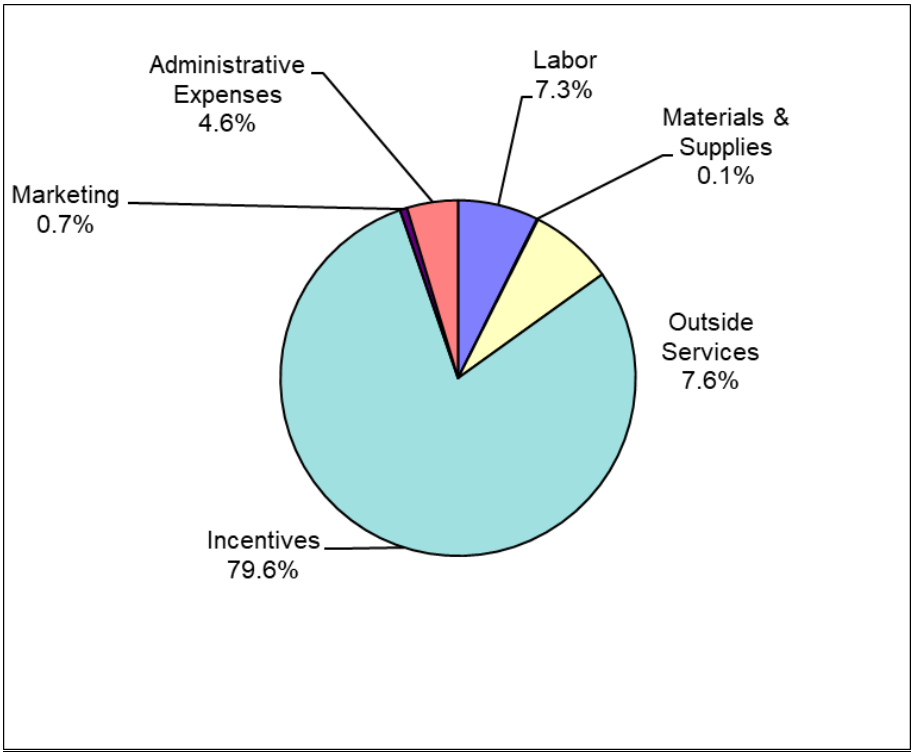
| Program | Annualized Savings (ccf) | Lifetime Savings (ccf) | Peak Savings (ccf) | Gas Cost Rate $ per ccf Annual | Gas Cost Rate $ per ccf Lifetime | Gas Cost Rate $ per ccf Peak | Annual MMBTU | Lifetime MMBTU | Utility Cost per Annual MMBTU | Utility Cost per Lifetime MMBTU |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | |
| CNG HES-Income Eligible | 315,401 | 6,822,682 | 3,179 | $ 13.05 | $ 0.60 | $ 1,295.07 | 32,455 | 702,054 | $ 126.86 | $ 5.86 |
| SCG HES-Income Eligible | 246,657 | 5,434,176 | 1,654 | $ 12.61 | $ 0.57 | $ 1,879.92 | 25,381 | 559,177 | $ 122.51 | $ 5.56 |
| **Subtotal: HES-Income Eligible** | **562,058** | **12,256,858** | **4,833** | **$ 12.86** | **$ 0.59** | **$ 1,495.21** | **57,836** | **1,261,231** | **$ 124.95** | **$ 5.73** |
| CNG Home Energy Solutions | 275,410 | 5,490,912 | 2,662 | $ 11.35 | $ 0.57 | $ 1,174.61 | 28,340 | 565,015 | $ 110.33 | $ 5.53 |
| SCG Home Energy Solutions | 161,917 | 3,434,509 | 1,602 | $ 10.84 | $ 0.51 | $ 1,095.07 | 16,661 | 353,411 | $ 105.32 | $ 4.97 |
| **Subtotal: Home Energy Solutions** | **437,327** | **8,925,421** | **4,264** | **$ 11.16** | **$ 0.55** | **$ 1,144.72** | **45,001** | **918,426** | **$ 108.48** | **$ 5.32** |
| CNG HVAC/Water Heating | 146,234 | 2,916,939 | 1,311 | $ 12.47 | $ 0.62 | $ 1,390.18 | 15,047 | 300,153 | $ 121.15 | $ 6.07 |
| SCG HVAC/Water Heating | 295,510 | 5,910,209 | 2,642 | $ 10.66 | $ 0.53 | $ 1,192.57 | 30,408 | 608,160 | $ 103.61 | $ 5.18 |
| **Subtotal: HVAC/Water Heating** | **441,744** | **8,827,148** | **3,953** | **$ 11.26** | **$ 0.56** | **$ 1,258.12** | **45,456** | **908,314** | **$ 109.42** | **$ 5.48** |
| CNG Residential Behavior | 100,080 | 200,160 | - | $ 1.55 | $ 0.78 | | 10,298 | 20,596 | $ 15.08 | $ 7.54 |
| SCG Residential Behavior | 100,080 | 200,160 | - | $ 1.60 | $ 0.80 | | 10,298 | 20,596 | $ 15.51 | $ 7.75 |
| **Subtotal: Residential Behavior** | **200,160** | **400,320** | **-** | **$ 1.57** | **$ 0.79** | | **20,596** | **41,193** | **$ 15.29** | **$ 7.65** |
| CNG New Construction | 105,953 | 2,648,816 | 1,019 | $ 6.64 | $ 0.27 | $ 690.27 | 10,903 | 272,563 | $ 64.54 | $ 2.58 |
| SCG New Construction | 96,595 | 2,414,880 | 929 | $ 9.99 | $ 0.40 | $ 1,038.09 | 9,940 | 248,491 | $ 97.06 | $ 3.88 |
| **Subtotal: New Construction** | **202,548** | **5,063,696** | **1,949** | **$ 8.24** | **$ 0.33** | **$ 856.14** | **20,842** | **521,054** | **$ 80.05** | **$ 3.20** |
| **Subtotal: Residential** | **1,843,838** | **35,473,442** | **15,000** | **$ 10.34** | **$ 0.54** | **$ 1,271.06** | **189,731** | **3,650,217** | **$100.49** | **$ 5.22** |
| | | | | | | | | | | |
| **Commercial and Industrial C&I Lost Opportunity** | | | | | | | | | | |
| CNG Energy Conscious Blueprint | 223,020 | 3,047,380 | 3,341 | $ 9.39 | $ 0.69 | $ 627.02 | 22,949 | 313,575 | $ 91.30 | $ 6.68 |
| SCG Energy Conscious Blueprint | 224,652 | 3,069,685 | 3,366 | $ 7.76 | $ 0.57 | $ 518.04 | 23,117 | 315,871 | $ 75.43 | $ 5.52 |
| **Subtotal: Lost Opportunity** | **447,672** | **6,117,065** | **6,707** | **$ 8.57** | **$ 0.63** | **$ 572.33** | **46,065** | **629,446** | **$ 83.33** | **$ 6.10** |
| **Commercial and Industrial Large Retrofit** | | | | | | | | | | |
| CNG Energy Opportunities | 168,360 | 1,965,699 | 1,193 | $ 7.09 | $ 0.61 | $ 1,000.33 | 17,324 | 202,270 | $ 68.86 | $ 5.90 |
| SCG Energy Opportunities | 195,785 | 2,257,354 | 1,387 | $ 5.85 | $ 0.51 | $ 826.53 | 20,146 | 232,282 | $ 56.90 | $ 4.93 |
| **Subtotal: Energy Opportunities** | **364,145** | **4,223,053** | **2,579** | **$ 6.42** | **$ 0.55** | **$ 906.89** | **37,471** | **434,552** | **$ 62.43** | **$ 5.38** |
| CNG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | 426,784 | 2,969,475 | 1,431 | $ 1.62 | $ 0.23 | $ 482.58 | 43,916 | 305,559 | $ 15.72 | $ 2.26 |
| SCG Business & Energy Sustainability (O&M, RCx, BSC, CSP/S | 364,304 | 2,534,753 | 1,221 | $ 1.41 | $ 0.20 | $ 420.04 | 37,487 | 260,826 | $ 13.68 | $ 1.97 |
| **Subtotal: O&M** | **791,088** | **5,504,228** | **2,652** | **$ 1.52** | **$ 0.22** | **$ 453.78** | **81,403** | **566,385** | **$ 14.78** | **$ 2.12** |
| CNG Small Business Energy Advantage | 70,050 | 728,073 | 1,689 | $ 4.61 | $ 0.44 | $ 191.05 | 7,208 | 74,919 | $ 44.77 | $ 4.31 |
| SCG Small Business Energy Advantage | 73,056 | 759,319 | 1,761 | $ 3.45 | $ 0.33 | $ 143.13 | 7,517 | 78,134 | $ 33.54 | $ 3.23 |
| **Subtotal: Small Business Energy Advantage** | **143,105** | **1,487,392** | **3,450** | **$ 4.02** | **$ 0.39** | **$ 166.59** | **14,726** | **153,053** | **$ 39.03** | **$ 3.76** |
| **Subtotal: Commercial & Industrial** | **1,746,010** | **17,331,738** | **15,389** | **$ 4.56** | **$ 0.46** | **$ 517.00** | | | | |
| | | | | | | | | | | |
| **OTHER** | | | | | | | | | | |
| CNG Other Programs/Requirements | | | | | | | | | | |
| SCG Other Programs/Requirements | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| CNG Other Education, Administrative & Planning | | | | | | | | | | |
| SCG Other Education, Administrative & Planning | | | | | | | | | | |
| **Subtotal** | | | | | | | | | | |
| **Subtotal: Other** | | | | | | | | | | |
| | | | | | | | | | | |
| **PROGRAM SUBTOTALS** | | | | | | | | | | |
| **CNG Residential** | 943,078 | 18,079,509 | 8,172 | $ 10.53 | $ 0.55 | $ 1,214.66 | 97,043 | 1,860,381 | $ 102.29 | $ 5.34 |
| **SCG Residential** | 900,760 | 17,393,934 | 6,828 | $ 10.15 | $ 0.53 | $ 1,338.56 | 92,688 | 1,789,836 | $ 98.60 | $ 5.11 |
| **Residential Total** | **1,843,838** | **35,473,442** | **15,000** | **$ 10.34** | **$ 0.54** | **$ 1,271.06** | **189,731** | **3,650,217** | **$ 100.49** | **$ 5.22** |
| **CNG C&I** | 888,214 | 8,710,627 | 7,654 | $ 4.84 | $ 0.49 | $ 561.98 | 91,397 | 896,324 | $ 47.06 | $ 4.80 |
| **SCG C&I** | 857,797 | 8,621,111 | 7,735 | $ 4.26 | $ 0.42 | $ 472.50 | 88,267 | 887,112 | $ 41.41 | $ 4.12 |
| **C&I Total** | **1,746,010** | **17,331,738** | **15,389** | **$ 4.56** | **$ 0.46** | **$ 517.00** | **179,664** | **1,783,436** | **$ 44.28** | **$ 4.46** |
| **CNG Other** | | | | | | | 0 | 0 | | |
| **SCG Other** | | | | | | | 0 | 0 | | |
| **Other Total** | - | - | - | | | | **0** | **0** | | |
| **CNG TOTAL** | **1,831,291** | **26,790,136** | **15,826** | **$ 8.78** | **$ 0.60** | **$ 1,016.38** | **188,440** | **2,756,705** | **$ 85.36** | **$ 5.83** |
| **SCG TOTAL** | **1,758,557** | **26,015,045** | **14,563** | **$ 8.33** | **$ 0.56** | **$ 1,005.61** | **180,955** | **2,676,948** | **$ 80.93** | **$ 5.47** |
| **GRAND TOTAL** | **3,589,848** | **52,805,181** | **30,389** | **$ 8.56** | **$ 0.58** | **$ 1,011.21** | **369,395** | **5,433,653** | **$ 83.19** | **$ 5.66** |

## Table C – Southern Connecticut Gas (2019)

# Table C
## SCG 2019 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 85,668 | $ 720 | $ 5,701 | $ 997,111 | $ 9,136 | $ 1,500 | $ 1,099,837 |
| Home Energy Solutions (HES) | $ 197,204 | $ - | $ 173,002 | $ 1,528,938 | $ 42,818 | $ 3,000 | $ 1,944,962 |
| HVAC/Water Heating | $ 91,022 | $ 6,300 | $ 141,233 | $ 3,321,147 | $ 9,136 | $ 3,000 | $ 3,571,838 |
| HES-Income Eligible - Weatherization | $ 190,395 | $ 2,500 | $ 43,119 | $ 3,069,541 | $ 12,273 | $ 4,000 | $ 3,321,827 |
| Residential Behavior | $ 17,848 | $ - | $ 161,828 | $ - | $ - | $ - | $ 179,676 |
| **Subtotal: Residential** | **$ 582,137** | **$ 9,520** | **$ 524,883** | **$ 8,916,737** | **$ 73,363** | **$ 11,500** | **$ 10,118,139** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | |
| **COMMERCIAL & INDUSTRIAL LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 81,488 | $ 2,000 | $ 14,000 | $ 1,899,040 | $ 6,800 | $ 8,000 | $ 2,011,328 |
| **Subtotal: C&I - Lost Opportunity** | **$ 81,488** | **$ 2,000** | **$ 14,000** | **$ 1,899,040** | **$ 6,800** | **$ 8,000** | **$ 2,011,328** |
| **COMMERCIAL & INDUSTRIAL LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 81,488 | $ 2,000 | $ 13,315 | $ 1,211,948 | $ 14,814 | $ 4,200 | $ 1,327,765 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 46,404 | $ 2,000 | $ 12,335 | $ 506,330 | $ 5,000 | $ 2,000 | $ 574,069 |
| **Subtotal: C&I - Lost Opportunity** | **$ 127,892** | **$ 4,000** | **$ 25,650** | **$ 1,718,278** | **$ 19,814** | **$ 6,200** | **$ 1,901,834** |
| Small Business | $ 76,388 | $ 1,000 | $ 5,355 | $ 199,172 | $ 2,500 | $ 2,000 | $ 286,415 |
| **Subtotal: C&I** | **$ 285,768** | **$ 7,000** | **$ 45,005** | **$ 3,816,490** | **$ 29,114** | **$ 16,200** | **$ 4,199,577** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Educate the Students | $ 7,139 | $ 373 | $ 14,016 | $ - | $ 862 | $ 469 | $ 22,859 |
| Educate the Workforce | $ 1,785 | $ 83 | $ 8,250 | $ - | $ 192 | $ 3,361 | $ 13,671 |
| **Subtotal: Education** | **$ 18,626** | **$ 925** | **$ 51,053** | **$ -** | **$ 2,711** | **$ 29,011** | **$ 102,326** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 75,000 | $ - | $ - | $ - | $ 75,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 211,292** | **$ -** | **$ -** | **$ -** | **$ 211,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 141,136 | $ - | $ 9,329 | $ - | $ - | $ - | $ 150,465 |
| Marketing Plan | $ - | $ - | $ 14,630 | $ - | $ - | $ - | $ 14,630 |
| Information Technology | $ 50,210 | $ - | $ 87,322 | $ - | $ - | $ - | $ 137,532 |
| Planning | $ 96,583 | $ - | $ - | $ - | $ - | $ - | $ 96,583 |
| Evaluation Measurement and Verification | $ - | $ - | $ 217,523 | $ - | $ - | $ - | $ 217,523 |
| Evaluation Administrator | $ - | $ - | $ 18,667 | $ - | $ - | $ - | $ 18,667 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 31,893 | $ - | $ - | $ - | $ 31,893 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 686,163 | $ 686,163 |
| **Subtotal: Other** | **$ 287,929** | **$ -** | **$ 389,364** | **$ -** | **$ -** | **$ 686,163** | **$ 1,363,456** |
| **TOTAL BUDGET** | **$ 1,174,460** | **$ 17,445** | **$ 1,221,597** | **$ 12,733,226** | **$ 105,188** | **$ 742,874** | **$ 15,994,790** |

## Table C Pie Chart - Southern Connecticut Gas (2019)



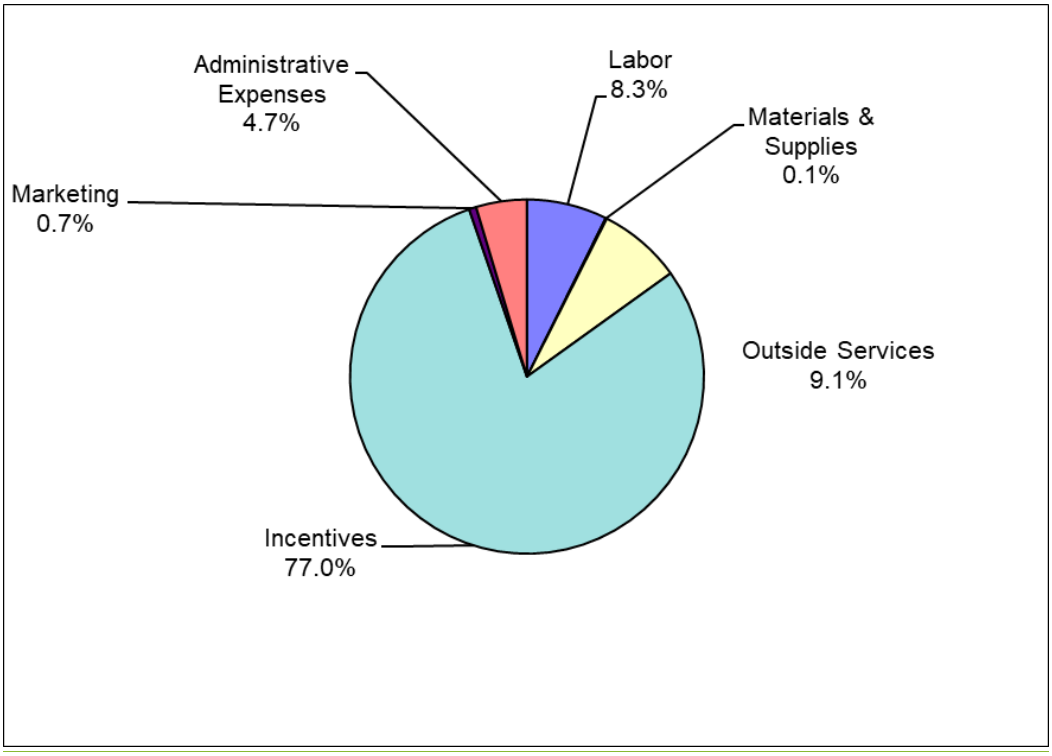

| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| Labor | $ | 1,174,460 | 7.3% |
| Materials & Supplies | $ | 17,445 | 0.1% |
| Outside Services | $ | 1,221,597 | 7.6% |
| Incentives | $ | 12,733,226 | 79.6% |
| Marketing | $ | 105,188 | 0.7% |
| Administrative Expenses | $ | 742,874 | 4.6% |
| **Total** | **$** | **15,994,790** | **100.00%** |

## Table C – Southern Connecticut Gas (2020)

# Table C
## SCG 2020 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 88,238 | $ 720 | $ 5,701 | $ 853,224 | $ 9,136 | $ 1,500 | $ 958,519 |
| Home Energy Solutions (HES) | $ 198,522 | $ - | $ 171,632 | $ 1,326,375 | $ 42,818 | $ 3,000 | $ 1,742,346 |
| HVAC/Water Heating | $ 93,753 | $ 6,300 | $ 66,233 | $ 2,959,795 | $ 9,136 | $ 3,000 | $ 3,138,217 |
| HES-Income Eligible - Weatherization | $ 196,107 | $ 2,500 | $ 43,119 | $ 2,784,054 | $ 13,350 | $ 4,000 | $ 3,043,129 |
| Residential Behavior | $ 18,383 | $ - | $ 141,260 | $ - | $ - | $ - | $ 159,643 |
| **Subtotal: Residential** | **$ 595,003** | **$ 9,520** | **$ 427,945** | **$ 7,923,447** | **$ 74,440** | **$ 11,500** | **$ 9,041,855** |
| | | | | | | | |
| **COMMERCIAL & INDUSTRIAL LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 83,933 | $ 2,000 | $ 14,000 | $ 1,608,143 | $ 6,800 | $ 8,000 | $ 1,722,875 |
| **Subtotal: C&I - Lost Opportunity** | **$ 83,933** | **$ 2,000** | **$ 14,000** | **$ 1,608,143** | **$ 6,800** | **$ 8,000** | **$ 1,722,875** |
| | | | | | | | |
| **COMMERCIAL & INDUSTRIAL LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 83,933 | $ 2,000 | $ 13,315 | $ 1,013,489 | $ 14,814 | $ 4,200 | $ 1,131,751 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 47,796 | $ 2,000 | $ 12,335 | $ 438,186 | $ 5,000 | $ 2,000 | $ 507,317 |
| **Subtotal: C&I - Lost Opportunity** | **$ 131,729** | **$ 4,000** | **$ 25,650** | **$ 1,451,675** | **$ 19,814** | **$ 6,200** | **$ 1,639,068** |
| Small Business Energy Advantage | $ 74,081 | $ 1,000 | $ 5,355 | $ 163,874 | $ 2,500 | $ 2,000 | $ 248,811 |
| **Subtotal: C&I** | **$ 289,742** | **$ 7,000** | **$ 45,005** | **$ 3,223,692** | **$ 29,114** | **$ 16,200** | **$ 3,610,753** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ 150,000 | $ - | $ - | $ - | $ 150,000 |
| Educate the Students | $ 8,303 | $ 374 | $ 32,671 | $ - | $ 862 | $ 2,954 | $ 45,164 |
| Educate the Workforce | $ 7,039 | $ 1,147 | $ 25,217 | $ - | $ - | $ 1,631 | $ 35,034 |
| **Subtotal: Education** | **$ 25,044** | **$ 1,990** | **$ 236,675** | **$ -** | **$ 2,519** | **$ 29,766** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 75,000 | $ - | $ - | $ - | $ 75,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 211,292** | **$ -** | **$ -** | **$ -** | **$ 211,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 145,471 | $ - | $ 9,384 | $ - | $ - | $ - | $ 154,855 |
| Marketing Plan | $ - | $ - | $ 31,100 | $ - | $ - | $ - | $ 31,100 |
| Information Technology | $ 51,716 | $ - | $ 87,322 | $ - | $ - | $ - | $ 139,038 |
| Planning | $ 99,480 | $ - | $ - | $ - | $ - | $ - | $ 99,480 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 620,297 | $ 620,297 |
| **Subtotal: Other** | **$ 296,668** | **$ -** | **$ 401,139** | **$ -** | **$ -** | **$ 620,297** | **$ 1,318,103** |
| **TOTAL BUDGET** | **$ 1,206,456** | **$ 18,510** | **$ 1,322,056** | **$ 11,147,139** | **$ 106,073** | **$ 677,763** | **$ 14,477,997** |

## Table C Pie Chart – Southern Connecticut Gas (2020)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| | | | |
| Labor | $ | 1,206,456 | 8.3% |
| Materials & Supplies | $ | 18,510 | 0.1% |
| Outside Services | $ | 1,322,056 | 9.1% |
| Incentives | $ | 11,147,139 | 77.0% |
| Marketing | $ | 106,073 | 0.7% |
| Administrative Expenses | $ | 677,763 | 4.7% |
| | | | |
| **Total** | **$** | **14,477,997** | **100.00%** |

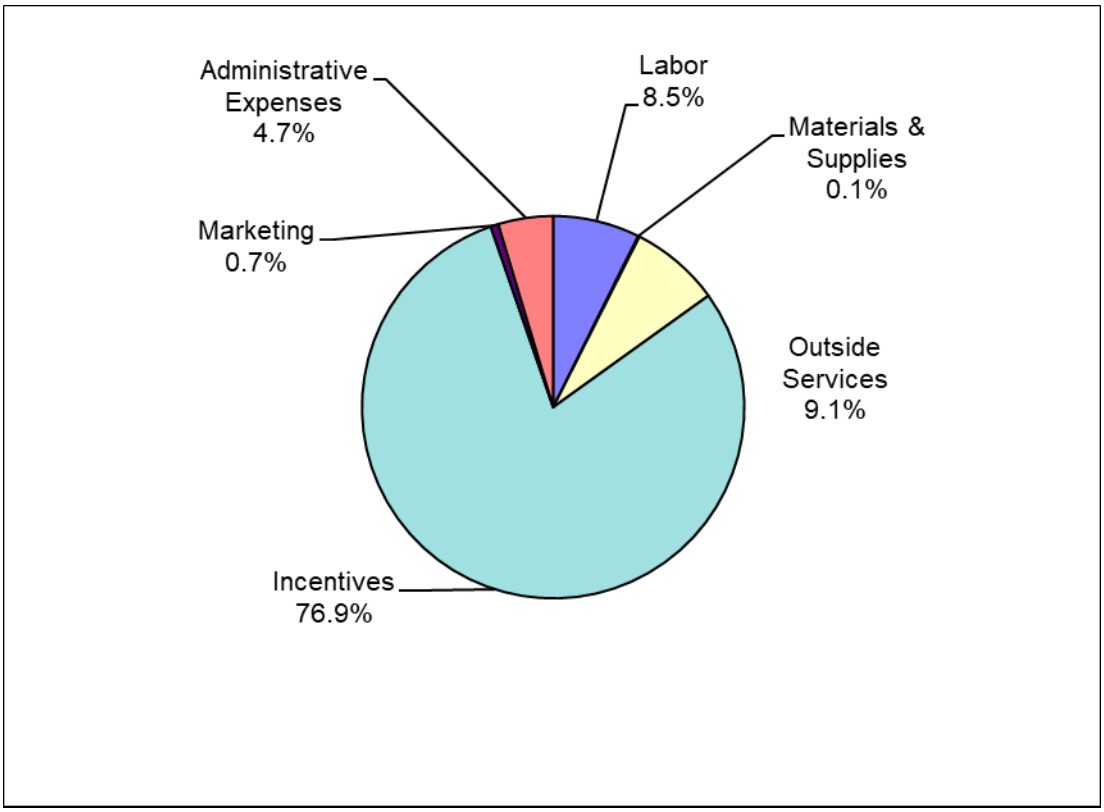
## Table C – Southern Connecticut Gas (2021)

# Table C

## SCG 2021 Budget Details

| GAS ENERGY EFFICIENCY BUDGET ($000) | Labor | Materials & Supplies | Outside Services | Incentives | Marketing | Administrative Expenses | TOTAL |
|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | |
| New Construction, Additions & Major Renovations | $ 90,885 | $ 720 | $ 5,701 | $ 856,214 | $ 9,706 | $ 1,500 | $ 964,726 |
| Home Energy Solutions (HES) | $ 204,315 | $ - | $ 171,632 | $ 1,333,074 | $ 42,818 | $ 3,000 | $ 1,754,838 |
| HVAC/Water Heating | $ 96,565 | $ 6,300 | $ 66,233 | $ 2,968,825 | $ 9,706 | $ 3,000 | $ 3,150,629 |
| HES-Income Eligible - Weatherization | $ 201,990 | $ 2,500 | $ 43,119 | $ 2,844,523 | $ 13,350 | $ 4,000 | $ 3,109,482 |
| Residential Behavior | $ 18,935 | $ - | $ 140,754 | $ - | $ - | $ - | $ 159,689 |
| **Subtotal: Residential** | **$ 612,690** | **$ 9,520** | **$ 427,439** | **$ 8,002,636** | **$ 75,579** | **$ 11,500** | **$ 9,139,364** |
| **COMMERCIAL & INDUSTRIAL LOST OPPORTUNITY** | | | | | | | |
| Energy Conscious Blueprint | $ 86,451 | $ 2,000 | $ 14,000 | $ 1,626,390 | $ 6,800 | $ 8,000 | $ 1,743,640 |
| **Subtotal: C&I - Lost Opportunity** | **$ 86,451** | **$ 2,000** | **$ 14,000** | **$ 1,626,390** | **$ 6,800** | **$ 8,000** | **$ 1,743,640** |
| **COMMERCIAL & INDUSTRIAL LARGE RETROFIT** | | | | | | | |
| Energy Opportunities | $ 86,451 | $ 2,000 | $ 13,315 | $ 1,025,488 | $ 14,814 | $ 4,200 | $ 1,146,268 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 49,230 | $ 2,000 | $ 12,335 | $ 442,427 | $ 5,000 | $ 2,000 | $ 512,992 |
| **Subtotal: C&I - Lost Opportunity** | **$ 135,681** | **$ 4,000** | **$ 25,650** | **$ 1,467,915** | **$ 19,814** | **$ 6,200** | **$ 1,659,259** |
| Small Business Energy Advantage | $ 76,141 | $ 1,000 | $ 5,355 | $ 165,118 | $ 2,500 | $ 2,000 | $ 252,114 |
| **Subtotal: C&I** | **$ 298,272** | **$ 7,000** | **$ 45,005** | **$ 3,259,423** | **$ 29,114** | **$ 16,200** | **$ 3,655,014** |
| **OTHER - PROGRAMS/REQUIREMENTS & PLANNING** | | | | | | | |
| **OTHER - EDUCATION** | | | | | | | |
| Educate the Public | $ 9,702 | $ 469 | $ 28,787 | $ - | $ 1,657 | $ 25,181 | $ 65,796 |
| Customer Engagement | $ - | $ - | $ 150,000 | $ - | $ - | $ - | $ 150,000 |
| Educate the Students | $ 8,303 | $ 374 | $ 32,671 | $ - | $ 862 | $ 2,954 | $ 45,164 |
| Educate the Workforce | $ 7,039 | $ 1,147 | $ 25,217 | $ - | $ - | $ 1,631 | $ 35,034 |
| **Subtotal: Education** | **$ 25,044** | **$ 1,990** | **$ 236,675** | **$ -** | **$ 2,519** | **$ 29,766** | **$ 295,994** |
| **OTHER - PROGRAMS/REQUIREMENTS** | | | | | | | |
| Financing Support - Residential | $ - | $ - | $ 86,292 | $ - | $ - | $ - | $ 86,292 |
| Financing Support - C&I | $ - | $ - | $ 75,000 | $ - | $ - | $ - | $ 75,000 |
| Research, Development and Demonstration | $ - | $ - | $ 50,000 | $ - | $ - | $ - | $ 50,000 |
| **Subtotal: Programs/Requirements** | **$ -** | **$ -** | **$ 211,292** | **$ -** | **$ -** | **$ -** | **$ 211,292** |
| **OTHER - ADMINISTRATIVE & PLANNING** | | | | | | | |
| Administration | $ 149,835 | $ - | $ 9,384 | $ - | $ - | $ - | $ 159,219 |
| Marketing Plan | $ - | $ - | $ 40,100 | $ - | $ - | $ - | $ 40,100 |
| Information Technology | $ 53,268 | $ - | $ 87,322 | $ - | $ - | $ - | $ 140,590 |
| Planning | $ 102,465 | $ - | $ - | $ - | $ - | $ - | $ 102,465 |
| Evaluation Measurement and Verification | $ - | $ - | $ 200,000 | $ - | $ - | $ - | $ 200,000 |
| Evaluation Administrator | $ - | $ - | $ 20,000 | $ - | $ - | $ - | $ 20,000 |
| Energy Efficiency Board Consultants | $ - | $ - | $ 43,333 | $ - | $ - | $ - | $ 43,333 |
| Audits - Financial and Operational | $ - | $ - | $ 10,000 | $ - | $ - | $ - | $ 10,000 |
| Performance Management Incentive | $ - | $ - | $ - | $ - | $ - | $ 627,482 | $ 627,482 |
| **Subtotal: Other** | **$ 305,568** | **$ -** | **$ 410,139** | **$ -** | **$ -** | **$ 627,482** | **$ 1,343,188** |
| **TOTAL BUDGET** | **$ 1,241,574** | **$ 18,510** | **$ 1,330,550** | **$ 11,262,059** | **$ 107,212** | **$ 684,948** | **$ 14,644,852** |

## Table C Pie Chart - Southern Connecticut Gas (2021)




| Expense Classes | | Budget | % of Budget |
|---|---|---|---|
| | | | |
| Labor | $ | 1,241,574 | 8.5% |
| Materials & Supplies | $ | 18,510 | 0.1% |
| Outside Services | $ | 1,330,550 | 9.1% |
| Incentives | $ | 11,262,059 | 76.9% |
| Marketing | $ | 107,212 | 0.7% |
| Administrative Expenses | $ | 684,948 | 4.7% |
| | | | |
| **Total** | **$** | **14,644,852** | **100.00%** |

# Table D – Southern Connecticut Gas Historical and Projected Expenditures (2019)

**Table D**

**SCG Historical and Projected $**

| Expenditures $ (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 2,056 | $ 1,766 | $ 3,816 | $ 3,541 | $ 1,898 | $ 2,731 | $ 2,804 | $ 3,217 | $ 3,322 | $ 3,043 | $ 3,109 |
| Home Energy Solutions (HES) | $ 1,402 | $ 1,285 | $ 1,666 | $ 3,344 | $ 3,029 | $ 1,477 | $ 1,648 | $ 1,425 | $ 1,945 | $ 1,742 | $ 1,755 |
| HVAC/Water Heating | $ - | $ - | $ - | $ - | $ - | $ 1,675 | $ 1,497 | $ 2,812 | $ 3,572 | $ 3,138 | $ 3,151 |
| Residential Behavior | $ - | $ - | $ - | $ 114 | $ (37) | $ 7 | $ - | $ 126 | $ 180 | $ 160 | $ 160 |
| New Construction, Additions & Major Renovations | $ 365 | $ 120 | $ 596 | $ 281 | $ 453 | $ 623 | $ 392 | $ (256) | $ 1,100 | $ 959 | $ 965 |
| **Subtotal: Residential** | **$ 3,862** | **$ 3,224** | **$ 6,116** | **$ 7,546** | **$ 5,928** | **$ 6,513** | **$ 6,341** | **$ 7,324** | **$ 10,118** | **$ 9,042** | **$ 9,139** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 1,090 | $ 1,351 | $ 697 | $ 1,483 | $ 941 | $ 1,247 | $ 956 | $ 760 | $ 2,011 | $ 1,723 | $ 1,744 |
| **Total - Lost Opportunity** | **$ 1,090** | **$ 1,351** | **$ 697** | **$ 1,483** | **$ 941** | **$ 1,247** | **$ 956** | **$ 760** | **$ 2,011** | **$ 1,723** | **$ 1,744** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 1,037 | $ 169 | $ 835 | $ 808 | $ 1,247 | $ 911 | $ 1,446 | $ 1,208 | $ 1,328 | $ 1,132 | $ 1,146 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 251 | $ 2 | $ (20) | $ 46 | $ 134 | $ 69 | $ 118 | $ 130 | $ 574 | $ 507 | $ 513 |
| Process Retrofit Project | | | | | | | | | | | |
| **Total - C&I Large Retrofit** | **$ 1,288** | **$ 171** | **$ 815** | **$ 854** | **$ 1,381** | **$ 980** | **$ 1,564** | **$ 1,339** | **$ 1,902** | **$ 1,639** | **$ 1,659** |
| Small Business Energy Advantage | $ - | $ 92 | $ 92 | $ 113 | $ 99 | $ 241 | $ 157 | $ 73 | $ 286 | $ 249 | $ 252 |
| **Subtotal: C&I** | **$ 2,378** | **$ 1,613** | **$ 1,604** | **$ 2,450** | **$ 2,421** | **$ 2,468** | **$ 2,677** | **$ 2,171** | **$ 4,200** | **$ 3,611** | **$ 3,655** |
| **OTHER-EDUCATION** | | | | | | | | | | | |
| Educate the Public | $ - | $ - | $ - | $ - | $ - | $ 218 | $ 210 | $ 68 | $ 66 | $ 66 | $ 66 |
| Customer Engagement | $ - | $ - | $ - | $ - | $ - | $ 67 | $ 17 | $ 5 | $ - | $ 150 | $ 150 |
| Educate the Students | $ - | $ - | $ - | $ - | $ - | $ 35 | $ 68 | $ 26 | $ 23 | $ 45 | $ 45 |
| Educate the Workforce | $ - | $ - | $ - | $ - | $ - | $ 30 | $ 16 | $ 13 | $ 14 | $ 35 | $ 35 |
| Smart Living Center / Science Center | $ - | $ - | $ - | $ 167 | $ 100 | $ - | $ - | $ - | $ - | $ - | $ - |
| EESmarts/K-12 Education | $ - | $ - | $ - | $ 26 | $ 70 | $ - | $ - | $ - | $ - | $ - | $ - |
| Clean Energy Communities | $ - | $ - | $ 22 | $ 47 | $ 68 | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Education** | **$ -** | **$ -** | **$ 22** | **$ 240** | **$ 238** | **$ 350** | **$ 311** | **$ 112** | **$ 102** | **$ 296** | **$ 296** |
| **OTHER-PROGRAMS/REQUIREMENTS** | | | | | | | | | | | |
| Financing Support - Residential | $ 58 | $ 77 | $ 79 | $ 87 | $ 86 | $ 77 | $ 103 | $ 8 | $ 86 | $ 86 | $ 86 |
| Financing Support - C&I | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 75 | $ 75 | $ 75 |
| Research, Development & Demonstration | $ - | $ - | $ 86 | $ - | $ - | $ 8 | $ 17 | $ 59 | $ 50 | $ 50 | $ 50 |
| Institute for Sustainable Energy | $ - | $ - | $ - | $ 37 | $ 41 | $ - | $ - | $ - | $ - | $ - | $ - |
| ESPC Project Manager | $ - | $ - | $ - | $ 6 | $ 3 | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Loan Program | $ - | $ - | $ 5 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| EE Loan Defaults | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| C&I Self Funding | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Other Funding Requests | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| **Subtotal: Programs/Requirements** | **$ 58** | **$ 77** | **$ 169** | **$ 130** | **$ 130** | **$ 85** | **$ 120** | **$ 66** | **$ 211** | **$ 211** | **$ 211** |
| **OTHER-ADMINSTRATIVE & PLANNING** | | | | | | | | | | | |
| Administration | $ - | $ - | $ 89 | $ 127 | $ 170 | $ 130 | $ 172 | $ 143 | $ 150 | $ 155 | $ 159 |
| Marketing Plan | $ - | $ - | $ - | $ 97 | $ 85 | $ 109 | $ 73 | $ 30 | $ 15 | $ 31 | $ 40 |
| Planning | $ 33 | $ 208 | $ 151 | $ 99 | $ 102 | $ 141 | $ 169 | $ 98 | $ 97 | $ 99 | $ 102 |
| Evaluation Measurement and Verification | $ 14 | $ 123 | $ 24 | $ 141 | $ 161 | $ 200 | $ 200 | $ 218 | $ 218 | $ 200 | $ 200 |
| Evaluation Administrator | $ - | $ - | $ - | $ 26 | $ 26 | $ 20 | $ 20 | $ 19 | $ 19 | $ 20 | $ 20 |
| Information Technology | $ 31 | $ 32 | $ 14 | $ 101 | $ 210 | $ 109 | $ 106 | $ 140 | $ 138 | $ 139 | $ 141 |
| Energy Efficiency Board Consultants | $ 12 | $ 22 | $ 43 | $ 24 | $ 15 | $ 43 | $ 43 | $ 32 | $ 32 | $ 43 | $ 43 |
| Audits - Financial and Operational | $ - | $ - | $ - | $ - | $ - | $ - | $ 10 | $ 4 | $ 10 | $ 10 | $ 10 |
| Performance Management Incentive | $ - | $ - | $ 655 | $ 694 | $ 596 | $ 687 | $ 435 | $ 709 | $ 686 | $ 620 | $ 627 |
| **Subtotal: Administrative & Planning** | **$ 91** | **$ 385** | **$ 977** | **$ 1,310** | **$ 1,365** | **$ 1,439** | **$ 1,228** | **$ 1,393** | **$ 1,363** | **$ 1,318** | **$ 1,343** |
| **TOTAL** | **$ 6,389** | **$ 5,300** | **$ 8,888** | **$ 11,676** | **$ 10,082** | **$ 10,855** | **$ 10,677** | **$ 11,067** | **$ 15,995** | **$ 14,478** | **$ 14,645** |

# Table D1 – Southern Connecticut Gas Annual & Lifetime Savings CCF (2010-2021)

**Table D1**

**SCG Historical and Projected Annual and Lifetime ccf**

| Annual ccf (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES Income Eligible - Weatherization | 361 | 264 | 635 | 459 | 186 | 205 | 229 | 326 | 267 | 242 | 247 |
| Home Energy Solutions (HES) | 243 | 231 | 284 | 501 | 388 | 187 | 168 | 156 | 186 | 302 | 162 |
| HVAC/Water Heating | | | | | | 232 | 197 | 407 | 331 | 295 | 296 |
| Residential Behavior | - | - | - | - | - | - | - | - | 100 | 100 | 100 |
| New Construction, Additions & Major Renovations | 24 | 8 | 19 | 30 | 24 | 53 | 15 | 19 | 112 | 96 | 97 |
| **Subtotal: Residential** | **641** | **509** | **945** | **1,035** | **679** | **677** | **609** | **908** | **996** | **1,036** | **901** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 165 | 387 | 290 | 201 | 138 | 411 | 134 | 99 | 287 | 238 | 225 |
| **Total - Lost Opportunity** | **165** | **387** | **290** | **201** | **138** | **411** | **134** | **99** | **287** | **238** | **225** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 126 | 261 | 222 | 508 | 540 | 727 | 438 | 585 | 265 | 207 | 196 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 58 | 36 | 86 | 2 | 5 | 47 | 108 | 243 | 477 | 477 | 364 |
| **Total - C&I Large Retrofit** | **185** | **297** | **308** | **510** | **545** | **774** | **546** | **828** | **742** | **684** | **560** |
| Small Business Energy Advantage | - | 27 | 11 | 37 | 30 | 68 | 42 | 33 | 101 | 78 | 73 |
| **Subtotal: C&I** | **350** | **711** | **609** | **748** | **713** | **1,253** | **722** | **960** | **1,130** | **1,000** | **858** |
| **TOTAL** | **991** | **1,220** | **1,554** | **1,783** | **1,392** | **1,930** | **1,331** | **1,868** | **2,126** | **2,036** | **1,759** |

| Lifetime ccf (000) | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | 5,637 | 4,942 | 13,533 | 9,680 | 3,903 | 4,333 | 4,941 | 7,151 | 5,889 | 5,342 | 5,434 |
| Home Energy Solutions (HES) | 4,180 | 4,359 | 5,613 | 10,147 | 7,797 | 3,970 | 3,425 | 3,159 | 3,939 | 6,414 | 3,435 |
| HVAC/Water Heating | | | | | | 4,619 | 3,992 | 8,147 | 6,612 | 5,892 | 5,910 |
| Residential Behavior | - | - | - | - | - | - | - | - | 200 | 200 | 200 |
| New Construction, Additions & Major Renovations | 600 | 188 | 457 | 705 | 593 | 1,272 | 370 | 473 | 2,812 | 2,406 | 2,415 |
| Water Heating | 263 | 111 | 136 | 861 | 1,553 | - | - | - | - | - | - |
| **Subtotal: Residential** | **10,680** | **9,600** | **19,739** | **21,393** | **13,846** | **14,194** | **12,728** | **18,930** | **19,452** | **20,254** | **17,394** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 2,555 | 5,325 | 4,484 | 3,339 | 2,194 | 7,539 | 2,107 | 1,660 | 3,923 | 3,249 | 3,070 |
| **Total - Lost Opportunity** | **2,555** | **5,325** | **4,484** | **3,339** | **2,194** | **7,539** | **2,107** | **1,660** | **3,923** | **3,249** | **3,070** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 1,834 | 3,087 | 2,322 | 5,158 | 6,421 | 7,630 | 4,445 | 6,924 | 3,054 | 2,387 | 2,257 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 804 | 307 | 430 | 10 | 25 | 343 | 559 | 1,337 | 3,321 | 3,321 | 2,535 |
| **Total - C&I Large Retrofit** | **2,638** | **3,394** | **2,752** | **5,168** | **6,446** | **7,973** | **5,004** | **8,261** | **6,376** | **5,708** | **4,792** |
| Small Business Energy Advantage | - | 378 | 152 | 408 | 427 | 895 | 438 | 382 | 1,049 | 806 | 759 |
| **Subtotal: C&I** | **5,193** | **9,097** | **7,388** | **8,915** | **9,067** | **16,407** | **7,549** | **10,303** | **11,347** | **9,764** | **8,621** |
| **TOTAL** | **15,873** | **18,697** | **27,127** | **30,308** | **22,913** | **30,601** | **20,277** | **29,233** | **30,799** | **30,018** | **26,015** |

## Table D2 – Southern Connecticut Gas Annual & Lifetime Cost Rates $/CCF (2011-2021)

**Table D2**

**SCG Historical and Projected Annual and Lifetime Cost Rates**

**Annual $/ccf**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 5.698 | $ 6.679 | $ 6.009 | $ 7.715 | $ 10.204 | $ 13.322 | $ 12.245 | $ 9.868 | $ 12.427 | $ 12.551 | $ 12.606 |
| Home Energy Solutions (HES) | $ 5.767 | $ 5.569 | $ 5.866 | $ 6.675 | $ 7.807 | $ 7.898 | $ 9.810 | $ 9.135 | $ 10.473 | $ 5.762 | $ 10.838 |
| HVAC/Water Heating | | | | | | $ 7.220 | $ 7.599 | $ 6.909 | $ 10.805 | $ 10.652 | $ 10.662 |
| Residential Behavior | | | | | | | | $ - | $ 1.795 | $ 1.595 | $ 1.596 |
| New Construction, Additions & Major Renovations | $15.203 | $15.287 | $ 31.464 | $ 9.449 | $ 18.875 | $ 11.755 | $ 26.133 | $ (13.451) | $ 9.777 | $ 9.958 | $ 9.987 |
| Water Heating | $ 3.047 | $ 8.949 | $ 5.493 | $ 5.844 | $ 7.222 | | | | | | |
| **Subtotal: Residential** | **$ 6.025** | **$ 6.335** | **$ 6.473** | **$ 7.289** | **$ 8.730** | **$ 9.620** | **$ 10.412** | **$ 8.066** | **$ 10.157** | **$ 8.730** | **$ 10.146** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 6.600 | $ 3.486 | $ 2.403 | $ 7.378 | $ 6.819 | $ 3.034 | $ 7.134 | $ 7.676 | $ 7.006 | $ 7.245 | $ 7.762 |
| **Total - Lost Opportunity** | **$ 6.600** | **$ 3.486** | **$ 2.403** | **$ 7.378** | **$ 6.819** | **$ 3.034** | **$ 7.134** | **$ 7.676** | **$ 7.006** | **$ 7.245** | **$ 7.762** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 8.204 | $ 0.647 | $ 3.761 | $ 1.591 | $ 2.309 | $ 1.253 | $ 3.301 | $ 2.065 | $ 5.012 | $ 5.466 | $ 5.855 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 4.289 | $ 0.057 | $ (0.233) | $ 22.277 | $ 26.800 | $ 1.468 | $ 1.093 | $ 0.537 | $ 1.203 | $ 1.063 | $ 1.408 |
| **Total - C&I Large Retrofit** | **$ 6.965** | **$ 0.576** | **$ 2.646** | **$ 1.675** | **$ 2.534** | **$ 1.266** | **$ 2.864** | **$ 1.617** | **$ 2.562** | **$ 2.395** | **$ 2.962** |
| Small Business Energy Advantage | $ - | $ 3.405 | $ 8.364 | $ 3.054 | $ 3.300 | $ 3.544 | $ 3.738 | $ 2.208 | $ 2.839 | $ 3.207 | $ 3.451 |
| **Subtotal: C&I** | **$ 6.793** | **$ 2.269** | **$ 2.634** | **$ 3.276** | **$ 3.396** | **$ 1.970** | **$ 3.708** | **$ 2.262** | **$ 3.716** | **$ 3.612** | **$ 4.261** |

**Lifetime $/ccf**

| | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | $ 0.365 | $ 0.357 | $ 0.282 | $ 0.366 | $ 0.486 | $ 0.630 | $ 0.567 | $ 0.450 | $ 0.564 | $ 0.570 | $ 0.572 |
| Home Energy Solutions (HES) | $ 0.335 | $ 0.295 | $ 0.297 | $ 0.330 | $ 0.388 | $ 0.372 | $ 0.481 | $ 0.451 | $ 0.494 | $ 0.272 | $ 0.511 |
| HVAC/Water Heating | | | | | | $ 0.363 | $ 0.375 | $ 0.345 | $ 0.540 | $ 0.533 | $ 0.533 |
| Residential Behavior | | | | | | | | $ - | $ 0.898 | $ 0.798 | $ 0.798 |
| New Construction, Additions & Major Renovations | $ 0.608 | $ 0.638 | $ 1.304 | $ 0.399 | $ 0.764 | $ 0.490 | $ 1.059 | $ (0.540) | $ 0.391 | $ 0.398 | $ 0.399 |
| Water Heating | $ 0.152 | $ 0.482 | $ 0.283 | $ 0.309 | $ 0.377 | | | | | | |
| **Subtotal: Residential** | **$ 0.362** | **$ 0.336** | **$ 0.310** | **$ 0.353** | **$ 0.428** | **$ 0.459** | **$ 0.498** | **$ 0.387** | **$ 0.520** | **$ 0.446** | **$ 0.525** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | $ 0.427 | $ 0.254 | $ 0.155 | $ 0.444 | $ 0.429 | $ 0.165 | $ 0.454 | $ 0.458 | $ 0.513 | $ 0.530 | $ 0.568 |
| **Total - Lost Opportunity** | **$ 0.427** | **$ 0.254** | **$ 0.155** | **$ 0.444** | **$ 0.429** | **$ 0.165** | **$ 0.454** | **$ 0.458** | **$ 0.513** | **$ 0.530** | **$ 0.568** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | $ 0.565 | $ 0.055 | $ 0.360 | $ 0.157 | $ 0.194 | $ 0.119 | $ 0.325 | $ 0.174 | $ 0.435 | $ 0.474 | $ 0.508 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | $ 0.312 | $ 0.007 | $ (0.047) | $ 4.455 | $ 5.360 | $ 0.201 | $ 0.211 | $ 0.098 | $ 0.173 | $ 0.153 | $ 0.202 |
| Process Retrofit Project | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 1.000 | $ 2.000 | $ 3.000 |
| **Total - C&I Large Retrofit** | **$ 0.488** | **$ 0.050** | **$ 0.296** | **$ 0.165** | **$ 0.214** | **$ 0.123** | **$ 0.313** | **$ 0.162** | **$ 0.298** | **$ 0.287** | **$ 0.346** |
| Small Business Energy Advantage | $ - | $ 0.243 | $ 0.605 | $ 0.277 | $ 0.232 | $ 0.269 | $ 0.358 | $ 0.191 | $ 0.273 | $ 0.309 | $ 0.332 |
| **Subtotal C&I** | **$ 0.458** | **$ 0.177** | **$ 0.217** | **$ 0.275** | **$ 0.267** | **$ 0.150** | **$ 0.355** | **$ 0.211** | **$ 0.370** | **$ 0.370** | **$ 0.424** |

# Table D3 – Southern Connecticut Gas Units (2011–2021)

**Table D3**

**SCG Historical and Projected Units**

| Units | 2011 Actual | 2012 Actual | 2013 Actual | 2014 Actual | 2015 Actual | 2016 Actual | 2017 Actual | 2018 Actual | 2019 Goal | 2020 Goal | 2021 Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RESIDENTIAL** | | | | | | | | | | | |
| HES-Income Eligible - Weatherization | 3,268 | 2,479 | 3,647 | 2,395 | 1,187 | 1,329 | 1,319 | 1,981 | 2,707 | 2,455 | 2,498 |
| Home Energy Solutions (HES) | 2,369 | 2,049 | 2,619 | 3,957 | 3,758 | 1,783 | 1,600 | 1,245 | 1,763 | 2,870 | 1,537 |
| HVAC/Water Heating | - | - | - | - | - | 3,099 | 2,128 | 4,778 | 6,018 | 5,363 | 5,379 |
| Residential Behavior | - | - | - | - | - | - | - | 15,000 | 15,000 | 15,000 | 15,000 |
| New Construction, Additions & Major Renovations | 114 | 40 | 116 | 336 | 54 | 294 | 43 | 366 | 504 | 431 | 433 |
| Water Heating | 235 | 80 | 155 | 747 | 1,218 | | | | | | |
| **Subtotal: Residential** | **5,986** | **4,648** | **6,537** | **7,435** | **6,217** | **6,505** | **5,090** | **23,370** | **25,991** | **26,119** | **24,847** |
| **COMMERCIAL & INDUSTRIAL** | | | | | | | | | | | |
| Energy Conscious Blueprint | 46 | 90 | 100 | 87 | 40 | 67 | 32 | 123 | 157 | 157 | 123 |
| **Total - Lost Opportunity** | **46** | **90** | **100** | **87** | **40** | **67** | **32** | **123** | **157** | **157** | **123** |
| **C&I LARGE RETROFIT** | | | | | | | | | | | |
| Energy Opportunities | 11 | 36 | 31 | 40 | 22 | 28 | 18 | 37 | 35 | 28 | 26 |
| Business & Energy Sustainability (O&M, RCx, BSC, CSP/SEM) | 3 | 4 | 3 | 4 | 2 | 9 | 3 | 34 | 26 | 21 | 19 |
| **Total - C&I Large Retrofit** | **14** | **40** | **34** | **44** | **24** | **37** | **21** | **71** | **61** | **48** | **46** |
| Small Business Energy Advantage | - | 27 | 72 | 57 | 28 | 51 | 72 | 85 | 37 | 37 | 37 |
| **Subtotal: C&I** | **60** | **157** | **206** | **188** | **92** | **155** | **125** | **279** | **255** | **243** | **206** |
| **TOTAL** | **6,046** | **4,805** | **6,743** | **7,623** | **6,309** | **6,660** | **5,215** | **23,649** | **26,247** | **26,362** | **25,053** |

# Southern Connecticut Gas PMI (2019)

**SOUTHERN CONNECTICUT GAS COMPANY**

**2019 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2019 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is $686,163

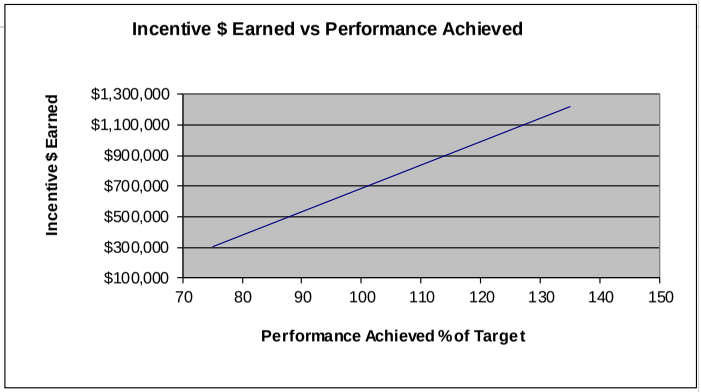
This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including ECMB costs, Audit Costs or Management Incentive).

Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pretax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $304,961 |
| 85 | 3.0% | $457,442 |
| 95 | 4.0% | $609,923 |
| **100** | **4.5%** | **$686,163** |
| 105 | 5.0% | $762,403 |
| 115 | 6.0% | $914,884 |
| 125 | 7.0% | $1,067,365 |
| 135 | 8.0% | $1,219,845 |
| **Total Original Budget*** | **$15,248,067** | |

*Does not include Incentive, EEB costs, and Audit.



## Southern Connecticut Gas PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 10,118,139 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs $13,056,604 | 0.195 | $133,802 |
| | | HES-Income Eligible | 5,889,319 | | | | |
| | | Home Energy Solutions | 3,939,131 | | | | |
| | | HVAC/Water Heating | 6,611,595 | | | | |
| | | New Construction | 2,812,268 | | | | |
| | | Total Lifetime Savings (ccf) | 19,452,473 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6712 | | | | |
| | | Total Residential Gas Benefit: | $13,056,604 | | | | |
| | | Net Residential Gas Benefit: | $2,938,464 | | $2,938,464 | 0.195 | $133,802 |
| HES | $ 1,944,962 | Achieve CCF savings per single-family home. This is based on 2018 actuals adjusted to 2019 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings / single family home. | 0.060 | $41,170 |
| HES-Income Eligible | $ 3,321,827 | Annual ccf savings | | Annual ccf savings | 267,316 | 0.030 | $20,585 |

## Southern Connecticut Gas PMI (2019) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 4,199,577 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I Programs | Gas Benefit from all C&I programs $10,989,939 | 0.210 | $144,094 |
| | | Energy Conscious Blueprint | 3,922,758 | | | | |
| | | Energy Opportunities | 3,054,363 | | | | |
| | | O&M | 3,321,202 | | | | |
| | | Small Business Energy Advantage | 1,048,638 | | | | |
| | | Total Lifetime Savings (ccf) | 11,346,961 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9685 | | | | |
| | | Total C&I Gas Benefit: | $10,989,939 | | | | |
| | | Net C&I Gas Benefit: | $6,790,363 | | $6,790,363 | 0.210 | $144,094 |
| Small Business Energy Advantage | $ 286,415 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including more than one end use with SEM counting as an end use. This is based on 2018 Actual Results plus 5%. | | % of Gas Projects | 20% of signed projects | 0.050 | $34,308 |
| Energy Conscious Blueprint/ Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering / all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use with SEM counting as more than one end use.- based on 2018 Actual Results plus 5% | | % of Gas Projects | 25% of signed projects | 0.050 | $34,308 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$686,163** |

# Southern Connecticut Gas PMI (2020)

**SOUTHERN CONNECTICUT GAS COMPANY**

**2020 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2020 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is $620,297

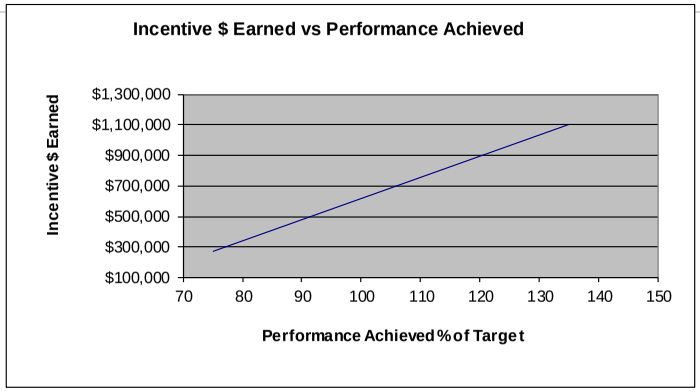
This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including ECMB costs, Audit Costs or Management Incentive).

Goals will be prorated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $275,687 |
| 85 | 3.0% | $413,531 |
| 95 | 4.0% | $551,375 |
| **100** | **4.5%** | **$620,297** |
| 105 | 5.0% | $689,218 |
| 115 | 6.0% | $827,062 |
| 125 | 7.0% | $964,906 |
| 135 | 8.0% | $1,102,749 |
| | | |
| Total Original Budget* | $13,784,367 | |

*Does not include Incentive, EEB costs, and Audit.



## Southern Connecticut Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 9,041,855 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs $13,804,391 | 0.195 | $120,958 |
| | | HES-Income Eligible | 5,341,574 | | | | |
| | | Home Energy Solutions | 6,413,707 | | | | |
| | | HVAC/Water Heating | 5,892,232 | | | | |
| | | New Construction, Additions & Major Renovations | 2,406,445 | | | | |
| | | Total Lifetime Savings (ccf) | 20,254,118 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6816 | | | | |
| | | Total Residential Gas Benefit: | $13,804,391 | | | | |
| | | Net Residential Gas Benefit: | $4,762,537 | | $4,762,537 | 0.195 | $120,958 |
| HES | $ 1,742,346 | Achieve CCF savings per single family home. This is based on 2019 actuals adjusted to 2020 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings/single-family home. | 0.060 | $37,218 |
| HES-Income Eligible | $ 3,043,129 | Annual ccf savings | | Annual ccf Savings | 242,454 | 0.030 | $18,609 |

## Southern Connecticut Gas PMI (2020) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 3,610,753 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I programs | Gas Benefit from all C&I programs $9,461,266 | 0.210 | $130,262 |
| | | Energy Conscious Blueprint | 3,249,336 | | | | |
| | | Energy Opportunities | 2,387,107 | | | | |
| | | O&M | 3,321,202 | | | | |
| | | Small Business | 806,352 | | | | |
| | | Total Lifetime Savings (ccf) | 9,763,997 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9690 | | | | |
| | | Total C&I Gas Benefit: | $9,461,266 | | | | |
| | | Net C&I Gas Benefit: | $5,850,513 | | $5,850,513 | 0.210 | $130,262 |
| Small Business Energy Advantage | $ 248,811 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including more than one end use with SEM counting as an end use. This is based on 2019 Actual Results plus 5%. | | % of Gas Projects | 20% of Signed Pprojects | 0.050 | $31,015 |
| Energy Conscious Blueprint/ Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use with SEM counting as more than one end use. This is based on 2019 Actual Results plus 5%. | | % of Gas Projects | 25% of Signed Projects | 0.050 | $31,015 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$620,297** |

# Southern Connecticut Gas PMI (2021)

**SOUTHERN CONNECTICUT GAS COMPANY**

**2021 Management Incentive Performance Indicators and Incentive Matrix**

Provided below is the 2021 Incentive Matrix with Performance Indicators.

The Utility Performance Incentive is $627,482

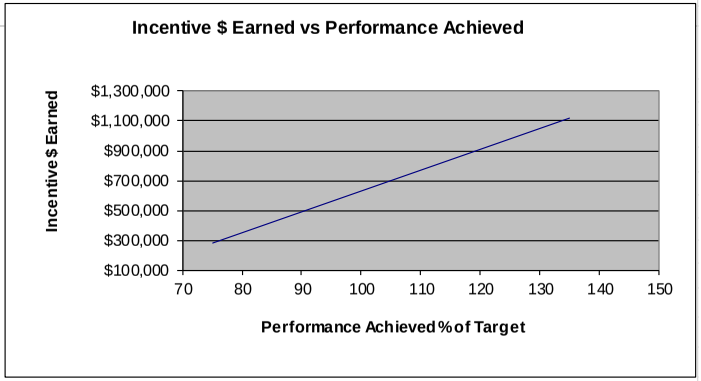
This calculated is based on achieving 100% of all performance targets and earning a target incentive of 4.5% of EE budgets (not including EzrB costs, Audit Costs or Management Incentive).

Goals will be pro-rated based on actual over/under spend of budget.

The actual incentive earned will be determined by the performance achieved in each of the Incentive Metrics identified below, based on the following Performance Index:

| Performance % | Pre-tax Incentive | Pre-tax Incentive |
|---|---|---|
| 75 | 2.0% | $278,881 |
| 85 | 3.0% | $418,321 |
| 95 | 4.0% | $557,762 |
| **100** | **4.5%** | **$627,482** |
| 105 | 5.0% | $697,202 |
| 115 | 6.0% | $836,642 |
| 125 | 7.0% | $976,083 |
| 135 | 8.0% | $1,115,523 |
| **Total Original Budget*** | **$13,944,038** | |

*Does not include Incentive, EEB costs, and Audit.



## Southern Connecticut Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| Residential Program Budgets | $ 9,139,364 | Lifetime Savings (ccf): | | Total Gas Benefit from all Residential programs | Gas Benefit from all Residential programs $11,862,886 | 0.195 | $122,359 |
| | | HES-Income Eligible | 5,434,176 | | | | |
| | | Home Energy Solutions | 3,434,509 | | | | |
| | | HVAC/Water Heating | 5,910,209 | | | | |
| | | New Construction, Additions & Major Renovations | 2,414,880 | | | | |
| | | Total Lifetime Savings (ccf) | 17,393,934 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.6820 | | | | |
| | | Total Residential Gas Benefit: | $11,862,886 | | | | |
| | | Net Residential Gas Benefit: | $2,723,522 | | $2,723,522 | 0.195 | $122,359 |
| HES | $ 1,754,838 | Achieve CCF savings per single family home. This is based on 2020 actuals adjusted to 2021 CT PSD plus 2.0%. | | ccf/home | Achieve CCF savings/single-family home | 0.060 | $37,649 |
| HES-Income Eligible | $ 3,109,482 | Annual ccf savings | | Annual ccf Savings | 246,657 | 0.030 | $18,824 |

## Southern Connecticut Gas PMI (2021) – continued

| SECTOR Program | | Performance Indicators | | Incentive Metrics | | | |
|---|---|---|---|---|---|---|---|
| | | | | Incentive Metric | Target Goal | Weight | Incentive |
| C&I Program Budgets | $ 3,655,014 | Lifetime Savings (ccf): | | Total Gas Benefit from all C&I programs | Gas Benefit from all C&I programs $7,978,180 | 0.210 | $131,771 |
| | | Energy Conscious Blueprint | 3,069,685 | | | | |
| | | Energy Opportunities | 2,257,354 | | | | |
| | | O&M | 2,534,753 | | | | |
| | | Small Business Energy Advantage | 759,319 | | | | |
| | | Total Lifetime Savings (ccf) | 8,621,111 | | | | |
| | | Present Value Lifetime Savings (ccf) | $0.9254 | | | | |
| | | Total C&I Gas Benefit: | $7,978,180 | | | | |
| | | Net C&I Gas Benefit: | $4,323,166 | | $4,323,166 | 0.210 | $131,771 |
| Small Business Energy Advantage | $ 252,114 | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measure and service bundles, energy management,and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including more than one end use with SEM counting as an end use. This is based on 2020 Actual Results plus 5%. | | % of Gas Projects | 20% of Signed Projects | 0.050 | $31,374 |
| Energy Conscious Blueprint/ Energy Opportunities | | Develop and implement comprehensive offerings. Offerings will consist of a tailored combination of measures and service bundles, technical assistance for SEM, benchmarking and financing where appropriate (especially for high-cost, long payback measures). Calculated as signed projects that included comprehensive offerings at time of offering/all signed projects (excluding rebates). Comprehensive shall be defined as including at least one end use with SEM counting as more than one end use. This is based on 2020 Actual Results plus 5%. | | % of Gas Projects | 25% of Signed Projects | 0.050 | $31,374 |
| **Total Incentive $ Residential and C&I** | | | | | | **1.000** | **$627,482** |

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