

The Regional Greenhouse Gas Initiative  
*An Initiative of Eastern States of the United States*

The Investment of RGGI Proceeds in 2020

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## Executive Summary

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Proceeds from the Regional Greenhouse Gas Initiative (RGGI) have powered significant investment in the energy future of participating Eastern states. This report reviews the benefits of programs funded in 2020 by \$196 million in RGGI investments, which have reduced harmful carbon dioxide (CO<sub>2</sub>) emissions while spurring local economic growth. The lifetime effects of 2020 RGGI investments are projected to avoid the release of 6.6 million short tons of carbon emissions. RGGI-funded programs also save consumers and businesses money, create jobs, and provide targeted assistance to low-income communities throughout the RGGI region. RGGI investments in 2020 are estimated to return \$1.9 billion in lifetime energy bill savings to 65,000 households and 800 businesses that participated in programs funded by RGGI proceeds, while over 720,000 households and 38,000 businesses received direct bill assistance in 2020. As a whole, the RGGI states have reduced power sector CO<sub>2</sub> emissions over 50% since 2008, while the region's gross domestic product has continued to grow.

The benefits tracked in this report arise from RGGI investments in energy efficiency, clean and renewable energy, beneficial electrification, direct bill assistance, and greenhouse gas abatement. Any benefits associated with other funds (such as transfers to general funds) are outside the scope of this report.

RGGI states have individual discretion as to how they invest proceeds. Investments fall into five major categories:

**Energy efficiency** makes up 35% of 2020 RGGI investments and 53% of cumulative investments. Programs funded by these investments in 2020 are expected to return about \$1.2 billion in lifetime energy bill savings to more than 56,000 participating households and over 700 businesses in the region and avoid the release of 4.6 million short tons of CO<sub>2</sub>.

**Clean and renewable energy** makes up 18% of 2020 RGGI investments and 14% of cumulative investments. RGGI investments in these technologies in 2020 are expected to return over \$600 million in lifetime energy bill savings and avoid the release of more than 1.7 million short tons of CO<sub>2</sub>.

**Beneficial electrification** makes up 11% of 2020 RGGI investments and 3% of cumulative investments. RGGI investments in beneficial electrification in 2020 are expected to avoid the release of 177,000 short tons of CO<sub>2</sub> and return nearly \$90 million in lifetime savings.

**Greenhouse gas abatement** makes up 5% of 2020 RGGI investments and 8% of cumulative investments. RGGI investments in greenhouse gas (GHG) abatement in 2020 are expected to avoid the release of more than 160,000 short tons of CO<sub>2</sub> and to return over \$51 million in lifetime savings.

**Direct bill assistance** makes up 19% of 2020 RGGI investments and 16% of cumulative investments. Direct bill assistance programs funded through RGGI in 2020 have returned over \$37 million in credits or assistance to consumers.

This is the first version of this report which includes beneficial electrification as its own investment category. In previous versions of this report, investments in beneficial electrification programs were included within the other major investment categories.

These investments, in concert with the broader energy policies in each RGGI state, have enabled the region to continue to set a national example in driving decarbonization while strengthening economic resilience.

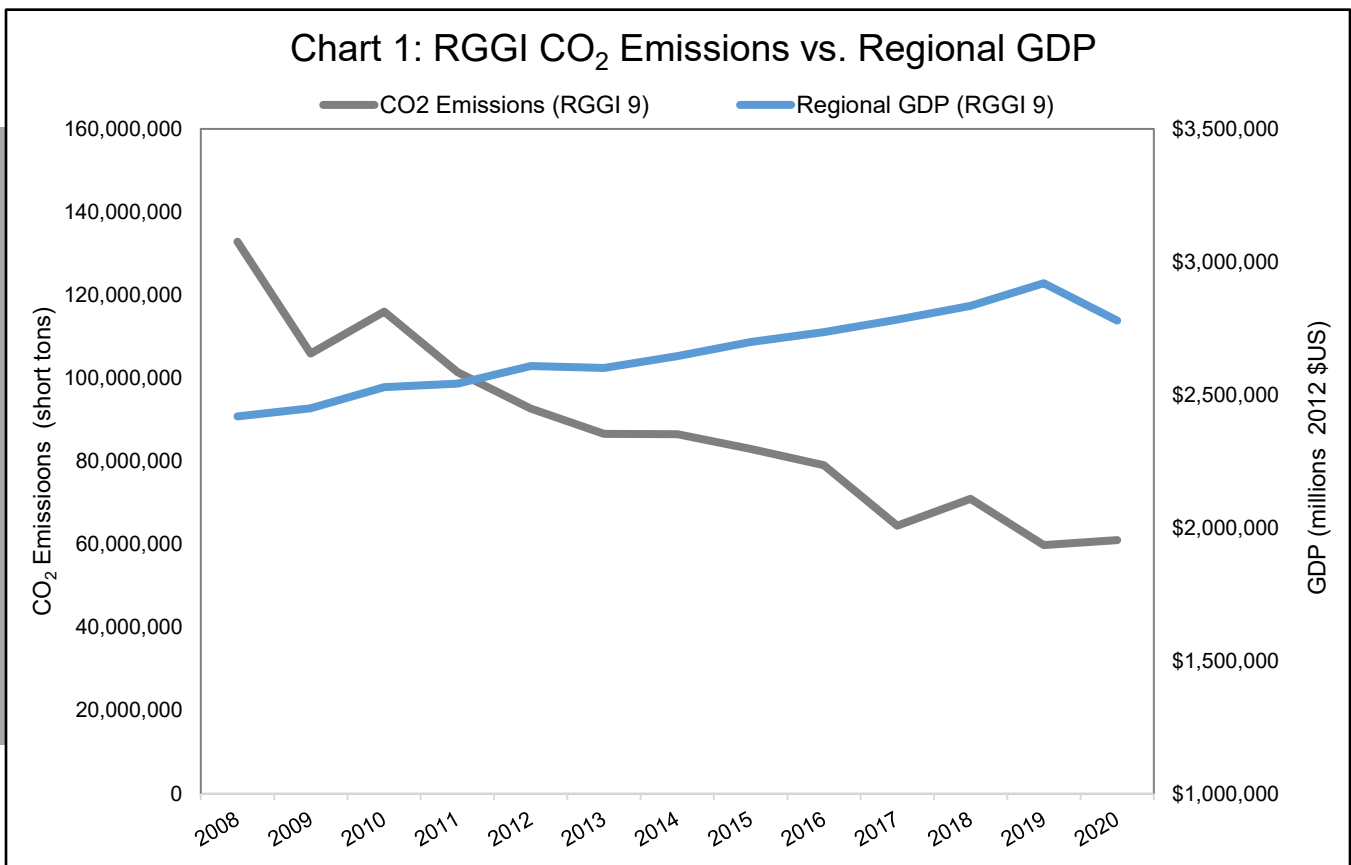
## Introduction

### The Regional Greenhouse Gas Initiative

RGGI is the nation's first multi-state initiative to reduce power sector CO<sub>2</sub> emissions. The RGGI states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia) establish a regional cap on the amount of CO<sub>2</sub> emissions that power plants can emit by issuing a limited number of tradable CO<sub>2</sub> allowances. Each allowance represents an authorization for a regulated power plant to emit one short ton of CO<sub>2</sub>. Individual CO<sub>2</sub> budget trading programs in each RGGI state together create a regional market for CO<sub>2</sub> allowances. This allows market forces to determine the most cost-effective means of reducing emissions, and creates market certainty to drive long-term investments in clean energy. Each state's independent regulations are based on the RGGI Model Rule. New Jersey participated in RGGI from 2009 to 2011, and resumed its participation starting in 2020. RGGI investments in this report include the ten participating RGGI states in 2020.

The RGGI states have distributed 90% of CO<sub>2</sub> allowances through quarterly regional auctions, generating proceeds for reinvestment. The remaining allowances are allocated to state set-aside accounts, from which allowances may be distributed according to state-specific regulations or auctioned in future years. Each RGGI state has full discretion over the investment of RGGI proceeds and the administration of RGGI-funded programs.

The nine RGGI states that participated from 2009-2020 experienced a reduction of over 90 million short tons of annual power sector carbon emissions, even as the regional economy grew (see **Chart 1**).<sup>1</sup> This represents a reduction in power sector carbon emissions of over 50%.



<sup>1</sup> The nine RGGI states that participated for the entire 2009-2020 time period are CT, DE, ME, MD, MA, NH, NY, RI, and VT. The reduction in regional GDP in 2020 coincides with the onset of the COVID-19 pandemic.

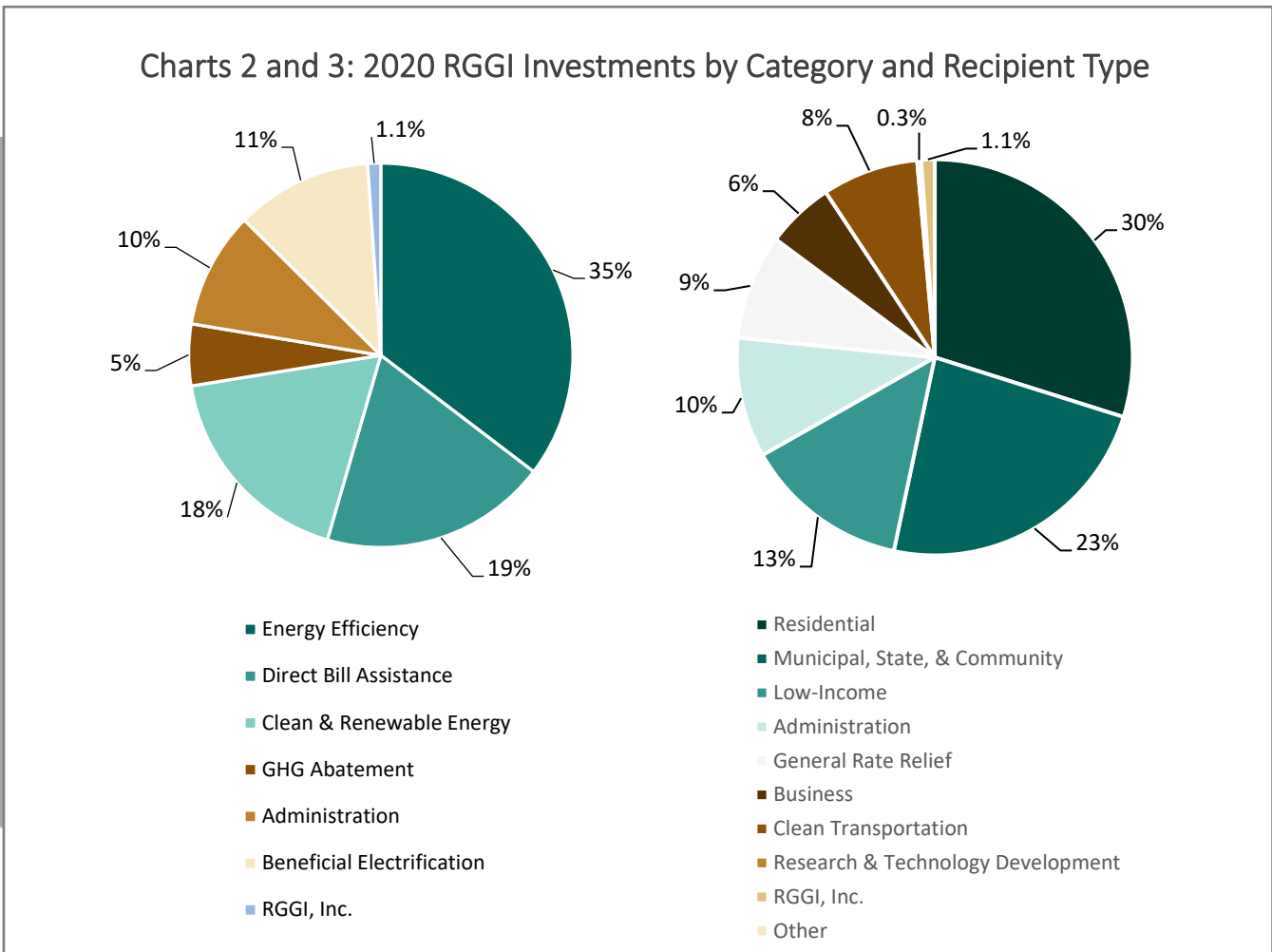
## 2020 RGGI Investments

This report estimates the benefits, such as energy bill savings and avoided CO<sub>2</sub> emissions, that arise from \$196 million in 2020 RGGI investments. RGGI investments as defined within this report include investments in energy efficiency, clean and renewable energy, beneficial electrification, greenhouse gas abatement, and direct bill assistance, as well as administrative costs associated with these programs. This is the first version of this report which includes beneficial electrification as a separate category for the investment of proceeds. In previous reports, investments into beneficial electrification programs were included within the other major investment categories. This report focuses on 2020 annual investments. RGGI investments throughout the region cover a wide variety of programs.

**Chart 2** shows 2020 RGGI investments divided among major program categories. **Chart 3** illustrates the same 2020 funds divided according to the type of end-user who benefits from the program or ultimately receives funding.

Many of the categories in Chart 3 can be seen as subcategories of those in Chart 2. Direct Bill Assistance is split between assistance for low-income consumers, and general rate relief for all consumers. GHG Abatement includes a wide variety of program types, including research funding and clean transportation programs. The Energy Efficiency and Clean Energy program categories mainly flow to residential, business, and municipal, state, & community recipients, with a substantial number of programs specifically serving low-income households.

Due to rounding, pie charts may not sum to exactly 100%.





In 2020, RGGI investments have saved participants money on their energy bills, created jobs, and reduced carbon emissions. Over their lifetime they will save participants an estimated \$2 billion on energy bills, and avoid the emission of 6.7 million short tons of harmful CO<sub>2</sub> emissions. For details see **Table 1**.

RGGI investments benefit more than just those who directly participate in RGGI-funded programs. For example, money not spent on energy by families and businesses can be used in other ways that boost the economy. Reduced demand for energy also keeps power prices lower for everyone, and avoids investments in costly infrastructure to meet peak demand.

RGGI states have long been and continue to be leaders in energy efficiency, with millions of MWh saved. As the region’s generation becomes cleaner, many states are also investing in beneficial electrification programs, which reduce carbon emissions by replacing direct fossil fuel use with electric power. Often, these programs result in an increase in MWh, but do reduce carbon emissions overall. As the grid becomes cleaner, the emissions from electrified appliances become cleaner, as opposed to the fixed emissions intensity of fossil-powered appliances.

Avoided MWh continues to be a relevant metric for energy efficiency and clean and renewable energy programs, and will be reported in the tables associated with these respective investment categories.

Category	Annual Benefits of 2020 Investments	Lifetime Benefits of 2020 Investments
 Short Tons CO <sub>2</sub> Avoided	399,493	6,665,490
 Energy Bill Savings	\$143,819,935	\$1,957,732,399








One of RGGI’s strengths is the discretion held by each state to invest RGGI auction proceeds according to state-specific goals. This can present challenges for data collection; for example, a program offering discounts on efficient lightbulbs will collect quite different data from a program helping businesses to install large-scale equipment, or funding the installation of electric car charging stations. The data in this report are compiled using the output of state-based and program-based estimates for actual and projected savings and benefits. Methods for estimating program benefits differ across states and across programs. The appendix at the end of this report contains more details on how each metric is estimated for different types of programs.

States may also combine RGGI funds with funds from other sources. In many cases, the reported benefits from the program are adjusted based on the percentage of the program’s funding that comes from RGGI. In cases where states determine a program could not have gone forward without RGGI funds, states will report the full benefits associated with that program.

## Energy Efficiency

Energy efficiency remains the largest portion of 2020 RGGI investments, at 35%. Over the lifetime of the installed measures, 2020 RGGI investments in energy efficiency are projected to save participants nearly \$1.2 billion on energy bills, providing benefits to more than 56,000 participating households and over 700 participating businesses. They are also projected to avoid the release of 4.6 million short tons of CO<sub>2</sub> (see **Table 2**).

**Table 2: Benefits of 2020 RGGI Investments in Energy Efficiency**

Category	Annual Benefits of 2020 Investments	Lifetime Benefits of 2020 Investments
 Participating Households	56,412	n/a
 Participating Businesses	737	n/a
 Increased Employment	n/a	1400-1500*
 Short Tons CO <sub>2</sub> Avoided	275,304	4,591,753
 Energy Bill Savings	66,037,494	1,178,557,556
 MMBtu Saved	1,869,047	31,427,411
 MWh Saved	597,736	3,420,325

\*Estimated job-years created.

Energy efficiency improvements can be achieved cost-effectively by upgrading appliances and lighting, weatherizing and insulating buildings, upgrading HVAC at offices, and improving industrial processes. For example, occupancy sensors automatically turn lights off when a room or building is not in use, saving significant amounts of energy. These programs allow consumers and businesses to take full advantage of modern appliances, heating, and cooling, increasing the comfort of homes, offices, and businesses while using less energy and saving on their energy bills.

Energy efficiency also creates jobs. Programs such as home retrofits directly spur employment gains in housing and construction, with 2020 RGGI investments projected to create an estimated additional 1400-1500 job-years across participating states. Lower energy costs also create numerous benefits across the economy, allowing businesses to expand and families to save and invest in other priorities.

Ultimately, all electricity consumers, not only those who make upgrades, benefit from energy efficiency programs. Lower overall demand for electricity results in lower wholesale electricity rates, as power plants with the highest costs do not run as often, and expensive transmission upgrades can be deferred in some cases. The full economy-wide benefits of energy efficiency are not modeled in this report. However, a range of other independent reports

have affirmed these widespread benefits of energy efficiency, including work by the Analysis Group, the Regulatory Assistance Project, and others.





RGGI-funded investments in energy efficiency, in concert with the broader energy policies in each RGGI state, have made the region a leader in this field. Six RGGI states once again ranked among 2020's top ten states for energy efficiency, according to the American Council for an Energy Efficient Economy.



## Clean and Renewable Energy

Clean and renewable energy represents 18% of 2020 RGGI investments in the region. Over the lifetime of the projects installed in 2020, these investments are projected to offset \$602 million in energy expenses. They are also projected to avoid the release of over 1.7 million short tons of CO<sub>2</sub> emissions (see **Table 3**).

**Table 3: Benefits of 2020 RGGI Investments in Clean Energy**

Category	Annual Benefits of 2020 Investments	Lifetime Benefits of 2020 Investments
 Short Tons CO <sub>2</sub> Avoided	96,092	1,735,768
 MWh Avoided*	192,903	3,473,936
 MMBtu Avoided	25,965	576,144
 Energy Bill Savings	\$31,394,795	\$601,955,014

\*RGGI investments in clean and renewable energy decrease the electricity generated from marginal generating units, which are typically more expensive and carbon-intensive.

Clean energy systems require labor to install, which creates jobs and boosts local economic activity. Energy expenditures that might otherwise flow to out-of-state fossil fuel resources stay within the region. As with energy efficiency, “behind-the-meter” programs also contribute to lowering wholesale electricity prices by lowering the demand for electricity at the wholesale level. As demand for electricity decreases, the most expensive power plants run less often, driving long-term prices down for all consumers. Households and businesses both with and without clean energy systems save money on bills.

While RGGI investments are just a small part of widespread clean and renewable energy investments in the region, together these actions are having a measurable impact on the energy mix. Since 2008, RGGI states have increased their non-hydro renewable generation by 73%. In 2020 the RGGI states derived 50% of total generation from clean or renewable sources.





## Beneficial Electrification

Beneficial electrification refers to programs that reduce carbon emissions by displacing direct fossil fuel use with electric power. In contrast to energy efficiency programs, which reduce electricity or fuels usage, beneficial electrification programs can increase MWh consumption, but result in a net reduction in carbon emissions. Examples include programs that promote the use of electric vehicles, reducing oil consumption, or the installation of electric heat pumps, reducing heating fuel and natural gas consumption.

Beneficial electrification represents 11% of 2020 RGGI investments in the region. Over their lifetime, the investments in beneficial electrification made in 2020 are expected to avoid 177,000 short tons of CO<sub>2</sub> emissions and result in \$90 million in customer bill savings. Beneficial electrification investments will yield even greater emissions reduction benefits over time, as renewables take up a larger portion of the electric grid composition. Investments in beneficial electrification programs, and the resulting bill savings, also lead to job creation and spur local economic activity.

In addition, some programs reported as energy efficiency, clean and renewable energy, or greenhouse gas abatement may include beneficial electrification components, but the outcomes of these projects are not reported under beneficial electrification.

Table 4: Benefits of 2020 RGGI Investments in Beneficial Electrification

Category	Annual Benefits of 2020 Investments	Lifetime Benefits of 2020 Investments*
 Short Tons CO <sub>2</sub> Avoided	12,187	176,877
 Energy Cost Savings**	\$5,420,796	\$89,589,982
 MMBtu Saved	150,038	2,179,101
 MWh Increased	10,089	151,330

\*Although Beneficial Electrification is a new addition to the RGGI Proceeds report, Lifetime Benefits are calculated the same as other categories in the report. States use assumptions about the lifespan of their Beneficial Electrification investments in terms of years, and calculate lifetime benefits based on assumptions about their ISO's carbon intensity, energy cost, etc. over the lifespan of an investment to estimate Lifetime Benefits.

\*\*Energy cost savings is the net result of increased MWh costs from beneficial electrification combined with the decrease in avoided fuel costs (i.e. heating oil, gasoline).






## Greenhouse Gas Abatement

Greenhouse gas abatement (GHG abatement) is a broad category encompassing other ways of reducing greenhouse gases, apart from energy efficiency and clean and renewable energy. Approximately 5% of 2020 RGGI investments supported GHG abatement programs. Over their lifetime, the investments made in 2020 are expected to avoid the release of over 160,000 short tons of CO<sub>2</sub> (see **Table 5**).

Programs in the GHG abatement category may vary significantly, and may drive GHG emission reductions in multiple sectors. For example, technology, research, and development programs are tracked as GHG abatement, as they may lead to advancements resulting in the reduction of greenhouse gases. Climate change policy research is also tracked as GHG abatement.

GHG abatement programs vary in the types of benefits they provide. Some projects reduce electricity and fossil fuel use as part of their efforts to reduce overall emissions, generating economic benefits similar to those realized through energy efficiency and clean and renewable energy programs. Other projects may not return immediately trackable benefits within the scope of this report, but still provide important long-term benefits in climate preparedness and mitigation.

**Table 5: Benefits of 2020 RGGI Investments in GHG Abatement**

Category	Annual Benefits of 2020 Investments	Lifetime Benefits of 2020 Investments
 Participating Households	2,999	n/a
 Participating Businesses	28	n/a
 Short Tons CO <sub>2</sub> Avoided	15,888	160,881
 MMBtu Saved	222,821	2,228,214
 Energy Bill Savings	\$5,184,777	\$51,847,774

## Direct Bill Assistance




Direct bill assistance returns money to consumers as a rebate on their energy bills. Approximately 19% of 2020 RGGI investments have funded direct bill assistance. RGGI investments in direct bill assistance in 2020 returned \$37 million in bill savings to energy consumers (see **Table 6**).

These programs provide rate relief to electricity consumers in the RGGI region. Some programs provide assistance specifically to low-income families, while other programs provide small on-bill credits to all consumers.

Direct bill assistance typically appears as a credit on a consumer's electricity bill. Direct bill assistance programs support economic activity by providing funds directly to consumers, who can then spend those funds on other priorities. Unlike energy efficiency or clean energy programs (which generate benefits for the lifetime of the installed measures), direct bill assistance programs provide benefits only for the length of the bill-assistance program. Direct bill assistance programs also do not reduce or affect wholesale electricity prices.

RGGI proceeds provide a small percentage of low-income direct bill assistance programs across the states. Other sources of funds come from on-bill system benefit charges, and federal funds in the case of LIHEAP programs.

Table 6: 2020 RGGI Investments in Direct Bill Assistance

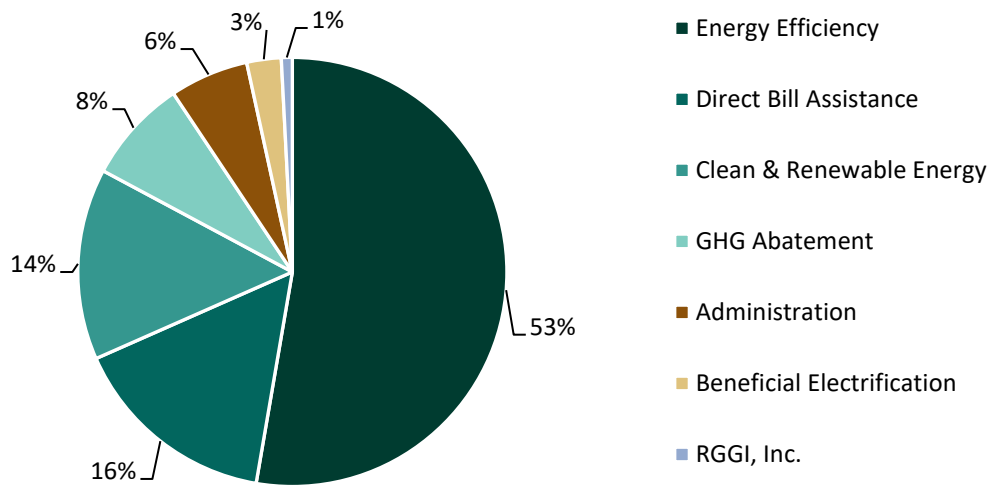
Category	Annual Benefits of 2020 Investments
 Participating Households	722,874
 Participating Businesses	38,580
 Energy Bill Savings	\$37,586,252

## Cumulative Uses of Auction Proceeds

While this report focuses primarily on 2020 data, information on cumulative RGGI investments is provided in this section as an overview of RGGI's track record. **Chart 4**, below, shows the percentage of all-time RGGI investments directed to each of the major program categories.

This pie chart shows each program category as a percentage of all-time RGGI investments.

Chart 4: Cumulative RGGI Investments by Category



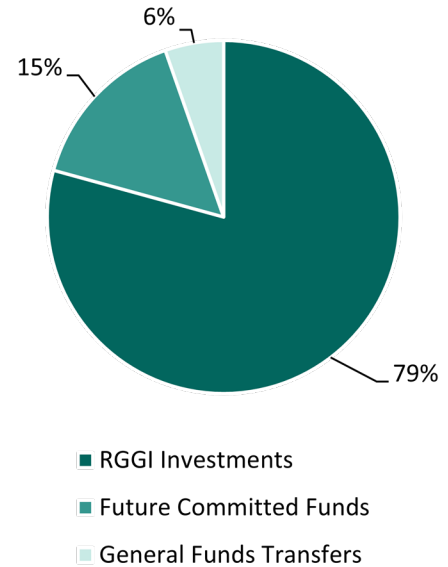
The states participating in RGGI invested \$2.99B as of 2020.

RGGI investments are themselves a subset of total proceeds. Most RGGI proceeds through 2020 are defined as RGGI investments. Other uses of funds, such as transfers to state general funds, are outside the scope of this report. See **Chart 5**, below, for more details on total RGGI proceeds.

Two states report program data according to the fiscal year (July 1-June 30) rather than the calendar year. A fiscal year adjustment is used to compare numbers between fiscal-year and calendar-year states.







**Chart 5: RGGI Investments as a Subset of Total Proceeds**

Description	Funds
All Proceeds through Dec. 31, 2020	\$3,801,985,568
Adjustment for Fiscal Year Reporting	-\$39,673,943
General Funds Transfers	\$199,700,000
Future Committed Funds	\$571,395,708
<b>RGGI Investments</b>	<b>\$2,991,215,917</b>



The pie chart shows three categories of funds, as a percentage of all proceeds **after** the fiscal year adjustment. The participating RGGI states invested \$2.99B in the period covered by this report. This leaves \$571M in funds that are yet to be invested.

All-time benefits metrics may be best understood as a general indication of the cumulative benefits of RGGI-funded investments since the program's inception. **Table 7** shows that the track record from all RGGI investments includes benefits on the order of billions in customer bill savings, and tens of millions of short tons of CO<sub>2</sub> avoided. Note that as the program's track record grows longer, all-time numbers may include changes in states' methodologies from year to year.

Category	Lifetime Benefits of All RGGI Investments
 Participating Households	7,237,334
 Participating Businesses	293,137
 Short Tons CO <sub>2</sub> Avoided	49,523,308
 Megawatt-Hours Saved	74,527,807
 MMBtu Saved	255,317,388
 Energy Bill Savings	\$14,816,129,607

Previously reported cumulative data plus 2020 data may not sum exactly to updated cumulative data. This is due to state adjustments or corrections to prior cumulative calculations.

## Connecticut

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Connecticut primarily invests RGGI auction proceeds towards programs dedicated to the deployment of energy efficiency measures and improvements, and financing options for renewable energy projects. Connecticut allocates 69.5% of its auction proceeds to support the energy efficiency programs overseen by the Connecticut Energy Efficiency Board (CEEB) and administered by Eversource Energy and The United Illuminating Company, as well as those of the Connecticut Municipal Electric Energy Collective (CMEEC) and the Town of Wallingford – Electric Division (WED). Connecticut further allocates 23% to the Connecticut Green Bank to support the development of Class I renewable energy sources. The Department of Energy and Environmental Protection retains the remaining 7.5% for administrative purposes.

During 2020, Connecticut invested RGGI auction proceeds in the following programs:

- Home Energy Solutions<sup>SM</sup> Program: Under this program, Eversource Energy and The United Illuminating Company invested RGGI funds to conduct residential energy audits and install weatherization measures. Due to the investment of RGGI funds, Eversource and UI were able to extend participation to more than 8,000 homes in 2020 and avoid more than 12,000 tons of CO<sub>2</sub> emissions and conserve over 154,000 MMBtus of fossil fuel use.
- Home Energy Savings Program: Under this program, WED leveraged RGGI funds to perform residential energy audits and deploy weatherization measures. In 2020, WED served 198 homes and provided weatherization services to 108.
- Commercial Property Assessed Clean Energy (C-PACE) Program: Under this program, the Connecticut Green Bank offers low interest, zero-down payment financing for clean and renewable energy projects. In 2020, the Connecticut Green Bank invested RGGI proceeds in C-PACE to help finance eleven projects, four of which were completed in 2020. The remaining seven projects were completed in 2021. Since the inception of the C-PACE program, 111 projects have been completed.
- Various energy efficiency projects: CMEEC used RGGI funds toward the deployment of residential and commercial energy efficiency projects, ranging from the installation of heat pumps and mini splits to street lighting upgrades including the retrofit of street lighting on University of Connecticut's (UConn) Avery Point campus.

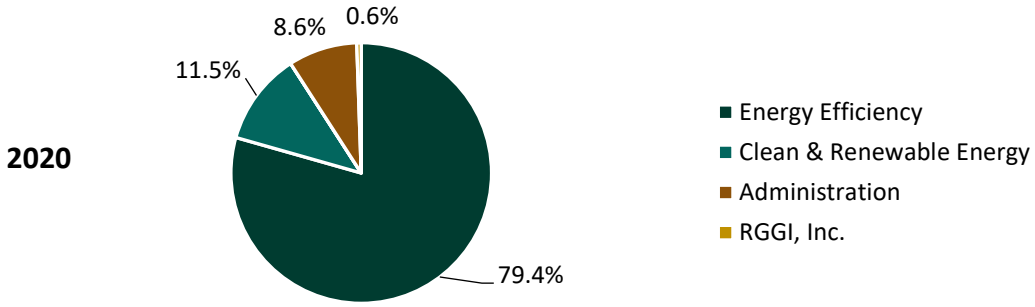
Connecticut has cumulatively invested nearly \$214 million in RGGI allowance proceeds toward programs and services dedicated to the deployment of energy efficiency measures and renewable energy technologies.

The American Council for an Energy-Efficient Economy (ACEEE) nationally ranked Connecticut seventh in its 2021 State Energy Efficiency Scorecard, which evaluated 2020 state energy efficiency efforts. Connecticut's continued Top Ten ranking is attributed to a range of energy-saving policies across the entire economy including:

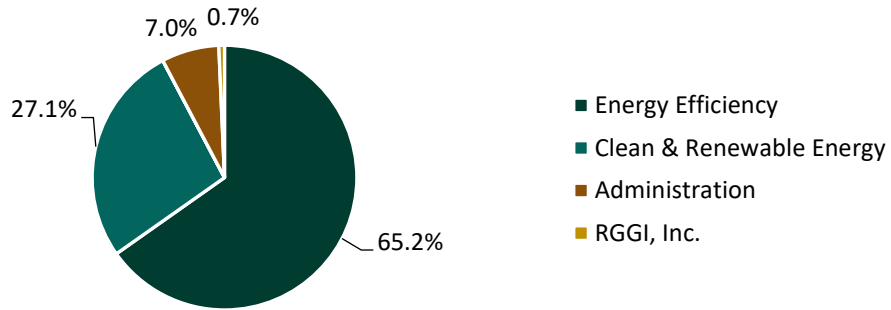
- Incentives for high-efficiency vehicles and adoption of California's ZEV program.
- Waivers of co-pays for certain energy efficiency programs to mitigate impacts from the COVID-19 pandemic.
- Launch of the Equitable Energy Efficiency Proceeding in order to increase participation in energy efficiency programs by members of communities that have traditionally been underrepresented.



**Chart 6: 2020 Connecticut RGGI Investments by Category**

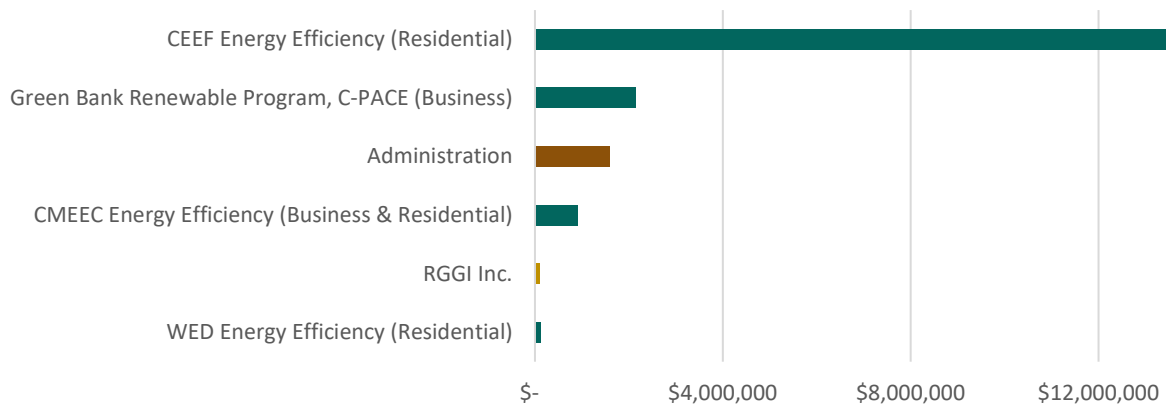


**All-Time**



Connecticut received \$246M in proceeds from 2008-2020. RGGI investments represent \$18.6M in 2020, and \$214M cumulatively. \$4M is committed to 2021 and future investments.

**Chart 7: 2020 Connecticut RGGI Investments by Recipient**



Connecticut RGGI investments represent \$18.6M in 2020.

### Program Highlight: Home Energy Solutions<sup>SM</sup>

The Home Energy Solutions<sup>SM</sup> (HES) program is a home energy efficiency audit and energy conservation program, primarily funded by mandated conservation charges collected from electric and natural gas ratepayers, who in turn can receive its services. Connecticut's investment of RGGI proceeds in this program has provided funding for the deployment of services under the program to families who heat their homes with fuel oil or propane.

The HES program enables evaluation of a home's energy performance and installation of core weatherization and energy-saving measures such as sealing air leaks, installing energy-efficient lighting such as LEDs, faucet aerators, low-flow showerheads, and weather stripping. Participation in the HES program requires a co-pay, however, for much of 2020, the co-pay was waived in response to the emergence of the COVID-19 pandemic.

The HES program also provides families with customized reports highlighting additional opportunities and estimated cost savings for implementing deeper energy-saving measures. Participants may also receive rebates on these interventions such as improving insulation and installing energy-efficient mechanical equipment. HES participants may also be provided with the Department of Energy's Home Energy Score for their home, a standardized comparison of the home's energy usage to similar buildings, and recommendations for energy upgrades along with the estimated annual savings from those upgrades. HES participants can be provided with up to \$7,500 in rebates to perform energy efficiency and equipment upgrades such as installation of ENERGY STAR rated appliances and improved home insulation. Low-interest rate financing options are also available. The average home in Connecticut receives about \$1,000 in services and realizes \$200-\$250 in savings on their annual energy bills.

### Success Story: UCONN at Avery Point

The UCONN at Avery Point campus, located on Long Island Sound at the mouth of the Thames River in Groton, CT is a public campus of the University of Connecticut offering liberal arts programs of study for approximately 564 enrolled students.

Groton Utilities (GU), a member of CMEEC, provides and maintains streetlights to this 72-acre campus. The recognition of the need to upgrade the pole top lighting fixtures was the catalyst for GU to embark on the replacement of the 121 high pressure sodium fixtures (175W each) with LED fixtures (99W each). The expenditure of \$242,675 of RGGI funds for the UCONN at Avery Point project is anticipated to realize an annual energy savings and reduction in monthly peak demand of 53 MWh and 13 kW, respectively, and an estimated reduction of GHG emissions equivalent to 25 tons of CO<sub>2</sub>.

### Resources:

- [ACEE State Energy Efficiency Scorecard](#)
- [C-PACE](#)
- [CMEEC](#)
- [Energy Efficiency Board 2020 Programs and Operations Report](#)
- [Energize Connecticut<sup>SM</sup>](#)
- [Home Energy Solutions<sup>SM</sup> Core Services](#)
- [Town of Wallingford – Electric Division](#)

## Delaware

Delaware invests RGGI allowance proceeds in a variety of programs that reduce energy use, reduce greenhouse gas emissions, and assist low-income families with energy bill payments. The suite of programs funded with RGGI allowance proceeds provides Delaware families and businesses with valuable assistance with energy efficiency improvements while providing opportunities for innovation in greenhouse gas reductions.

Delaware directs 65% of its allowance proceeds to the Delaware Sustainable Energy Utility (SEU). The SEU serves Delawareans by promoting the use of affordable, reliable, clean energy, and providing a variety of incentives for energy efficiency improvements.

In addition, Delaware directs ten percent of its allowance proceeds to the Delaware Department of Natural Resources and Environmental Control (DNREC) for development of innovative programs to reduce greenhouse gas emissions such as the Clean Transportation incentive program and infrastructure grants. Ten percent of proceeds is also directed to DNREC to implement the state's Weatherization Assistance Program which provides no-cost upgrades to homes to decrease energy use and decrease bills. Five percent of proceeds is also directed to a program to reduce energy bills for low-income customers. The remaining ten percent is reserved for administration of programs.

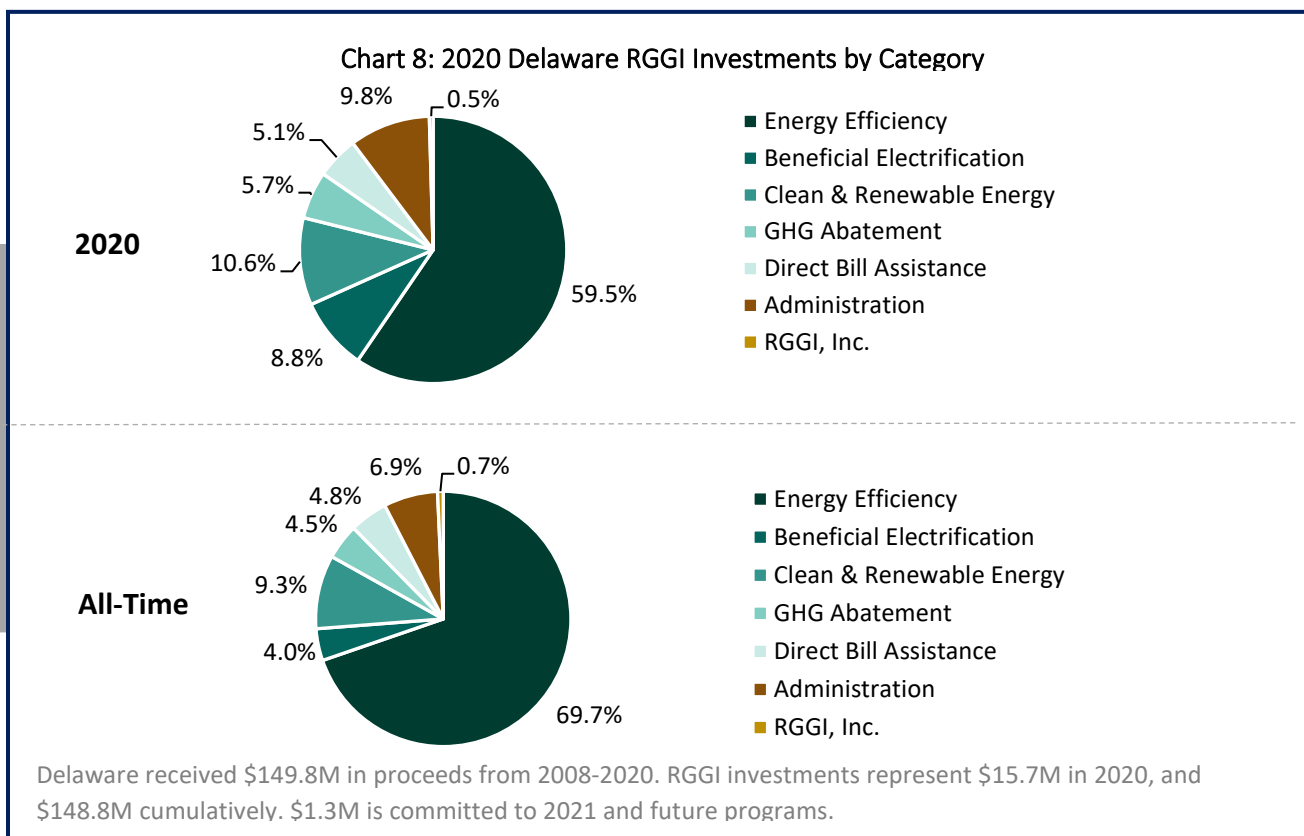
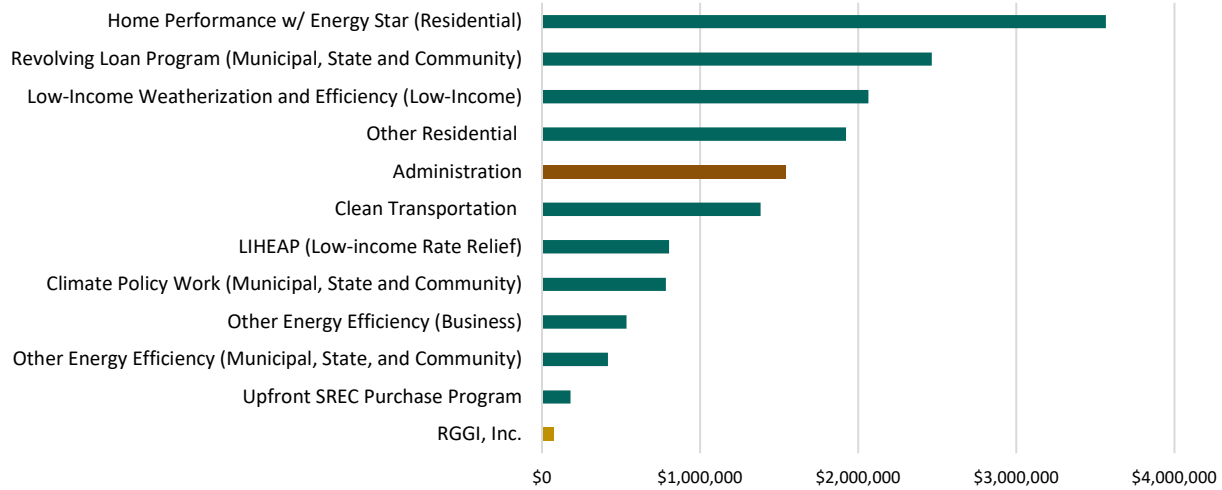


Chart 9: 2020 Delaware RGGI Investments by Recipient



Delaware RGGI investments represent \$15.7M in 2020.

### Program Highlight: DESEU-Energize Delaware Home Performance with ENERGY STAR

The SEU flagship Home Performance with ENERGY STAR® program is going into its eighth year. This program offers a “whole house” approach to improving comfort and safety in the home and provides homeowners significant savings on their utility costs. Delaware homeowners learn ways to improve the energy efficiency of their homes through completion of a subsidized, comprehensive home energy assessment performed by certified contractors, and they also receive up to \$200 of energy saving items such as LED light bulbs and pipe insulation.

After the assessment, homeowners making recommended energy-saving improvements can take advantage of rebates that make their home projects affordable. Reduced assessment costs and increased rebates are available to income-qualified Delawareans and also to property owners residing in Delaware’s designated “Downtown Development Districts.” Of the 1,749 home assessments completed in 2020, 1,196 homeowners received rebates. In total, SEU leveraged \$3.5M in RGGI funds for the Home Performance with ENERGY STAR Program in calendar year 2020, resulting in about \$490,000 in energy bill savings and over 2,000 metric tons CO<sub>2</sub> emissions avoided.

### Success Story: Delivering Savings through Home Performance with ENERGY STAR

Delawareans and families across the country are experiencing higher utility costs and more strain on their budgets due to the COVID-19 pandemic. Even during the pandemic, SEU was able to keep the Home Performance with ENERGY STAR program operating and participating contractors working in a safe and efficient manner to provide home energy assessments and rebates for energy efficiency heating and cooling equipment, air sealing and insulation, and other water heating and weatherization measures. SEU provided reduced costs for the energy assessments, increased rebate amounts, and provided incentives for completed applications to keep contractors working and making projects more affordable during the pandemic. Rob and Cami Seward provided the following testimonial of their experience as 2020 participants in SEU’s Home Performance with ENERGY STAR program:

*“We were running an alternate A/C unit in the dining room and it was still 90 degrees in the house. This year is different! Because of your work evaluating our house and sealing and insulating the attic, it has been cool and comfortable all summer. No extra A/C unit needed! Our electric bill last July was \$349 and this July it was \$201. What a dramatic improvement! We are so happy with the house now that the work has been completed. Great Job sealing us up and cooling us down—We are so grateful to the Energize Delaware Team!”*



## Maine

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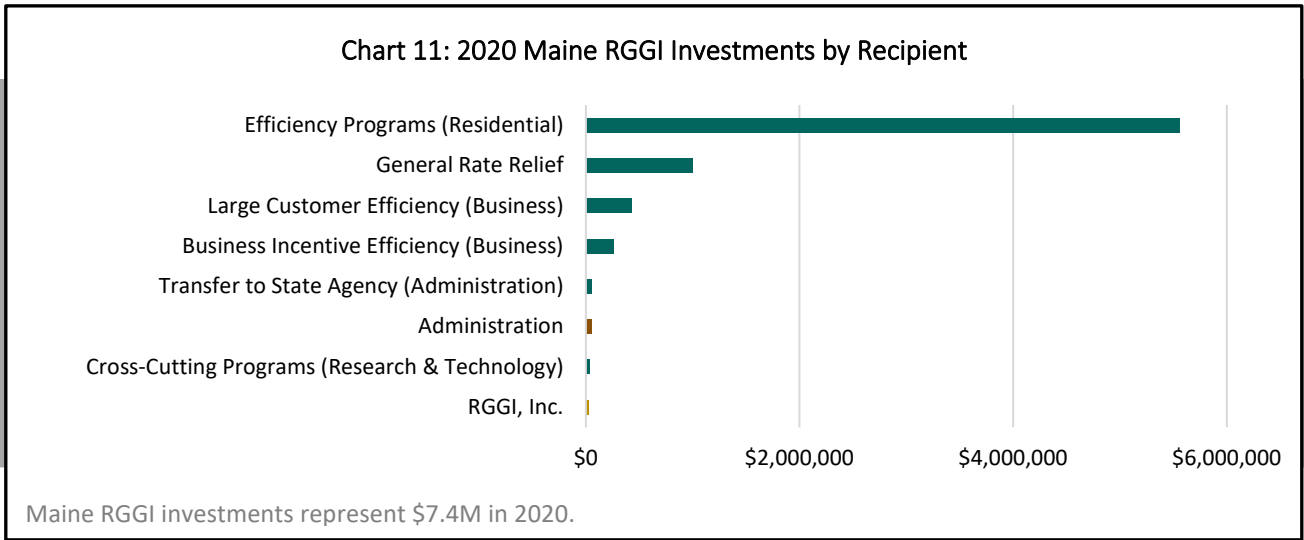
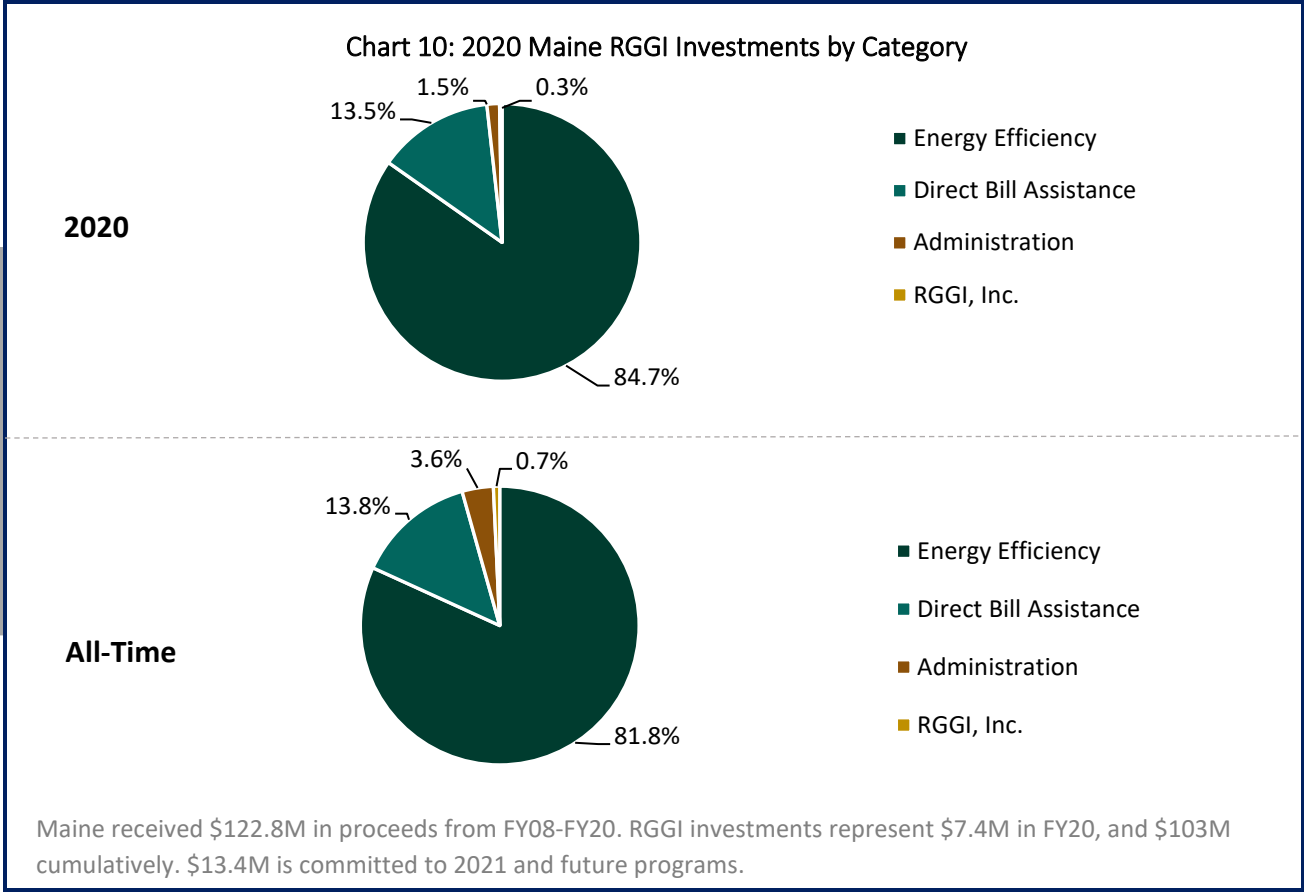
The Efficiency Maine Trust (Efficiency Maine) is the independent administrator for programs to improve the efficiency of energy use and reduce greenhouse gases in Maine. The Trust does this primarily by delivering financial incentives on the purchase of high-efficiency equipment or changes to operations that help customers save electricity, natural gas, and other fuels throughout the Maine economy. The organization's purposes include the following:

- Consolidating under one roof the funds for Maine's consumer-focused efficiency and alternative energy programs for all fuel types, including electric, natural gas, and unregulated fuels;
- Procuring distributed energy resources (such as efficiency and alternative energy) that cost less than traditional energy to help individuals and businesses meet their energy needs at the lowest cost; and
- Helping transform the energy market in Maine so that energy-efficient products, alternative energy equipment, and related energy services are more accessible and affordable to end-use customers.

Efficiency Maine's programs are funded primarily by a combination of electric and natural gas system benefit charges, Forward Capacity Market proceeds, and RGGI proceeds. During its 2020 fiscal year (FY2020), Efficiency Maine invested over \$7.4 million in RGGI proceeds, directing approximately 98% towards a combination of energy efficiency programs and rate relief for large manufacturers; the remaining 2% went towards general administration. Though nearly all of Efficiency Maine's programs leveraged RGGI funding to some degree in FY2020, the bulk of funds were invested through the following five programs:

- *Home Energy Savings Program*: Drove market-based home weatherization and heating demand reduction by offering rebates and loans, providing customer education, and developing a vendor network.
- *Distributor Initiatives*: Rebated high efficiency boilers and furnaces to homes and businesses through the distributor channel
- *Retail Initiatives*: Rebated efficient wood stoves and pellet stoves in retail stores to heat the homes of Mainers
- *Commercial and Industrial (C&I) Prescriptive Program*: Provided fixed-price incentives for a prescriptive suite of "off-the-shelf" energy efficiency measures for C&I customers.
- *C&I Custom Program*: Targeted larger C&I customers by offering incentives for custom, site-specific energy efficiency projects that require unique engineering analyses.

Over the lifetime of the investments made in FY2020, Maine's RGGI-funded efficiency measures are estimated to generate savings of over 2.15 million MMBtu in avoided consumption of natural gas and other heating or process fuels. These investments will lower participants' energy bills by more than \$41 million.



**Program Highlight: Home Energy Savings Program**

Efficiency Maine’s Home Energy Savings Program (HESP) serves as the framework for market-based residential weatherization and heating system improvements achieved through a combination of rebates, financing, and customer education. HESP raises awareness about the benefits of home weatherization and encourages Maine homeowners to make energy efficiency upgrades. Efficiency Maine’s Low-Income Initiatives leverage this market-

based channel to target low- and moderate-income (LMI) customers by providing enhanced incentives for home weatherization (with an energy assessment) and high-performance heat pumps.

In the past, Efficiency Maine's ability to promote these tailored offerings to low-income households was limited; it required that participants be enrolled in the federally funded Low-Income Home Energy Assistance Program (LIHEAP). In 2017, the Maine State Housing Authority estimated that there were up to 176,000 low-income homes in Maine, yet only 40,000 were enrolled in LIHEAP. In FY2017, Efficiency Maine expanded eligibility criteria for this initiative to include LMI customers enrolled in any state or federal income-based program, as well as owners living in mobile homes and those living in homes with assessed property values below a certain threshold.

These eligibility changes, along with enhanced incentives, have helped drive dramatic growth in activity in Efficiency Maine's market-based LMI initiative. Indeed, overall participation rose from 40 homes in FY2016 to 1,444 homes in FY2021. (Though the COVID-19 pandemic initially dampened this growth trend in FY2020, data from FY2021 showed a strong rebound.) Rebates for heat pumps covered 1,213 units over the course of FY2021, up from 144 units in FY2017. The larger pool of potential customers and simplified criteria made this approach significantly easier for staff, contractors, and community organizations to promote Efficiency Maine's LMI offerings, and for participants to access it.

Overall, Efficiency Maine's market-based LMI offerings leveraged \$15,000 in RGGI funds in FY2020. Low-income Mainers save an estimated 172 MMBtu annually in avoided energy consumption associated with heating oil and other fuels.

### Success Story: Bath Iron Works

Bath Iron Works (BIW) is a major shipyard that has been building U.S. Navy warships in Bath, ME for over 100 years. The primary structural assembly building is nearly 170,000 square feet with 80-foot ceilings. It houses the majority of the facility's welding operations.

Originally, the assembly building's heat was provided by 19 Modine unit heaters equipped with steam coils. The building operated at a significant negative pressure; exhaust fans pulled air out of the building, and uncontrolled make-up air came in through infiltration. In these conditions, the building experienced fume accumulation, cold temperatures, and considerable energy loss. BIW therefore launched an effort to upgrade the building with the goals of improving air quality, increasing winter space temperature, reducing the negative pressure, and saving energy.



*BIW's new high-efficiency air filtration units.*

BIW received two separate proposals for new air filtration and make-up air systems – one high-efficiency, more expensive option, and one lower-efficiency, cheaper option. Both systems would accomplish the company's general goals for the project. By offering a financial incentive to defray the upfront incremental cost differential, Efficiency Maine was able to encourage BIW to select the high-efficiency alternative.

Given the relatively complex, site-specific nature of the project, BIW worked with Efficiency Maine's Commercial and Industrial (C&I) Custom Program. The program was able to validate the predicted energy impacts and offer a \$752,000 incentive, funded partially with RGGI dollars. These investments will save BIW approximately 2.7 million kWh of electricity and 7,900 MMBtu of natural gas annually, reducing the company's operating costs for years to come.

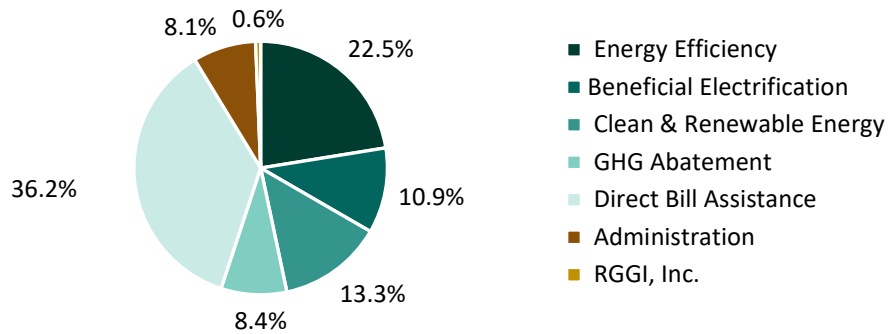
## Maryland

Maryland allocates proceeds from the sale of CO<sub>2</sub> allowances into the State's Strategic Energy Investment Fund (SEIF)—a special, non-lapsing fund administered by the Maryland Energy Administration (MEA). MEA deploys SEIF funds to promote affordable, reliable, and clean energy across Maryland's diverse regions and communities.

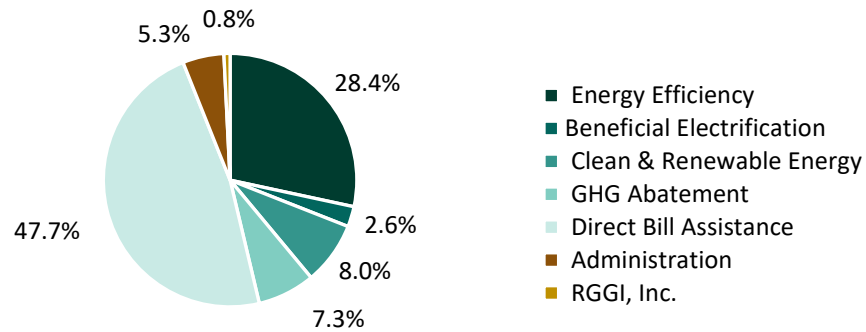
These programs are intended to reduce energy bills, create jobs in growing industries, help reduce greenhouse gas emissions, increase resiliency, and promote energy independence.

Chart 12: 2020 Maryland RGGI Investments by Category

2020

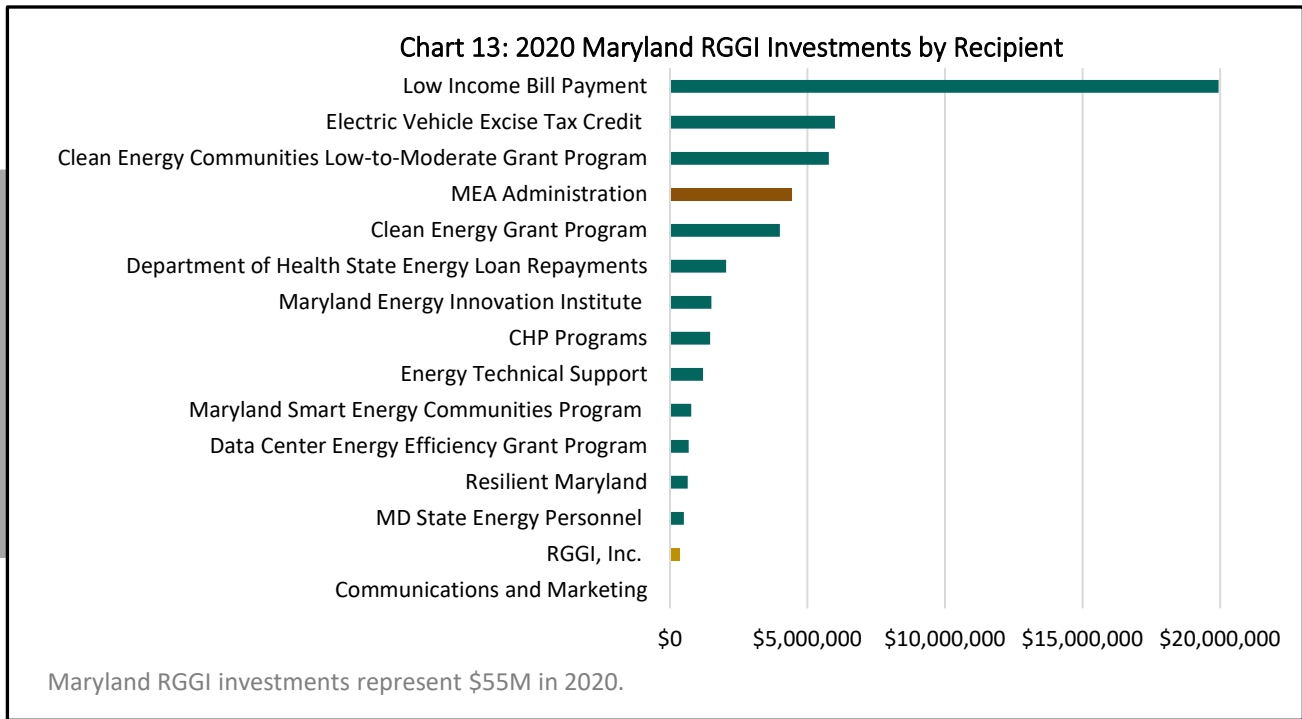


All-Time



Maryland received \$736.8M in proceeds from 2008-2020. RGGI investments represent \$55.0M in 2020, and \$711.3M cumulatively. \$25.5M is committed to 2021 and future programs.

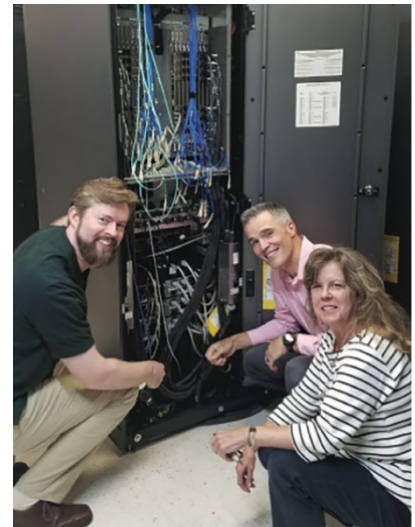




### Success Story: Public School Data Center Team Puts Energy Efficiency Lessons into Action

The Maryland Energy Administration (MEA) continues to develop innovative energy programs that drive economic development, energy resilience and recovery for Marylanders. Maryland was the first in the nation to offer a targeted energy efficiency program for data centers with the Data Center Energy Efficiency grant. Data centers use 100 – 200 times more energy than a typical office building, running 24 / 7 / 365. MEA provides Clean Energy Rebates to businesses, nonprofits, local governments, and State of Maryland government agencies and departments that install clean energy systems on facilities located in the state.

Data centers provide round-the-clock sensors to monitor power, temperature, humidity, fire, and other mechanical functionals for critical IT infrastructure. In 2017, US data centers required more than 90 billion kilowatt-hours of electricity, equal to the energy generated from 34 massive coal-powered plants. Energy efficiency at data centers has never been more important. Montgomery County Public Schools (MCPS) received a \$127,000 Maryland’s Data Center Energy Efficiency Grant (DCEEG) in 2018, to install more energy efficient technology in their data center. MCPS’s data center operates, monitors, and provides technical support for central servers and related equipment allowing 24-hour access to essential student and administrative databases as well as payroll, student attendance and enrollment, retirement, asset management, financial management, report cards, and online ordering. MCPS implement numerous upgrades including server virtualization, replacement, and migration of storage area networks to reduce energy consumption of servers. Air flow optimization measures such as rack enclosure cooling blanking panels were also implemented, all as part of a multiphase data center improvement project. These upgrades are expected to save MCPS over \$21,000 annually or 180,695 kilowatt hours, which is enough to power roughly 600 laptop computers for 8 hours. This project was co-sponsored by MCPS’ Office of Technology and Innovation (OTI) and Department of Facilities Management’s (DFM) Energy Resource Team. MCPS hopes to reinvest the grant funding to procure software that will give insight into actual server energy usage that is not presently available. This would facilitate and encourage informed decisions in prioritizing and pursuing larger ticket/cost items where greater energy savings and efficiencies could be realized. Before this project, MCPS did not consider energy efficiency or ENERGY STAR™ ratings when purchasing equipment.

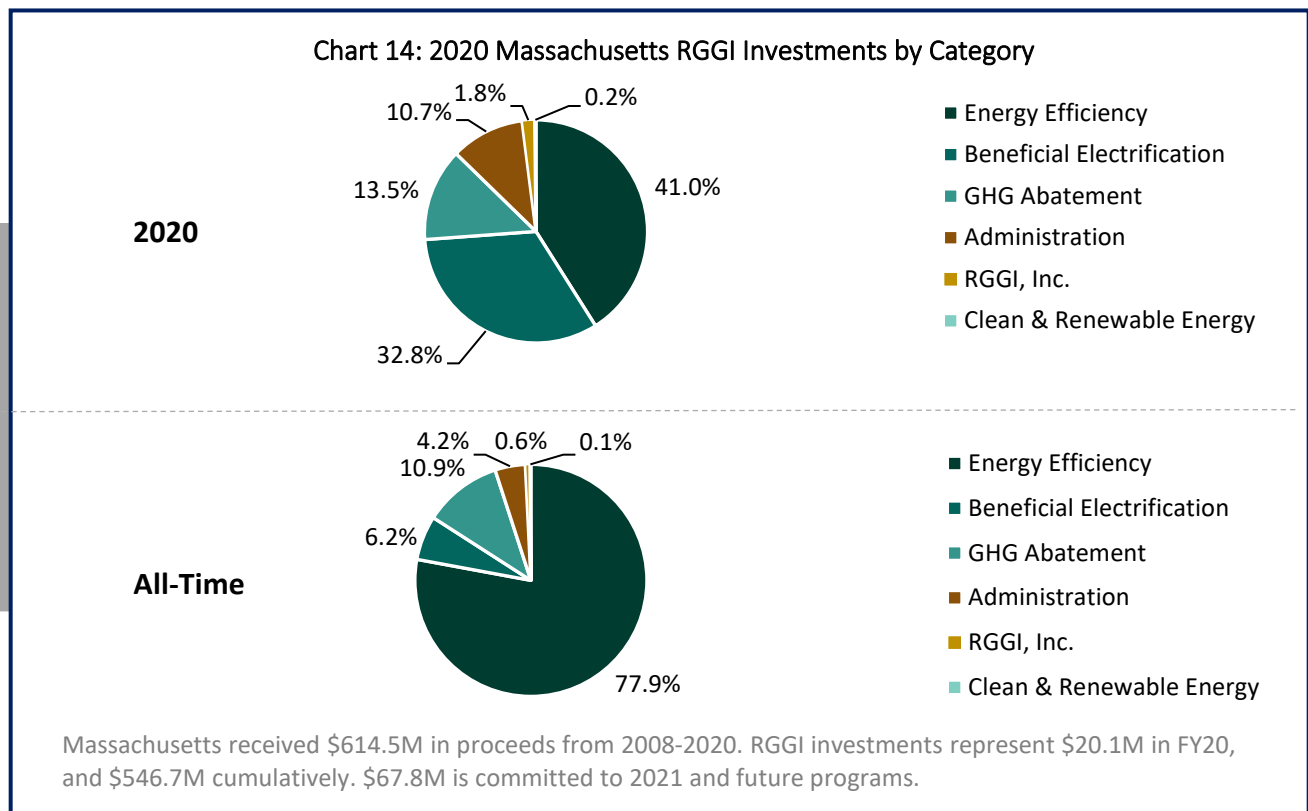


## Massachusetts

Massachusetts leads the nation with bold and transformative policies and practices to address climate change. Signed into law in 2008, the *Global Warming Solutions Act (GWSA)* established a statewide limit on greenhouse gas (GHG) emissions of 25 percent below 1990 levels for 2020 and 80 percent below 1990 levels by 2050.<sup>2</sup> In 2020, Governor Baker signed *An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy*, further committing the Commonwealth to net zero emissions in 2050.<sup>3</sup>

Massachusetts was one of the first states in the nation to set aggressive economy-wide goals to reduce GHG emissions across the electricity, thermal, and transportation sectors and enact a suite of policies and practices to reach those goals. However, emissions from the transportation sector remain the states' foremost challenge in reaching its goal of net zero emissions in 2050. Transportation is the largest source of GHG emissions, and it continues to grow.

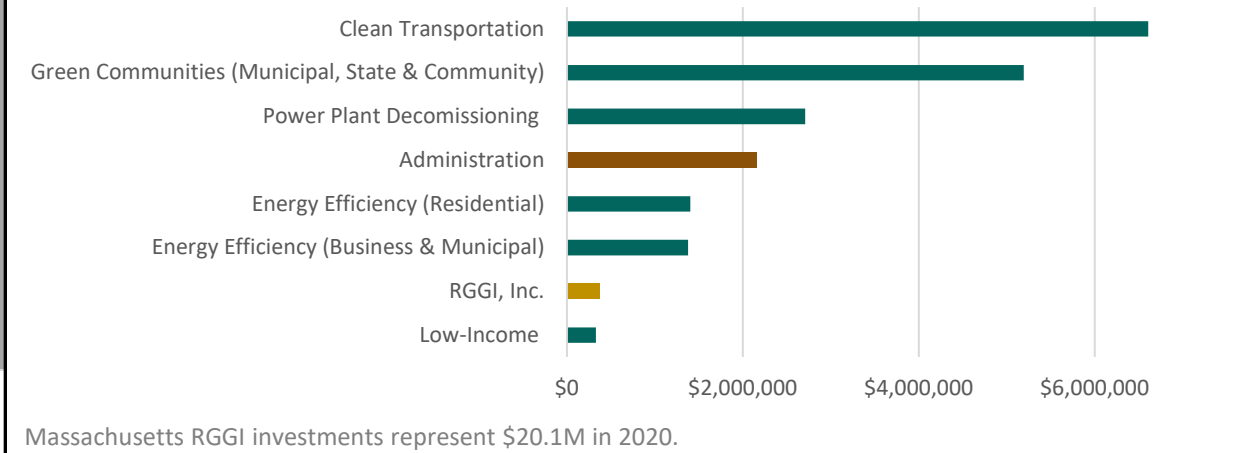
The aggregate emissions of the light-duty fleet of vehicles on Massachusetts roads is determined by a combination of the makeup of registered vehicles and the number of miles driven. The overall composition of the state's registered vehicles changes over time as new vehicles are purchased, old vehicles that no longer function or pass inspection are removed, and vehicles move in and out of state. Persuading new vehicle buyers to purchase an electric vehicle (EV) instead of a gasoline vehicle reduces future emissions from the transportation sector as vehicle purchases today determine the composition of the fleet for the vehicle's lifetime.



<sup>2</sup> An Act Establishing the Global Warming Solutions Act. Chapter 298 of the Acts of 2008, and as codified at M.G.L. c. 21N (Chapter 21N). Available at: <https://malegislature.gov/laws/sessionlaws/acts/2008/chapter298>

<sup>3</sup> Mass.gov. Press Release. Governor Baker Signs Climate Legislation to Reduce Greenhouse Gas Emissions, Protect Environmental Justice Communities. March 26, 2021. Available at: [Governor Baker Signs Climate Legislation to Reduce Greenhouse Gas Emissions, Protect Environmental Justice Communities | Mass.gov](https://www.mass.gov/news/governor-baker-signs-climate-legislation-to-reduce-greenhouse-gas-emissions-protect-environmental-justice-communities)

Chart 15: 2020 Massachusetts RGGI Investments by Recipient



### Program Highlight: MOR-EV

Launched in 2014, the *Massachusetts Offers Rebates for Electric Vehicles* (MOR-EV) program is an education and rebate program funded by the Executive Office of Energy and Environmental Affairs (EEA) and Department of Energy Resources (DOER) and is administered by the Center for Sustainable Energy (CSE) to increase the number of zero-emission vehicles (ZEVs) on roadways and reduce Massachusetts transportation sector GHG emissions. The MOR-EV program is designed to reduce GHG emissions in the transportation sector by influencing buyers to purchase an EV rather than a traditional gasoline-powered vehicle.

The program objective is to provide air pollution emission reductions for the Commonwealth by increasing the use of ZEVs. MOR-EV offers rebates of up to \$2,500 per electric vehicle and educates consumers and dealers about ZEV rebates and benefits. In 2020, more than 2,700 rebates were approved.

MOR-EV supports the Commonwealth's goals to reach 300,000 ZEVs on the roads by 2025. The program is designed to accelerate deployment of ZEVs in the Commonwealth by incentivizing residents to purchase or lease vehicles that will help:

- Reduce GHG emissions that contribute to climate change
- Protect public health and air quality by reducing transportation-related air pollution that contributes to smog formation and related health effects such as asthma and heart attacks
- Enhance energy diversity and security
- Save drivers money
- Promote economic growth in the Commonwealth

In 2020, the MOR-EV program avoided the use of nearly 23,000 barrels of oil used by light duty vehicles. The Commonwealth's program succeeded in avoiding more than 127,000 MMBtu and reducing GHG emissions by 10,317 short tons.

From its inception in 2014, the program has gone through several iterations, with an eye for changes towards improvement. A cost effectiveness report is currently being undertaken to examine the role of such changes within the program scope.

MOR-EV was one of the first programs of its kind in the United States and the performance of the program to date offers many lessons learned. As with any new initiative, there are successful aspects of the program as well as opportunities for improvement. Three challenges of the current program are financial sustainability, cost-effectiveness, and equity. These issues are high priorities for the next phase of the program, and the opportunities presented are focused on achieving these three priorities.

### Success Story: Green Communities

The city of Methuen used its \$268,640 Green Community Designation Grant to install three energy efficiency measures at its public library, new pumps and motors at a sewer pumping station, efficiency upgrades at the water treatment plant, new heating equipment at fire stations, and to replace insulation and vapor barriers on rooftop ductwork at an elementary school. These projects will save the city an estimated \$31,000 a year in energy costs and reduce annual emissions due to municipal operations by 89 tons.

Three projects at the Nevins Library were designed to improve energy efficiency of the historic municipal building's heating and ventilation systems.

- Project #1 - Installation of demand controls to enable central programming and automation of heating, ventilation, and cooling.
- Project #2 - Installation of variable frequency drive controls for more efficient timing operation of air handling unit fan motors.
- Project #3 - Replacement of two outdated, inefficient fan motors of air handling unit pumps. This project was added as project team made a determination that two of the four air handling unit motors needed to be replaced to maximize energy efficiency benefits.

The sewer Pump and motor replacement involved replacing two obsolete pumps & motors at the Bolduc Street sewer pumping station in West Methuen.

The Bolduc Street station is the city's second largest sewer pump station. The two old 25-horsepower 3-phase motors, in addition to inefficient energy usage, required extensive maintenance for operation, including frequent cleaning and regular reassembly of both pumps. The new pumps have significantly reduced clogging of materials and maintenance costs at the station.

At the water treatment plant, grant funds supported the installation of two variable frequency drives to enable more efficient timing operation at the plant's hot water secondary pumps and the installation of an air source heat pump at the plant's backup generator facility. This will provide for more efficient pre-heating of the back-up generator system's engine block.

Two fire stations received heating equipment upgrades. An outdated, inefficient furnace heating office and living space on the second floor of the Central Fire Station was replaced with a more efficient gas-fired unit. Garage bay unit heaters at the North Fire station were replaced with more efficient models.

The final project replaced aging insulation and vapor barriers supporting a rooftop unit on an elementary school.

## New Hampshire

New Hampshire invests RGGI allowance proceeds in a variety of programs that reduce energy use in municipal and retail buildings, commercial and industrial facilities, and low-income households. RGGI allowance proceeds also provide direct bill assistance to reduce electric bills.

In 2020, New Hampshire received approximately \$18.8 million in RGGI allowance proceeds, of which approximately \$2.5 million was allocated to the Energy Efficiency Fund (EEF). The state’s four electric utility companies administer energy efficiency fund programs through the EEF in combination with funds collected through the System Benefits Charge. Approximately \$15.8 million was used to provide direct bill assistance to New Hampshire electric consumers, \$0.1 million was allocated to an energy efficiency program focusing on moderate-income households, and the remaining RGGI auction proceeds of approximately \$0.3 million covered RGGI-related administrative expenses.

The state’s electric utility companies’ energy efficiency programs supported by RGGI funds include: a Municipal program; an income-eligible Home Energy Assistance program; and an All-Fuels weatherization program targeting moderate-income households. In 2020, EEF funds were used to accomplish the following:

- Installed energy efficiency measures in 163 municipal buildings;
- Weatherized and/or provided weatherization self-install “kits” to 476 income-eligible homes; and
- Worked closely with Community Action Agencies to develop moderate-income program details, outreach methods, and to identify eligible households for targeted outreach.

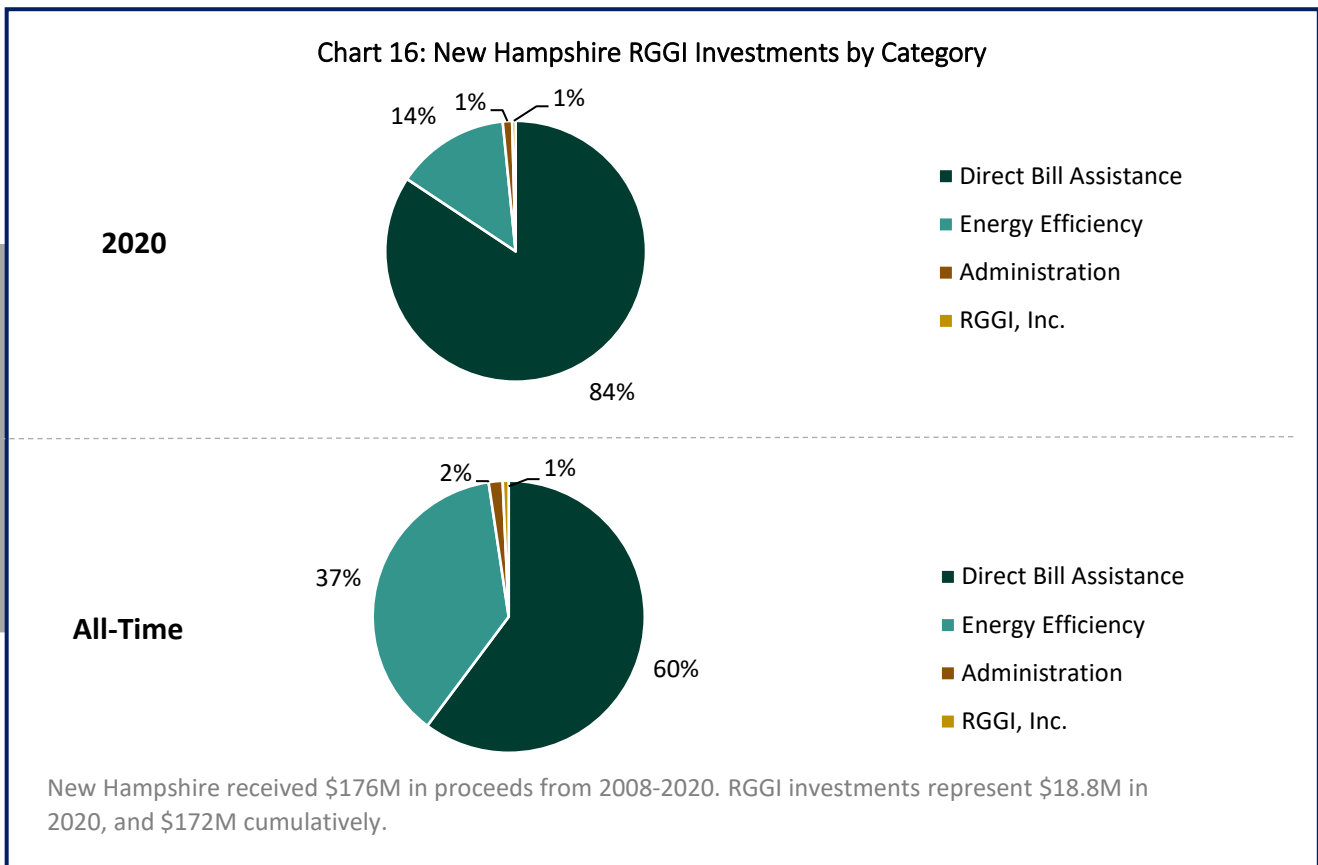
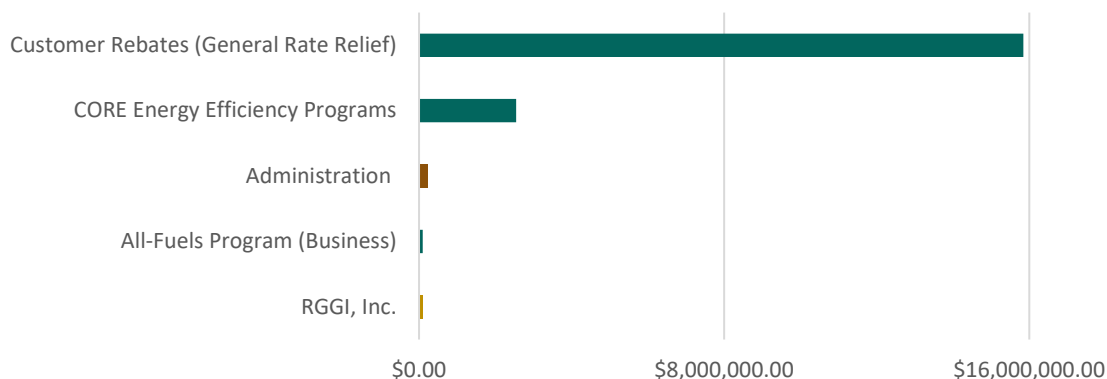


Chart 17: 2020 New Hampshire RGGI Investments by Recipient



New Hampshire RGGI investments represent \$18.8M in 2020.

### Program Highlight: Efficiency Programs

For the measures installed in 2020, the Home Energy Assistance and Municipal programs will save approximately 53,712 MWh of electricity and 129,400 MMBtu over the expected life of the energy efficient equipment improvements. Associated bill savings over the lifetime of these improvements is estimated to be \$10.5 million. The All-Fuels program will save approximately 23 MWh of electricity and 310 MMBtu over the expected life of the energy efficient equipment improvements made in 2020.

The All-Fuels program was launched in 2016. From 2016 through 2018 the program received \$1.2 million of RGGI funding to support energy efficiency measures for retail businesses, and large commercial and industrial energy users. Beginning in 2019, the All-Fuels program supports energy efficiency measures for moderate-income residential energy users with household income of 200% to 300% of Federal Poverty Guidelines. Working with Community Action Agencies, the New Hampshire electric utilities will provide energy audits, and offer financial incentives for installation of energy efficiency measures. Beginning In 2019, this program will receive a total of \$690 thousand of RGGI funding over a three-year period.

### Success Story: Town of Carroll Public Safety Building and Town Hall

At their 2019 Town Meeting, Carroll voters overwhelmingly approved the proposal for a new Town Hall and Safety Building to be erected at a single, convenient location. The ultimate plan was to construct two separate buildings at the site of the now former, and since removed, town hall. This project presented an ideal opportunity for energy efficiency measures to be incorporated into the new structures through the RGGI-funded NHSaves Municipal Program and partner utility Eversource Energy (“Eversource”). Eversource worked with the project architects and contractors to include multiple energy efficiency measures in the project, resulting in structures that exceed building code efficiency requirements and containing multiple efficient measures, including above code insulation, double glazed windows with argon fill, LED lighting, and efficient heating and water systems.

The town formerly leased a building for its police headquarters and to house its Fire and Rescue departments at another, separate location. With the new 13,000 square foot Safety Building, Carroll is able to house its police and emergency-operations center, and the Twin Mountain Fire and Rescue department, all under one roof. Building spaces include a large apparatus bay, a workshop, fire chief offices, EMS offices, police chief offices, a secure, controlled entry way, evidence rooms, booking/holding areas, a training room, a kitchen, storage, and mechanical/electrical areas. Adjacent to the Safety Building is the new Town Hall, which is a 6,500 square foot structure. Its building spaces include a 1,500 square foot community room, library, historical room, offices/conference rooms, store, and mechanical/electrical areas.

The RGGI-funded NHSaves Municipal program not only allowed the Town of Carroll to construct the buildings they voted for, it also allowed for enhanced versions of the buildings with a more appealing return on investment. These

structures, as built, ensure reduced energy use, carbon emissions and energy bills for the town for many years to come compared to baseline structures that simply meet codes and standards. Together, the buildings are estimated to produce annual savings of 53,591 kWh, 8.0 kW, and 1,493 gallons of propane for the Town of Carroll each year for the useful life of the measures incorporated.

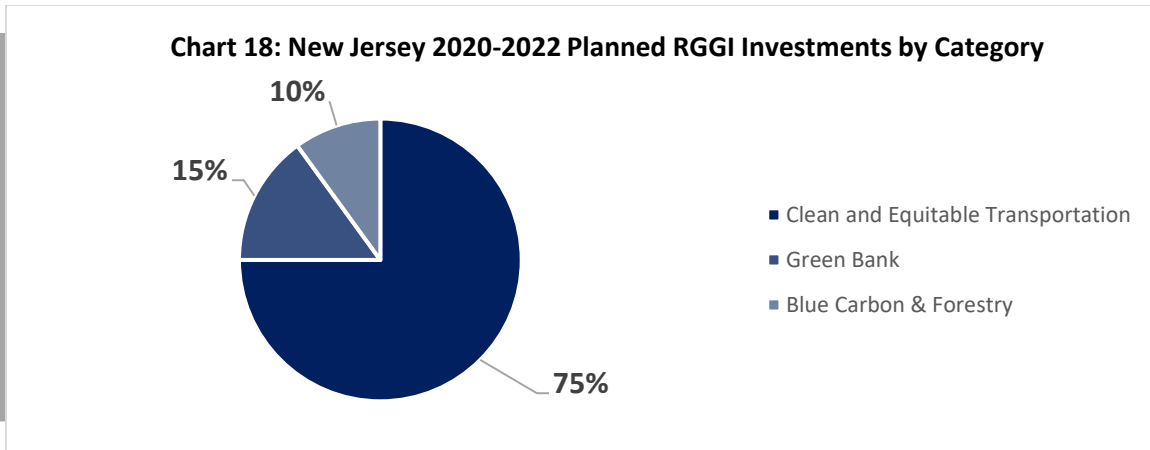
#### Resources:

- [Energy Efficiency Program Regulatory Webpage](#)
- [2020 Systems Benefit Charge Report to New Hampshire Legislature inc. RGGI Grant Program](#)
- [Report to New Hampshire Legislature on 2020 RGGI Program](#)

## New Jersey

New Jersey formally rejoined RGGI in 2020, and as part of its onboarding process released its [RGGI Strategic Funding Plan: Years 2020 through 2022](#). This plan guides the investment of the state's auction proceeds for its first three years of participation, ensuring cross-agency coordination. By law, New Jersey's RGGI funding is allocated by percentage to three state agencies (60% to the New Jersey Economic Development Authority, 20% to the New Jersey Board of Public Utilities and 20% to the New Jersey Department of Environmental Protection) and each agency is required to spend funds within specific programs areas. The plan identifies cross-agency initiatives that will be funded by RGGI auction proceeds and how these investments complement the state's emissions reductions, clean energy, and environmental justice priorities. Funds from 2020 through 2022 are devoted to programs and projects that fall within the scope of four initiatives:

1. Catalyzing Clean, Equitable Transportation
2. Promoting Blue Carbon in Coastal Habitats
3. Enhancing Forests and Urban Forests
4. Creating a New Jersey Green Bank



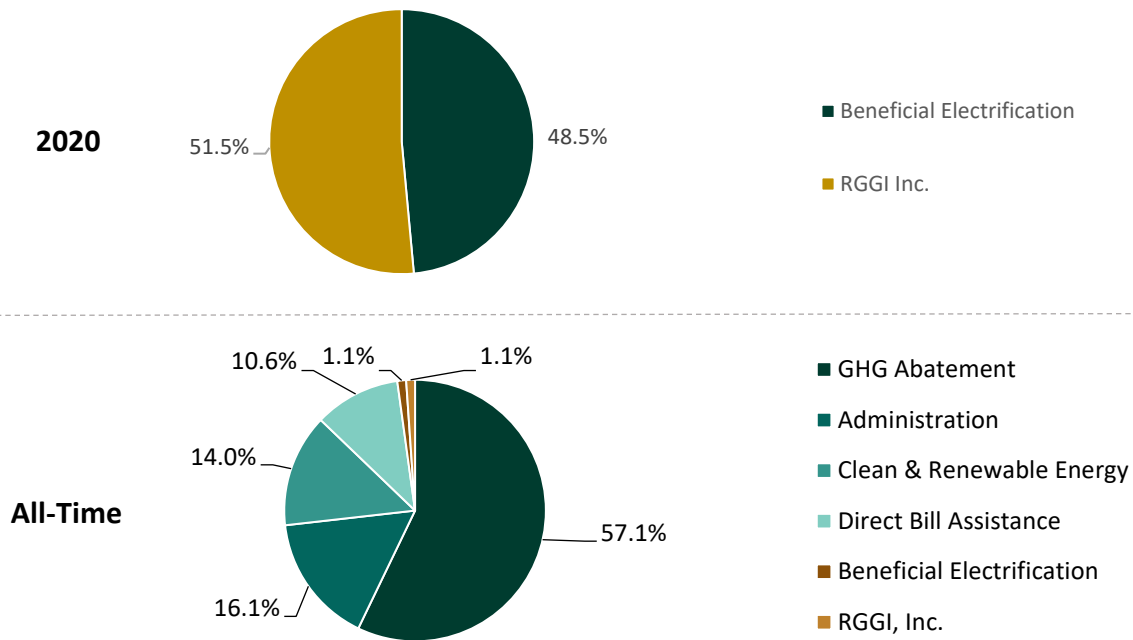
The majority of funding is dedicated to accelerating transportation electrification in the State, focusing on reducing emissions from transportation sources in communities disproportionately impacted by the effects of environmental degradation and climate change. Electrification of the transportation sector is essential for New Jersey to achieve its targets of a 50% reduction in greenhouse gas emissions by 2030 and an 80% reduction by 2050. Currently, transportation accounts for 41% of greenhouse gas emissions in the State, more than twice that of the second largest source, electric generation (19%).<sup>4</sup>

During 2020, the Economic Development Authority, in consultation with, the Board of Public Utilities and the Department of Environmental Protection worked closely with a consultant to develop a zero-emission medium and heavy-duty vehicle strategy, to guide its RGGI investments in clean and equitable transportation.

<sup>4</sup> New Jersey Greenhouse Gas Inventory, Mid-Cycle Update Report. NJ Department of Environmental Protection (NJDEP). 2021. [https://www.nj.gov/dep/aqes/ghgarchive/MCU%20GHG%20Inventory\\_2021.pdf](https://www.nj.gov/dep/aqes/ghgarchive/MCU%20GHG%20Inventory_2021.pdf)



Chart 19: New Jersey RGGI Investments by Category



New Jersey received \$94M in proceeds in 2020. RGGI investments represent \$1M in 2020, which are reflected in the 2020 chart above. New Jersey was an early participant in RGGI before withdrawing in 2012, and then resumed participation in 2020. New Jersey's first control period (2008-2012) proceeds investments total \$43.6 million, which are included with 2020 investments in the All-Time investments chart.

### Program Highlight: Supporting the Transition to Zero-Emission Commercial Transportation

New Jersey is uniquely situated along the Northeast corridor and has extensive transportation assets, including the nation's second busiest port and second densest road and rail network. Electrifying the State's transportation sector therefore requires a thoughtful approach to planning and implementation. To that end, the New Jersey Economic Development Authority, in consultation with the Department of Environmental Protection and the Board of Public Utilities, utilized RGGI funds to develop a strategic approach for establishing New Jersey as a zero-emission transportation hub with a focus on job creation and workforce development. This strategy works in concert with the State's Energy Master Plan and Global Warming Response Act 80x50 Report. As part of this effort, the zero-emission medium and heavy-duty market and supply chain were analyzed, a state strategy was proposed and a slate of new zero-emission medium- and heavy-duty vehicle programs and initiatives were conceptualized. Initial efforts focused on the development of the New Jersey Zero Emission Incentive Program (NJ ZIP), which was formally launched in April of 2021.

NJ ZIP is a voucher program for businesses and organizations purchasing new, electric, class 2b to class 6 vehicles. The program offsets the costs of purchasing electric medium- and heavy-duty vehicles by offering vouchers with base values ranging between \$25,000 to \$100,000. Additional bonuses are available for small businesses; women-, minority-, and veteran-owned businesses; vehicles that were manufactured in New Jersey; small businesses that scrapped their eligible gas- or diesel-powered medium- and heavy-duty vehicles; and vendors that invest in driver education and training. Funding is limited to companies operating in eligible communities, as defined as the greater Newark and Camden areas for NJ ZIP's inaugural round.

#### Resources:

- [New Jersey Zero Emission Incentive Program](#)

## New York

New York’s robust record of climate action includes helping to establish RGGI as North America’s first market-based program to reduce carbon emissions. The state affirmed its role as a climate leader with enactment of the Climate Leadership and Community Protection Act, one of the most aggressive climate policies of any major economy. The State has already reduced electricity emissions by 51% since 1990, with a 60% reduction from 2005 to 2019 in greenhouse gas emissions from sources covered by the RGGI program. Further reductions in electricity sector emissions will allow for needed shifts to electrify buildings and transportation. RGGI, alongside state policies such as the Clean Energy Standard, focused on renewable generation deployment, and the ten-year, \$5 billion Clean Energy Fund, focused on buildings decarbonization, will continue to serve as a critical tool to reduce state-wide greenhouse gas emissions 40% from 1990 levels by 2030 and realize a zero-carbon electricity sector by 2040.

Proceeds generated through RGGI auctions allow New York to pursue opportunities for clean energy, energy efficiency, and carbon reduction that other state activities are not currently designed to reach. The demand for RGGI-supported programs underscores New Yorkers’ desire for clean energy opportunities.

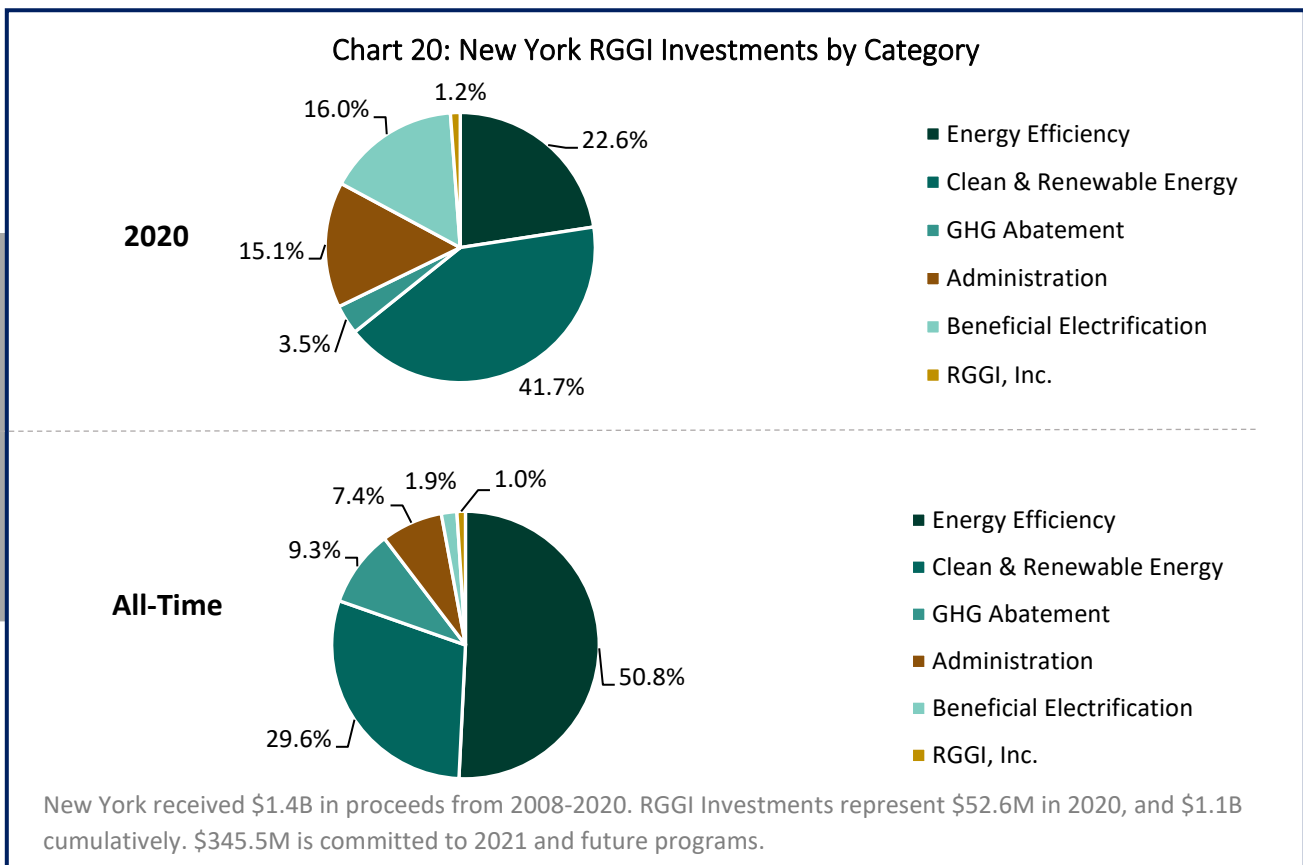
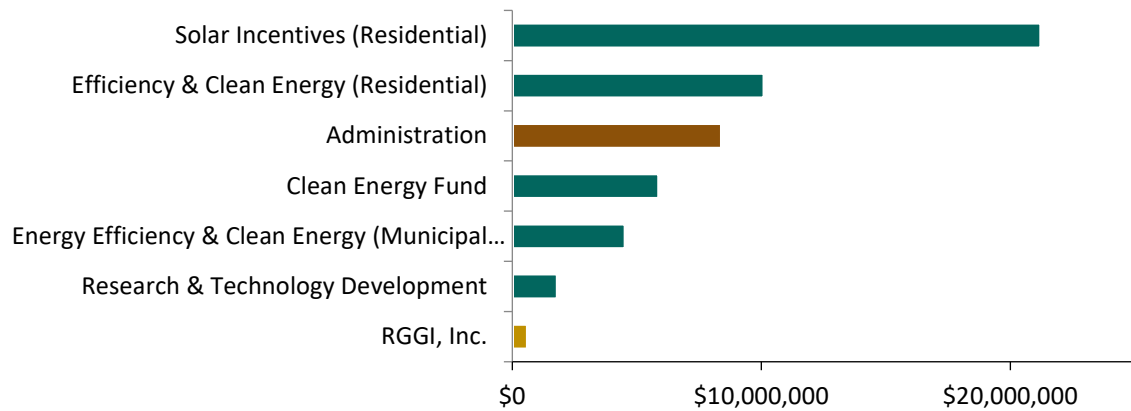


Chart 21: 2020 New York RGGI Investments by Recipient



New York RGGI investments represent \$ 52.6M in 2020.

### Program Highlight: REV Campus Challenge

The Energy to Lead Competition of NYSERDA's REV Campus Challenge initiative challenges colleges and universities across the State to develop and implement plans to advance building decarbonization and innovative, cost-effective clean energy solutions on their campuses and local communities. Institutions are encouraged to incorporate students, curriculum integration, and community engagement into their projects. Proposals with the best solutions to achieve deep energy savings and combat climate change through energy efficiency, renewables, or GHG emission reduction will win approximately \$1 million each to help implement their plans. There were three rounds of the Energy to Lead Competition. The final round had proposals submitted in February 2020, and resulted in 18 proposals from 17 institutions. The latest updates from winning institutions of the first two rounds include:

- The State University of New York at Buffalo and its partners are close to finalizing advancement of an offsite solar venture that will enable the university to achieve their goal of 100% renewable purchased electricity. In addition, the university's sustainable living learning lab project, Garden, Relax, or Work (GRoW) Home, has been moved to the North Campus and interior/exterior construction is being finalized. The installation of 22,600 ground mount solar panels commenced in Q4 2020 and is expected to be completed by Q2 2021.
- Bard College filed an application with the Federal Regulatory Commission (FERC) on May 1, 2019 for an exemption from licensing for the Annandale micro hydropower project. FERC requested a stability analysis to also be completed while FERC continues to review the application. Bard College and Micro Hydro have submitted a response to FERC during Q4 2020 and FERC is finalizing their review of the full application package. Since the launch of their Micro Hydro New York website, Bard has released several blog posts about project status and FERC approval on a real-time basis.
- Suffolk County Community College (SCCC) completed the project design and construction documents for their Renewable Energy and STEM Center (RESC) to achieve Net Zero Energy (NZE) in Q3 2020. Following design completion, SCCC obtained a building permit for the RESC and issued an RFP to solicit a general contractor for the building's construction. SCCC selected and awarded a general contractor in Q4 2020 and construction began in Q2 2021.

### Success Story: Workforce Development

The Green Jobs Green New York (GJGNY) Workforce Training and Development (WFD) initiative complements other NYSERDA and New York State Department of Labor (DOL) programs targeted at preparing individuals for energy efficiency, solar thermal, and solar electric careers in New York State. WFD programs help to build the State's capacity for long-term carbon reduction, facilitate energy education programs that will help build a clean

energy future, and provide long-term career opportunities for individuals seeking to work in clean energy. Specifically, GJGNY efforts are expanding the State Registered Apprenticeship Program and additional third-party accredited building trades programs by providing clean energy specific content in those training activities. Expectations are to increase access to technical training workshops for skill enhancement and certification. In addition, the GJGNY-supported programs are expected to bridge the gap between training and employment through on-the-job training incentives for businesses seeking to hire and train new workers while reaching out to low-income communities to expand training opportunities. From the program's inception a total of 4,184 New Yorkers were trained in a range of energy efficiency and renewable energy courses.

In 2020, NYSERDA advanced approximately \$520,000 in GJGNY WFD funds that will be made available to eligible New York State employers. This program supports wages for new hires on a first-come, first-served basis for eligible clean energy businesses. The program includes higher wage subsidies for employers that hire workers with additional barriers to employment. On Long Island, GJGNY supported 51 total On the Job Training hires in 2019, and a total of 245 total for 2020 – which represents over 480% year-over-year growth in the program to support business hiring, even during the height of the COVID-19 pandemic.

### Resources:

- [2020 RGGI Operating Plan](#)
- [Regional Greenhouse Gas Initiative \(RGGI\) Reports - NYSERDA](#)
- [GRoW History - UB Sustainability - University at Buffalo](#)
- [Blog Landing - Microhydro NY](#)
- [Clean Energy Industry reports](#)

## Rhode Island

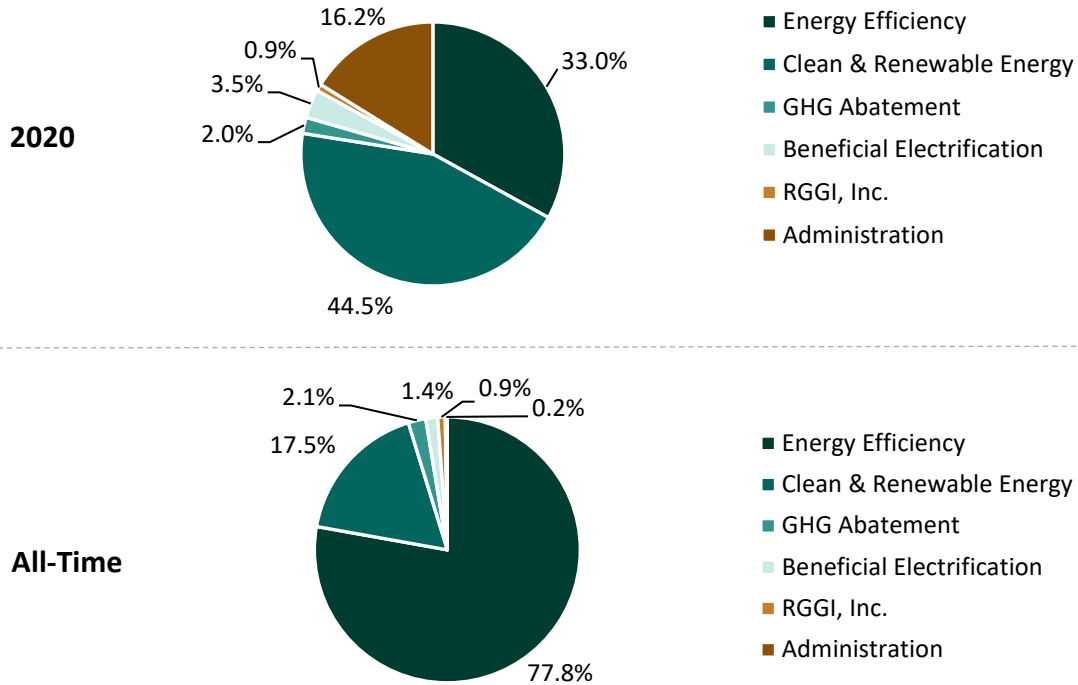
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Rhode Island RGGI auction proceeds are allocated by the state's Office of Energy Resources (OER) to drive investment in – and expansion of – clean energy resources, including cost-effective energy efficiency and renewables. In doing so, OER seeks to support investment and job growth in Rhode Island's burgeoning clean energy sector; reduce barriers to consumer adoption of clean energy solutions; place downward pressure on long-term energy costs; and shrink the state's carbon footprint. RGGI auction proceeds are accelerating cleaner, more sustainable energy solutions across public and private sector institutions and in Ocean State communities. These investments are being made in a manner consistent with the Regional Greenhouse Gas Initiative Act, Rhode Island's State Energy Plan, its 2021 Act on Climate, and broader state energy and environmental policy goals.

In 2020, Rhode Island RGGI proceeds were allocated to support several important clean energy programs, including:

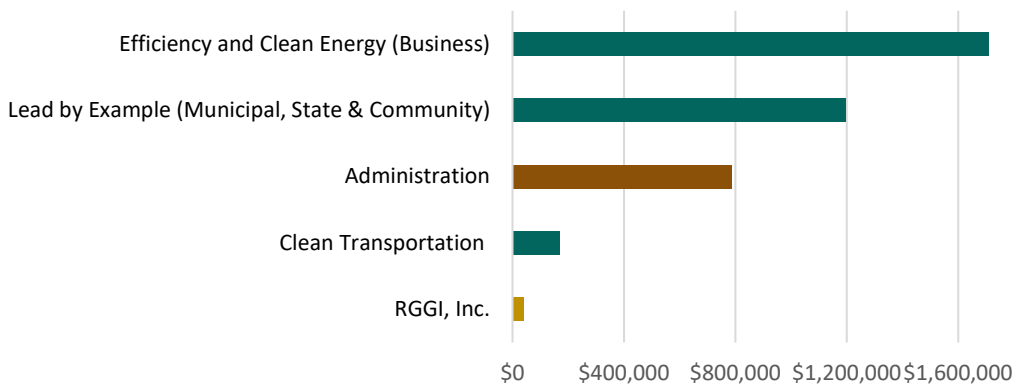
- Providing enhanced financial incentives to support Rhode Island municipalities with the conversion of local streetlights to high-efficiency LED technologies;
- Continued support for the Rhode Island Department of Environmental Management's Energy-Savings Trees program, which distributes trees to homeowners that can be strategically planted on their property and result in saving energy and lower utility bills;
- Advancement of the State Clean Energy Lead by Example program, which is supporting the adoption of energy efficiency and renewable energy projects at state government properties;
- Expanded cost-effective energy efficiency programs and incentives for utility customers located in the Pascoag Utility District;
- Support for the Rhode Island Infrastructure Bank's Efficient Buildings Fund (EBF). RIIB's EBF provides attractive, long-term financing to municipalities and quasi-public agencies for the completion of energy efficiency and renewable energy projects;
- Continued support for a Farm Energy Program that links local farms to energy efficiency and solar PV opportunities;
- Support for the Zero Energy for the Ocean State (ZEOS) program through collaboration with Rhode Island Housing and National Grid. This program is designed to help provide energy savings to low and moderate income (LMI) customers in Rhode Island;
- Support solar development on Brownfields through Rhode Island Commerce Corporation's Renewable Energy Fund; and
- Furthering solar PV adoption by Rhode Island homes and businesses through continued support of the state's Renewable Energy Fund.

Chart 22: Rhode Island RGGI Investments by Category



Rhode Island received \$81.9M in proceeds from 2008-2020. RGGI Investments represent \$4.9M in 2020, and \$55.7M cumulatively. \$26.3M is committed to 2021 and future programs.

Chart 23: 2020 Rhode Island RGGI Investments by Recipient



Rhode Island RGGI investments represent \$4.9M in 2020.

## Success Story: Pascoag Utility District Battery Storage

The Pascoag Utility District (PUD) is a not-for-profit, quasi-municipal utility serving approximately 5,000 electric customers in the Pascoag and Harrisville sections of Burrillville, Rhode Island.

Their electric service territory is serviced by two feeder lines, one primary and one backup, which were meeting or exceeding maximum capacity during peak load conditions. After comparing options from a system impact study conducted to look for solutions to alleviate these grid concerns, PUD decided to undertake a “non-wires alternative” or NWA project to address this need rather than implement a traditional infrastructure upgrade to both feeder lines.

This NWA solution involved a substation expansion to allow both feeder lines to serve PUD’s load simultaneously at peak conditions in combination with a 3 MW/9 MWh battery storage device that will allow PUD to dispatch stored power under contingency conditions or when one of the feeder lines is down.

This project is expected to cost approximately \$2.3 million dollars, providing significant savings when compared to the estimated \$6-\$12 million cost of the traditional infrastructure upgrade. As a not-for-profit utility, maintaining low rates and reliable service are two of PUD’s most important priorities, which this NWA solution advanced. In addition, this innovative project will better utilize clean energy resources in the Pascoag territory by charging during off-peak hours and deploy energy during high-load hours to reduce overall load on PUD’s system. Having battery storage of this capacity also provides an important resiliency asset to this community that can be deployed during emergency situations or in response to extreme weather conditions to maintain critical services for their customers.

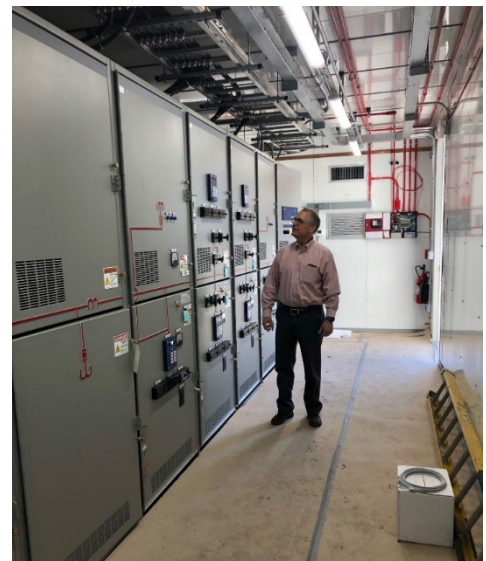
Further showcasing Pascoag Utility District’s leadership and creativity was their pursuit of numerous funding channels to support this project. PUD was able to secure financing for some of the project costs through the Rhode Island Infrastructure Bank at well-below market interest rates while bringing on a strong institutional partner to support this project.

This project began construction in 2021 and is expected to be fully complete, interconnected, and operational in 2022 prior to the summer peak season. Once operational, it is anticipated that this clean energy project will deliver over 80 tons of CO2 reductions annually and provide significant reliability and grid optimization services to the community as well.

This project was funded with RGGI Proceeds.

### Resources:

- [Regional Greenhouse Gas Initiative \(RGGI\)- Rhode Island -Office of Energy Resources \(ri.gov\)](https://www.ri.gov/energy-resources)



## Vermont

Vermont invests the majority of its CO<sub>2</sub> allowance proceeds in programs managed by Efficiency Vermont. RGGI funds allow Efficiency Vermont to expand its electrical energy efficiency programs to include thermal energy and process fuels efficiency programs. Efficiency Vermont's participation in the regional grid's forward capacity market also provides funds for this program expansion. Vermont's thermal energy and process fuels efficiency programs funded by RGGI through 2020 are estimated to result in lifetime energy savings of 4,672,229 MMBtu. These programs are estimated to avoid the emission of 278,837 short tons of CO<sub>2</sub>, and to save participants \$113,109,031 on their energy bills over the lifetime of those investments. Vermont's RGGI-funded programs have served approximately 12,326 households and 689 businesses. Programs currently supported by CO<sub>2</sub> allowance proceeds include the Home Performance with ENERGY STAR® service for residential customers, the Building Performance service providing incentives for efficiency services to small business customers, the Home Energy Loan for residential customers, low-income energy efficiency services through 3E Thermal project management, custom commercial thermal efficiency projects, and technologies including woodstoves and heat pumps.

Efficiency Vermont, the nation's first ratepayer-funded energy efficiency utility, is overseen by the Vermont Public Utility Commission, and implemented by VEIC. Efficiency Vermont's programs have a proven track record of saving energy and money for commercial, industrial, and residential consumers. These and other energy efficiency programs helped to rank Vermont third in the nation in 2020, according to the American Council for an Energy Efficient Economy (ACEEE) State Energy Efficiency Scorecard.

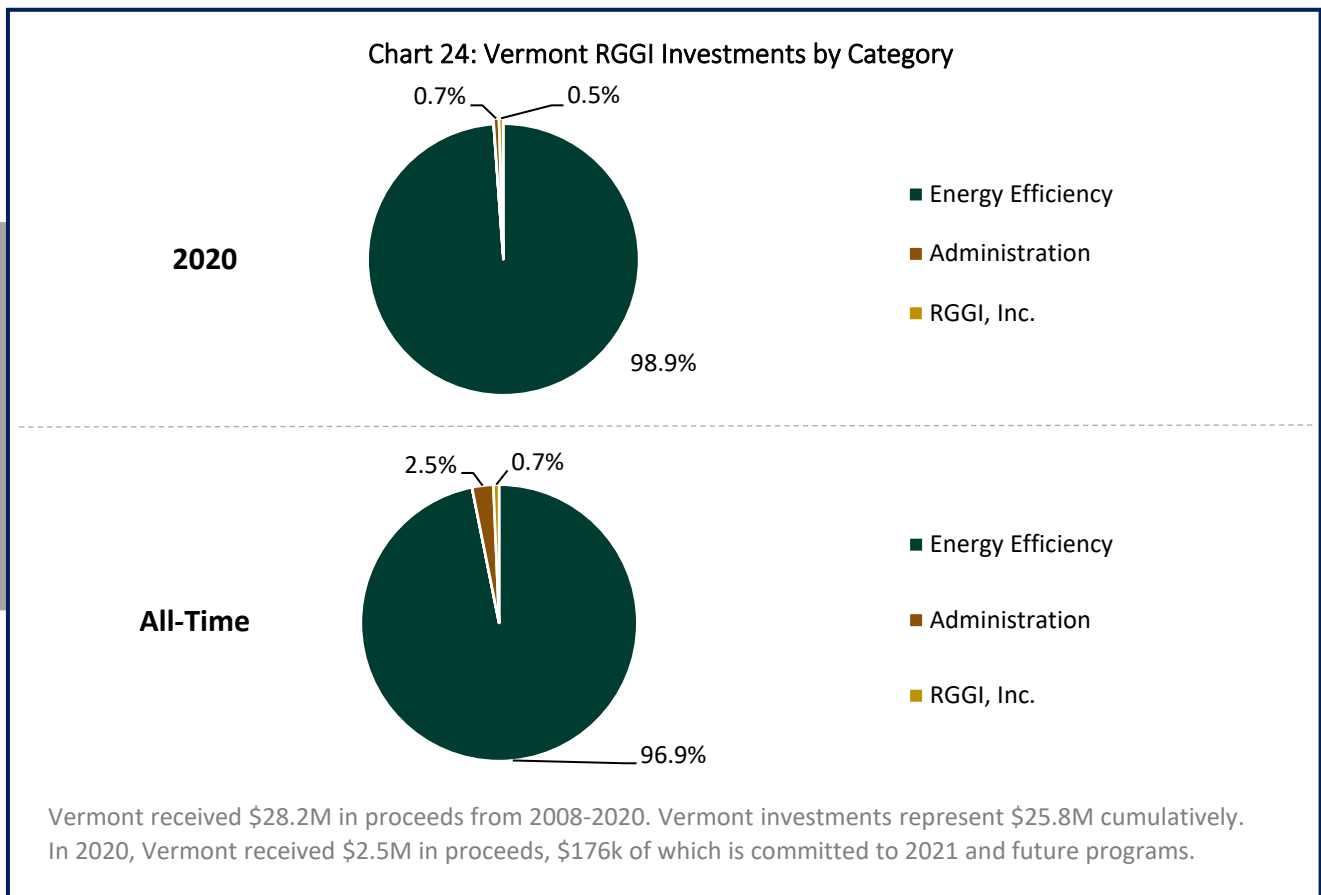
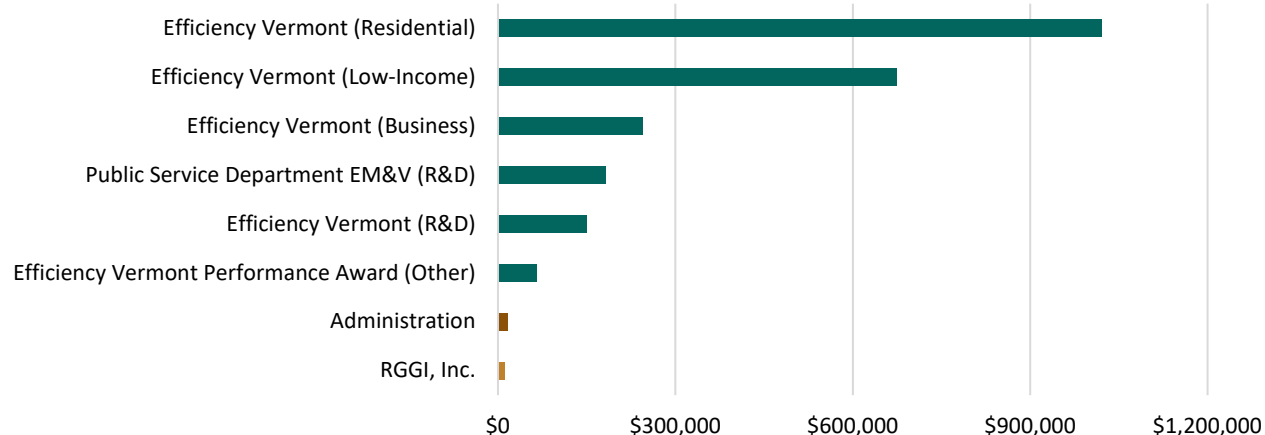




Chart 25: 2020 Vermont RGGI Investments by Recipient



Vermont RGGI investments represent \$2.4M in 2020.

### Program Highlight: Home Performance with ENERGY STAR and Home Energy Loan

The Efficiency Vermont Home Performance with ENERGY STAR service is an incentive-based program for single-family Vermont residences to lower utility bills and increase home comfort and safety by installing insulation, air sealing, and ventilation (heating systems improvements are also recommended). Vermonters can access comprehensive thermal efficiency retrofits, incentives to offset project costs, and low-no interest rate financing. Customers hire a participating Efficiency Excellence Network, Building Performance Institute certified, contractor. This allows customers to receive incentives up to \$5,500, requires the contractor to meet Vermont residential building energy codes and standards, health and safety and program requirements, and provides quality assurance for projects.

The Efficiency Vermont Home Performance with ENERGY STAR service officially launched in 2005. In 2008, when the Vermont Legislature set a statewide goal to weatherize 80,000 homes by the year 2020, the Home Performance with ENERGY STAR service was galvanized. The legislation sought to harness energy efficiency as a driver of savings for consumers and economic development in Vermont. Home Performance with ENERGY STAR is one of the primary programs contributing to these goals.

Home Performance with ENERGY STAR is a national brand managed by the U.S. Department of Energy (U.S. DOE). Across the US, 50 organizations sponsor local programs under this brand. Although local programs differ, they follow the same basic structure to ensure a comprehensive, whole-house approach to energy efficiency and maximize long-term savings for homeowners. The key components of the Home Performance with ENERGY STAR program approach are outlined by U.S. DOE and implemented in Vermont by Efficiency Vermont.

The RGGI funded portion of the Efficiency Vermont Home Energy Loan program provides residential customers financing for Home Performance with ENERGY STAR projects and other thermal efficiency projects, including woodstoves (pellet and cord wood), and central pellet heating systems with income-based interest-rate buydowns and loan loss reserve support for participating lenders.

### Success Story: RGGI Funds Help VT Accelerate Moderate-Income Weatherization Support

Efficiency Vermont helps Vermonters who don't qualify for low-income assistance weatherize their homes by providing rebates that offset the project costs. A substantial portion of the funding for these incentives has come from RGGI revenues, which have helped Efficiency Vermont build its robust Home Performance with ENERGY STAR program.

Leading up to 2020, Efficiency Vermont was able to support between 800-1,100 households each year through the Home Performance with ENERGY STAR program. This strong annual participation allowed the weatherization market to develop over time and positioned the state to make significant enhancement when the opportunity presented itself.

Such an opportunity came in 2019, when the legislature passed, and Governor Scott enacted, Act 62, allowing Efficiency Vermont to repurpose existing budget dollars from its electric energy efficiency budget as a result of operational efficiency cost savings, to help more moderate-income Vermonters weatherize their homes. With a strong Home Performance with ENERGY STAR program already well established, thanks in part to the sustained investment of RGGI funds over time, Efficiency Vermont was able to rapidly deploy these funds as increased incentives for moderate income Vermonters in 2020.

Efficiency Vermont reinvigorated and expanded the existing weatherization offer to provide up to 75% off project costs, with 0% interest financing for 60 months, and the first six months of payments would be paid for by Efficiency Vermont. It was paired with a robust, multimedia campaign.

The impact was immediate. Once the cost came down through the upfront incentive, and homeowners could break the remaining cost into low monthly payments (about \$50 a month), the demand for weatherization surged statewide.

Steve Dunn, Program Manager for the DOE Home Performance with ENERGY STAR program, said that Efficiency Vermont is leading the effort to improve energy efficiency in homes, which lowers energy costs and improves home comfort and safety for thousands of families across the state, including communities that are not able to afford the cost of energy efficiency improvements.



*Jill Neitlich and husband Flynn of Wardsboro, VT joined thousands of other Vermonters in 2020 by taking advantage of weatherization incentives through Efficiency Vermont's Home Performance with ENERGY STAR program.*

“By providing low-moderate income families access to weatherization programs, Efficiency Vermont has made sure that the energy savings and health benefits of weatherization improvements are available to the families who need it most,” said Dunn.

Thanks to consistent funding for more than a decade through RGGI and other revenues, Efficiency Vermont was able to tap into a proven, fully developed Home Performance with ENERGY STAR program in 2020 to ramp up the program and extend its reach to thousands of Vermonters who most needed it.

As the Vermont Public Utility Commission stated in its Act 62 Final Report to the legislature, “Efficiency Vermont was able to quadruple the number of projects it completed by reducing up-front project costs. In August and September 2020, increased funding allowed Efficiency Vermont to complete four to five times the number of projects historically completed in those months.”

Weatherization directly supports Vermonters, boosts a growing workforce, and reduces greenhouse gas emissions. The past decade has proved that our statewide system of delivering these benefits has been effective. 2020 proved that without a stable, long-term source of additional funding like RGGI, Vermont would have missed out on the opportunity to help thousands more Vermonters. Efficiency Vermont looks forward to continuing its successful partnerships to serve Vermonters and support our state's goals for many years to come.

## Resources:

- [Efficiency Vermont Rebates](#)
- [Efficiency Vermont Services](#)
- [Efficiency Vermont News](#)

## Glossary and Methodology

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### Program Categories

#### **Administration**

Funds directed to administrative overhead expense associated with all RGGI-funded programs, including outsourced and in-house overhead expenses.

#### **Beneficial Electrification**

Programs designed to reduce fossil fuel consumption by implementing or facilitating fuel-switching to replace direct fossil fuel use with electric power. Examples include incentives for electric vehicles and home appliances, and installation of electric vehicle infrastructure. Program costs include evaluation and measurement.

#### **Clean and Renewable Energy**

Programs directed at accelerating the deployment of renewable or other non-carbon emitting energy technologies. Program costs include evaluation and measurement. Examples include incentives for residential solar panels, financing of commercial renewable energy projects through green banking, research and development of new energy technologies.

#### **Direct Bill Assistance**

Programs providing energy bill payment assistance, including direct bill assistance to low-income ratepayers. Program costs include evaluation and measurement.

#### **Energy Efficiency**

Programs designed to improve energy efficiency by reducing overall energy use without degrading functionality. This includes programs directed at assisting low-income families and small businesses. Program costs include evaluation and measurement. Examples: home energy audit programs, home and building weatherization, energy efficient appliance or industrial equipment rebate programs, compact fluorescent light bulb programs, and energy efficiency workforce training programs.

#### **Greenhouse Gas Abatement**

Programs promoting the research and development of advanced energy technologies, the reduction of vehicle miles traveled, the reduction of emissions in the power generation sector, tree-planting projects designed to increase carbon sequestration, and other initiatives to reduce greenhouse gases. Program costs include evaluation and measurement.

#### **RGGI, Inc.**

Funds provided to RGGI, Inc. to support and implement state CO<sub>2</sub> Budget Trading programs.

### General Terms

#### **RGGI Investments**

RGGI Investments are the proceeds generated by RGGI CO<sub>2</sub> allowance auctions that have been invested by the RGGI states in the energy efficiency, clean and renewable energy, GHG abatement, and direct bill assistance programs discussed in this report.

#### **Future Committed**

Future committed funds are the proceeds generated by RGGI CO<sub>2</sub> allowance auctions that have not yet been invested by the RGGI states. Future committed proceeds represent funds that could be invested by the state in 2020 and beyond.

#### **Current Period**

The twelve-month period covered by this report, which may be either the fiscal year or calendar year 2020, as defined by each state.

## Benefits and Statistics

### **Annual (2020)**

A measure of one year's worth of benefits from all measures installed in 2020. Note that actual realized benefits in the year 2020 may differ slightly from the 2020 annual benefits, since measures may be installed at different times during the year.

### **Lifetime (2020)**

The full benefits of measures installed in 2020, including benefits to be realized in the future. The lifespan of installed measures varies by type of measure and by program, and is calculated and provided by program administrators. For example, an industrial boiler would likely be estimated to provide benefits over a longer lifespan than an LED lightbulb. Measure lifespans used in this report typically range between 5-25 years.

### **Lifetime (All-Time)**

The total estimated lifetime benefits of all measures installed since the inception of the RGGI program. This includes the full lifetime benefits of measures installed in previous years, in addition to the lifetime benefits of 2020 measures.

### **Funds Invested**

Total dollar amount of RGGI proceeds invested in a program or category over a given period. For programs that are partially funded by RGGI, only the amount provided by RGGI funds is included.

### **Participating Households: Programs**

Number of households that have directly received assistance as a result of each program (e.g. number of homes weatherized, number of households receiving home energy audits, etc.). Households participating in more than one program may be counted under each program they have participated in (e.g. a completed home energy audit constitutes a participating household even if the household may elect to further participate in programs to install recommended measures). For multi-family dwellings, each unit within the multi-family home may be considered to be a household. For retail programs such as lightbulb distribution, households may be extrapolated from the number of items distributed.

### **Participating Households: Direct Bill Assistance**

Number of households receiving direct bill assistance or energy bill rebates funded through RGGI proceeds. Bill assistance programs vary by state; in some cases rebates may be returned to all customers, while in other cases they may be targeted to low-income customers or to specific customer types.

### **Participating Businesses: Programs**

Number of "end-user" businesses who have directly received assistance as a result of the program (e.g. number of businesses whose offices were weatherized, number of businesses receiving grant assistance to install energy efficiency measures, etc... via a grant, loan, or rebate). Businesses participating in more than one program will be counted under each program they have participated in (e.g. a completed audit constitutes a Participating Business even if the business may elect to further participate in programs to install recommended measures).

### **Participating Businesses: Direct Bill Assistance**

Number of businesses receiving direct bill assistance or energy bill rebates funded through RGGI proceeds.

### **Increased Employment**

Total estimated job-years created as a result of RGGI funds invested, estimated on a regional basis based on literature review.

### **MWh Avoided**

Estimated total MWh projected to be avoided as a result of RGGI funds invested, calculated using program-specific savings as defined by each state.

### **MMBtu Avoided**

Estimated total MMBtu projected to be avoided as a result of RGGI funds invested, calculated using program-specific savings as defined by each state.

**Energy Bill Savings**

Estimated gross amount saved as a result of RGGI funds invested (initial investment in installed measures is not deducted). Calculated using program-specific savings, as defined by each state. Estimates of lifetime energy bill savings are given in current year dollars as of the start of the savings, and in most cases are not discounted into the future. Where discounts are applied, they are noted on state-specific pages.

**CO<sub>2</sub> Emissions Avoided**

Estimated total number of short tons of CO<sub>2</sub> avoided as a result of funds invested, calculated using a program-specific formula as defined by each state.

## RGGI States Proceeds Contacts

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