The Regional Greenhouse Gas Initiative

An Initiative of Eastern States of the United States

The Investment of RGGI Proceeds in 2021

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This report is the product of the Regional Greenhouse Gas Initiative, Inc. (RGGI, Inc.). For regulatory matters, consult the regulations of each state cited throughout this report. RGGI, Inc. is a 501(c)(3) non-profit corporation formed to provide technical and administrative services to the RGGI CO_2 Budget Trading Programs of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia.

Executive Summary

Proceeds from the Regional Greenhouse Gas Initiative (RGGI) have powered significant investment in the energy future of the participating states. This report reviews the benefits of programs funded in 2021 by $374 million in RGGI investments, which have reduced harmful carbon dioxide (CO_2) emissions while spurring local economic growth. The lifetime effects of 2021 RGGI investments are projected to avoid the release of 4.4 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 2021 are estimated to return $1.2 billion in lifetime energy bill savings to 44,500 households and 1,000 businesses that participated in programs funded by RGGI proceeds, while over 80,000 households and 38,000 businesses received direct bill assistance in 2021. As a whole, the RGGI states have reduced power sector CO_2 emissions by 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 51% of 2021 RGGI investments and 55% of cumulative investments. Programs funded by these investments in 2021 are expected to return about $418 million in lifetime energy bill savings to more than 34,000 participating households and over 570 businesses in the region and avoid the release of 2.3 million short tons of CO_2.

Clean and renewable energy makes up 4% of 2021 RGGI investments and 13% of cumulative investments. RGGI investments in these technologies in 2021 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_2.

Beneficial electrification makes up 13% of 2021 RGGI investments and 3% of cumulative investments. RGGI investments in beneficial electrification in 2021 are expected to avoid the release of 370,000 short tons of CO_2 and return nearly $164 million in lifetime savings.

Greenhouse gas abatement and climate change adaptation makes up 11% of 2021 RGGI investments and 8% of cumulative investments. RGGI investments in greenhouse gas (GHG) abatement and climate change adaptation (CCA) in 2021 are expected to avoid the release of more than 10,000 short tons of CO_2 and to return over $20 million in lifetime savings.

Direct bill assistance makes up 14% of 2021 RGGI investments and 13% of cumulative investments. Direct bill assistance programs funded through RGGI in 2021 have returned over $29 million in credits or assistance to consumers.

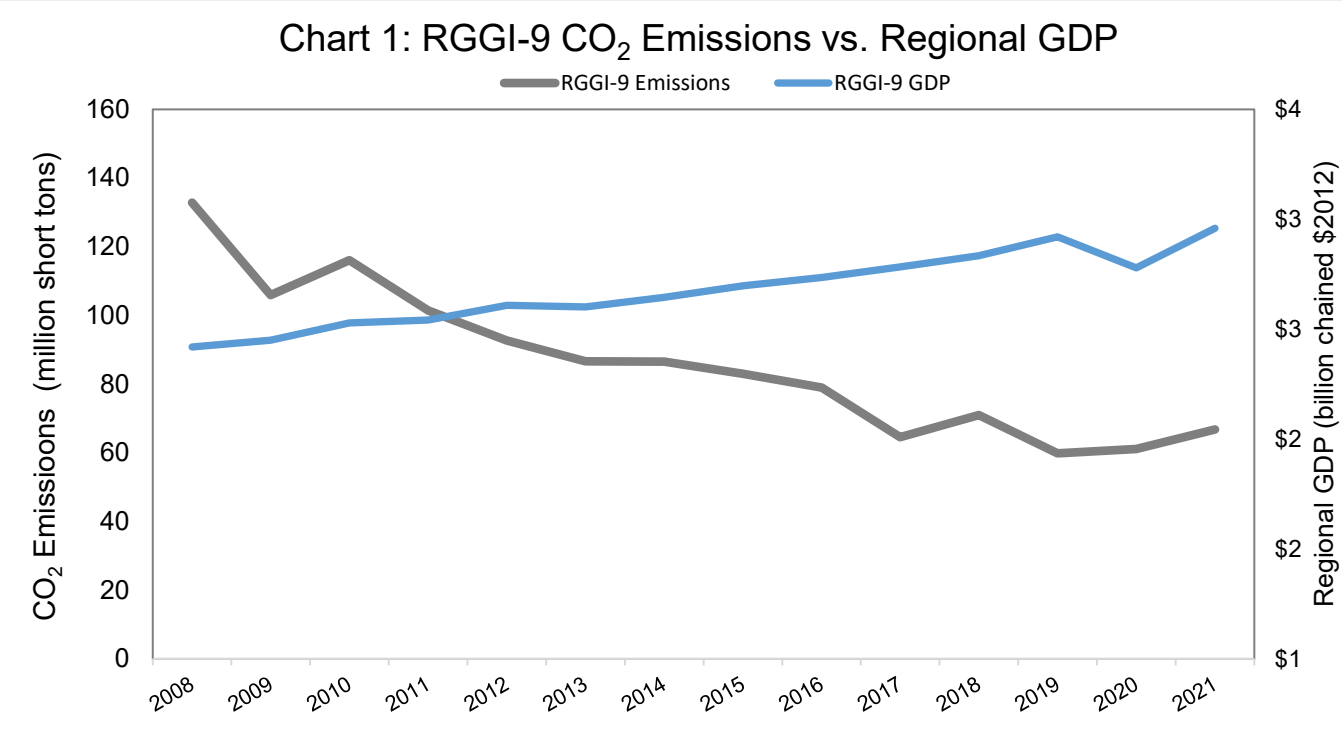
These investments, in concert with the broader energy policies in each RGGI state, have enabled the region to continue to set a national example in driving decarbonization while strengthening economic resilience.

Introduction

The Regional Greenhouse Gas Initiative

RGGI is the nation's first multi-state initiative to reduce power sector CO_2 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_2 emissions that power plants can emit by issuing a limited number of tradable CO_2 allowances. Each allowance represents an authorization for a regulated power plant to emit one short ton of CO_2. Individual CO_2 budget trading programs in each RGGI state together create a regional market for CO_2 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.

Chart 1 shows the change in CO_2 emissions compared with GDP over the first four RGGI control periods (2009 – 2020) for the nine states that participated in RGGI through the entirety of that period (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont). New Jersey participated in RGGI from 2009 to 2011, and resumed its participation starting in 2020. Virginia initiated its RGGI participation in 2021, and Pennsylvania initiated participation in 2022. Each state's independent regulations are based on the RGGI Model Rule. RGGI investments in this report include the eleven participating RGGI states in 2021.



The RGGI states have distributed 90% of CO_2 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 for the entirety of the first four RGGI control periods (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**).[1] This represents a reduction in power sector carbon emissions of over 50%.

[1] 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.

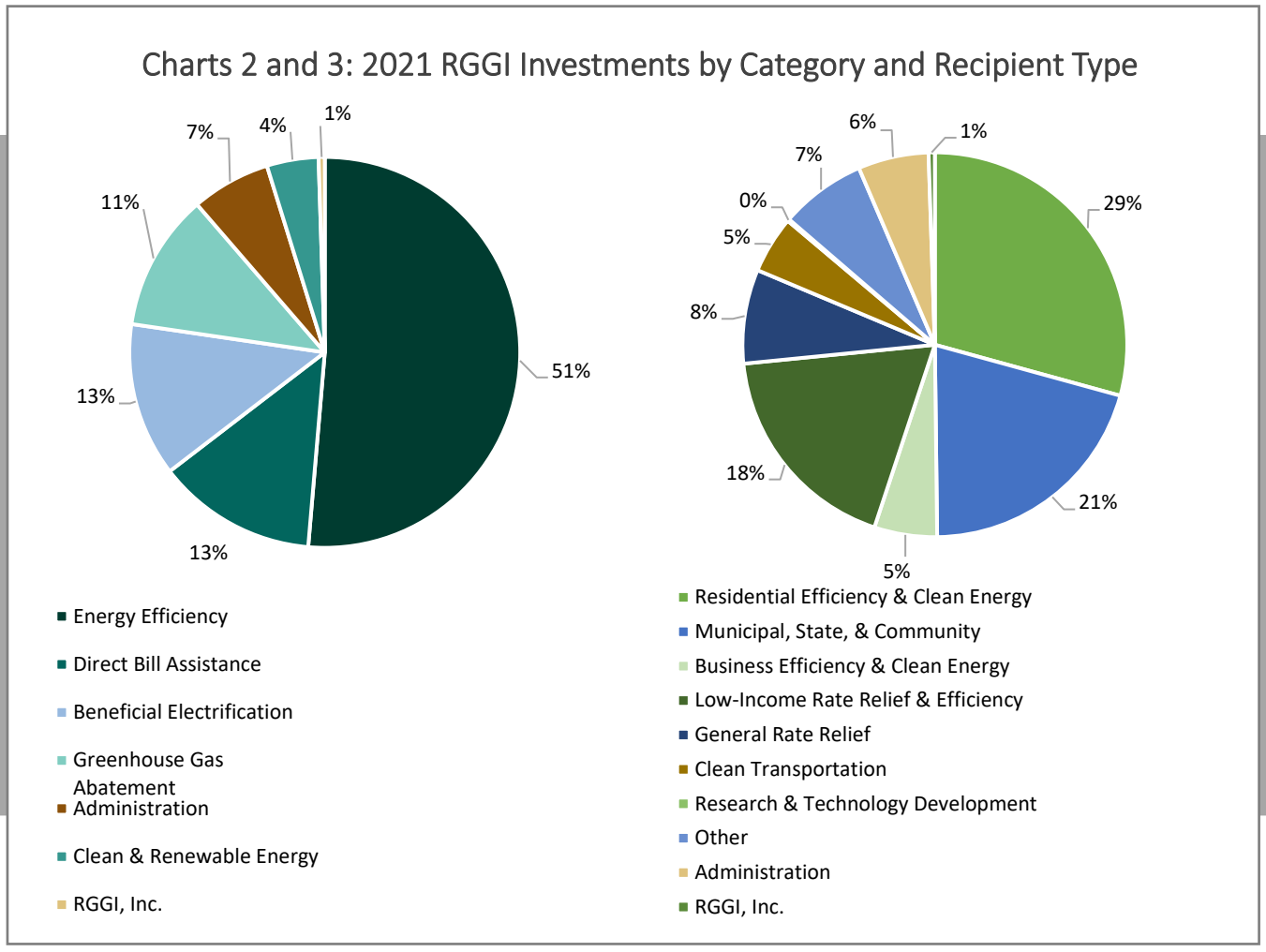
2021 RGGI Investments

This report estimates the benefits, such as energy bill savings and avoided CO_2 emissions, that arise from $374 million in 2021 RGGI investments. RGGI investments as defined within this report include investments in energy efficiency, clean and renewable energy, beneficial electrification, greenhouse gas abatement and climate change adaptation, and direct bill assistance, as well as administrative costs associated with these programs. This report focuses on 2021 annual investments. RGGI investments throughout the region cover a wide variety of programs.

Chart 2 shows 2021 RGGI investments divided among major program categories. **Chart 3** illustrates the same 2021 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 and CCA includes a wide variety of program types, including research funding, community flood preparedness, 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 2021, 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 $1.2 billion on energy bills and avoid the emission of 4.4 million short tons of harmful CO_2 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.

Table 1: Benefits of 2021 RGGI Investments

Category	Annual Benefits of 2021 Investments	Lifetime Benefits of 2021 Investments
Short Tons CO_2 Avoided	235,299	4,445,594
Energy Bill Savings	$94,118,252	$1,235,674

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.

The states are continually working to improve the reporting of RGGI investments, including with respect to investments in environmental justice communities and the distribution of benefits created by RGGI investments. While this report does not for the most part distinguish the types of communities benefiting from RGGI investments, this is an active area of consideration which the states look to address further in future reports.

Energy Efficiency

Energy efficiency remains the largest portion of 2021 RGGI investments, at 51%. Over the lifetime of the installed measures, 2021 RGGI investments in energy efficiency are projected to save participants over $417 million on energy bills, providing benefits to more than 34,000 participating households and 570 participating businesses. They are also projected to avoid the release of 2.3 million short tons of CO_2 (see **Table 2**).

Table 2: Benefits of 2021 RGGI Investments in Energy Efficiency

Category	Annual Benefits of 2021 Investments	Lifetime Benefits of 2021 Investments*
Participating Households	34,161	n/a
Participating Businesses	570	n/a
Increased Employment	n/a	427 job years**
Short Tons CO_2 Avoided	114,547	2,304,887
Energy Bill Savings	$21,299,159	$417,852,424
MMBtu Saved	1,845,678	40,416,435
MWh Saved	147,213	2,512,070

*For each investment category, states use assumptions about the lifespan of their 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.

**Estimated job-years created. This estimate was created by applying job factors used in the 2021 NYSERDA Clean Energy Industry Report to corresponding programs receiving RGGI investments. These estimates represent direct job-years created only, excluding indirect and induced job creation estimates which were included in previous reports. For more information, see Increased Employment in the Glossary and Methodology section of this report.

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 2021 RGGI investments projected to create an estimated additional 427 direct 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. Seven RGGI states once again ranked among 2021'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 4% of 2021 RGGI investments in the region. Over the lifetime of the projects installed in 2021, these investments are projected to offset $604 million in energy expenses. They are also projected to avoid the release of nearly 1.8 million short tons of CO_2 emissions (see **Table 3**).

Table 3: Benefits of 2021 RGGI Investments in Clean Energy

Category	Annual Benefits of 2021 Investments	Lifetime Benefits of 2021 Investments
Short Tons CO_2 Avoided	94,822	1,761,258
MWh Avoided*	186,554	3,400,311
MMBtu Avoided	40,342	961,601
Energy Bill Savings	$31,542,135	$603,681,406

*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 103%. In 2021 the RGGI states derived 60% 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 13% of 2021 RGGI investments in the region. Over their lifetime, the investments in beneficial electrification made in 2021 are expected to avoid 369,000 short tons of CO_2 emissions and result in $164 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 2021 RGGI Investments in Beneficial Electrification

Category	Annual Benefits of 2021 Investments	Lifetime Benefits of 2021 Investments
Short Tons CO_2 Avoided	25,270	369,422
Energy Cost Savings*	$11,671,729	$164,153,933
MMBtu Saved	289,328	4,140,985
MWh Increased	17,869	255,349

*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 and Climate Change Adaptation

Greenhouse gas (GHG) abatement and climate change adaption (CCA) is a broad category encompassing other ways of reducing greenhouse gases, apart from energy efficiency and clean and renewable energy, as well as projects that focus on preparing for and addressing the impacts of climate change on local communities. Approximately 11% of 2021 RGGI investments supported GHG abatement and CCA programs. Over their lifetime, the investments made in 2021 are expected to avoid the release of over 10,000 short tons of CO_2 (see **Table 5**).

Programs in the GHG abatement and CCA 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 and CCA, as they may lead to advancements resulting in the reduction of greenhouse gases. Climate change policy research, coastal resilience, and flood preparedness programs are also tracked as GHG abatement and CCA.

GHG abatement and CCA 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.

Programs related to climate change adaptation represent a new and growing focus of programs receiving RGGI investment. Because of this, the RGGI states are considering how best to report the benefits of investment in these programs which might not be captured by the metrics used in this report. For example, Virginia invests a large portion of its RGGI proceeds into community flood preparedness programs, whose benefits are not reflected in GHG reduction and bill savings metrics reported here. The states continue to develop their reporting of RGGI investments and look to more comprehensively capture the variety of benefits created by investment in these programs.

Table 5: Benefits of 2021 RGGI Investments in GHG Abatement & CCA

Category	Annual Benefits of 2021 Investments	Lifetime Benefits of 2021 Investments
Participating Households	3,068	n/a
Participating Businesses	128	n/a
Short Tons CO_2 Avoided	659	10,026

Direct Bill Assistance

Direct bill assistance returns money to consumers as a rebate on their energy bills. Approximately 13% of 2021 RGGI investments have funded direct bill assistance. RGGI investments in direct bill assistance in 2021 returned $30 million in bill savings to energy consumers in over 81,000 households and 38,000 businesses (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.

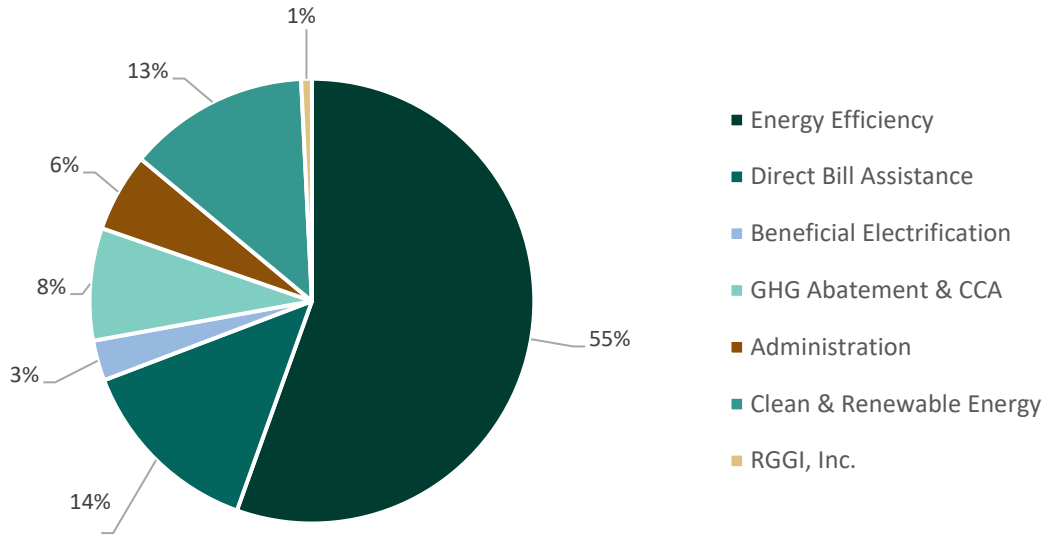
Table 6: 2021 RGGI Investments in Direct Bill Assistance

Category	Annual Benefits of 2021 Investments
Participating Households	81,861
Participating Businesses	38,494
Energy Bill Savings	$29,605,229

Cumulative Uses of Auction Proceeds

While this report focuses primarily on 2021 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.



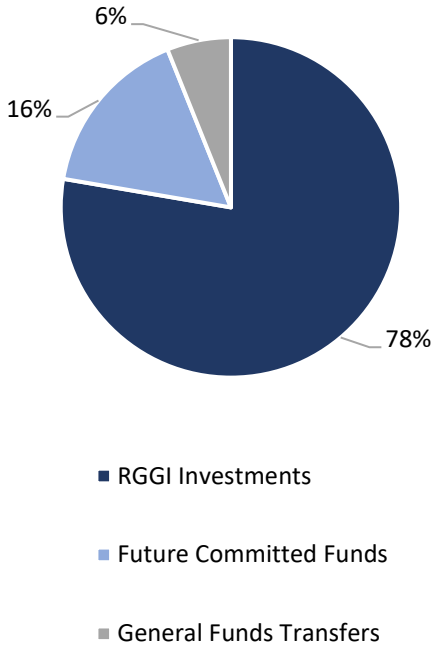
The states participating in RGGI invested $3.6B as of 2021.

RGGI investments are themselves a subset of total proceeds. Most RGGI proceeds through 2021 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, 2021	$4,728,158,106
Adjustment for Fiscal Year Reporting	$82,889,420
General Funds Transfers	$282,500,000
Future Committed Funds	$753,818,673
RGGI Investments	$3,608,950,013



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_2 avoided. Note that as the program's track record grows longer, all-time numbers may include changes in states' methodologies from year to year.

Table 7: All-Time Benefits of RGGI Investments

Category	Lifetime Benefits of All RGGI Investments
Participating Households	7,450,152
Participating Businesses	293,493
Short Tons CO_2 Avoided	53,248,536
Megawatt-Hours Saved	83,601,109
MMBtu Saved	301,925,868
Energy Bill Savings	$16,056,183,501

Previously reported cumulative data plus 2021 data may not sum exactly to updated cumulative data. This is due to state adjustments or corrections to prior cumulative calculations.

Connecticut

Connecticut reserves RGGI auction proceeds for investment towards programs resulting in energy efficiency improvements and for financing for renewable energy projects. The allocation of auction proceeds for 2021 is as follows:

- 69.5% of its auction proceeds ($27.5 million) 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).
- 23% to the Connecticut Green Bank ($9.08 million) to fund development of Class I renewable energy sources.
- 7.5% to the Department of Energy and Environmental Protection ($2.63 million) for administrative purposes.

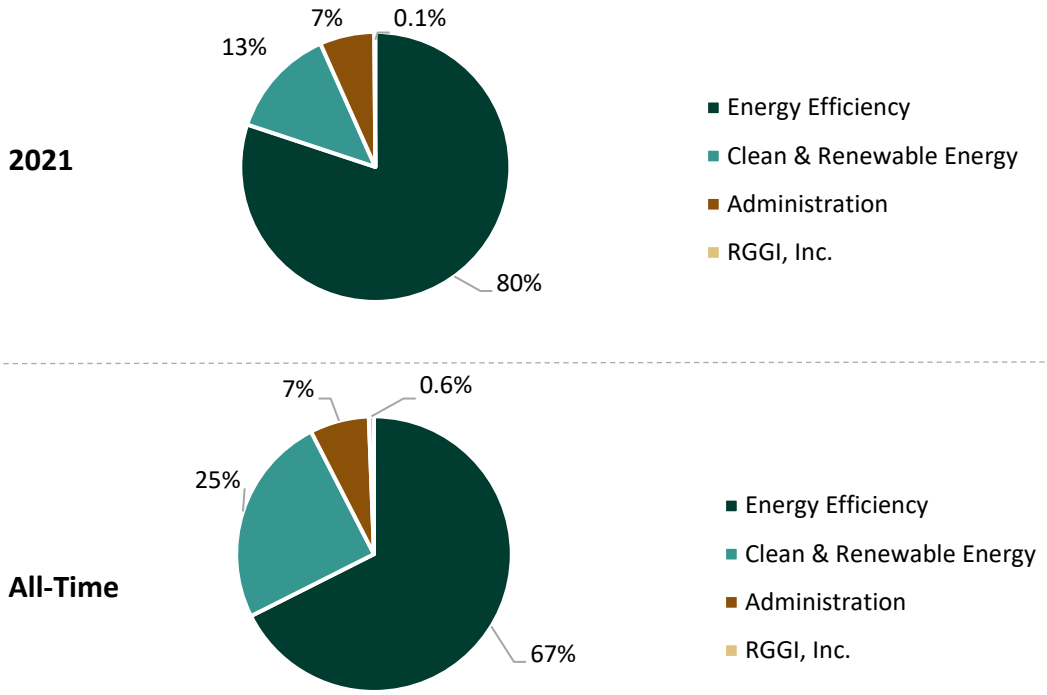
Throughout 2021, Connecticut allocated RGGI auction proceeds to the following programs:

- Home Energy Solutions[SM] Program: Under this program The United Illuminating company and Eversource Energy invested RGGI funds to conduct residential energy audits and weatherize homes. Over 18,000 residential customers participated in some form of fossil fuel energy efficiency program in 2021.
- Home Energy Savings Program: Under this program, WED used RGGI funds to perform residential energy audits and weatherized homes. In 2021, WED served 451 homes and provided weatherization services to 198.
- 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 2021, the Connecticut Green Bank invested RGGI proceeds in C-PACE to help finance fourteen projects, six of which were completed. The remaining projects are still in development.
- Solar Power Purchase Agreement (PPA) Program: Under this program, the Connecticut Green Bank offers building owners to install solar panels without the cost and responsibility for maintenance. With the PPA program, building owners purchase the energy generated by the panels at an agreed upon price for a 20-year term.
- Various energy efficiency projects: CMEEC used RGGI funds toward the deployment of residential and commercial energy efficiency projects and retrofits. CMEEC used RGGI funding to perform energy saving upgrades for 324 residential customers and 23 commercial customers.

Connecticut has cumulatively invested $254 million in RGGI allowance proceeds toward programs and services dedicated to the deployment of energy efficiency measures and renewable energy technologies.

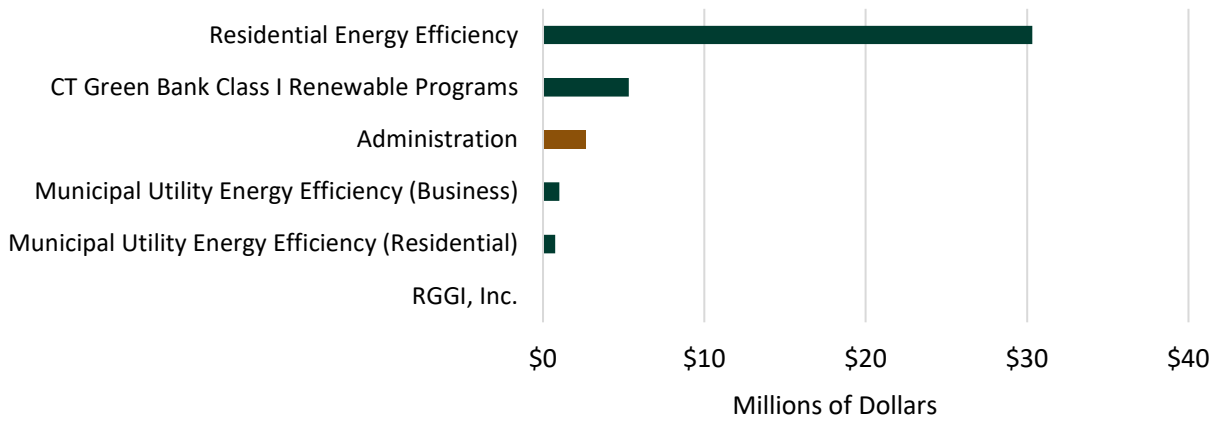
The American Council for an Energy-Efficient Economy (ACEEE) nationally ranked Connecticut ninth in its 2021 State Energy Efficiency Scorecard, which evaluated 2020 state energy efficiency efforts. Connecticut continues to rank in the top ten states on this scorecard as it has since its inception. Connecticut's ranking is determined in part by the state's commitment to strengthen its building codes and steps taken to hasten EV adoption through generous rebates and building up the state's public EV charging network as well as the beginning of Connecticut's Equitable Energy Efficiency (E3) proceeding in 2020. The E3 proceeding launched with the goal of focusing greater equity in decision-making as well as developing greater tracking of equity indicators in energy efficiency programs.

Chart 6: Connecticut RGGI Investments by Category



Connecticut received $286M in proceeds from 2008-2021. RGGI investments represent $40M in 2021, and $254M cumulatively. $8.5M is committed to 2022 and future investments.

Chart 7: 2021 Connecticut RGGI Investments by Recipient



Connecticut RGGI investments represent $40M in 2021.

Program Highlight: Commercial Property Assessed Clean Energy

The Commercial Property Assessed Clean Energy (C-PACE) program run by the Connecticut Green Bank allows commercial properties access to financing to make green energy upgrades to existing buildings and to new construction. The program offers up to 100% financing with payback timelines of up to 25 years. C-PACE requires qualifying projects to have a projected savings greater than the initial investment (including the financing costs.) In 2021, the Green Bank financed 14 projects with C-PACE with a projected lifetime reduction of greater than 155,000 Metric Tons of Carbon-Dioxide emissions.

Success Story: The Bushnell Center Heating System

The Bushnell Center for the Performing Arts is a multi-purpose performing arts center located in Hartford Connecticut and seats 2,800 people in Mortensen Hall, and an additional 906 people at the Maxwell M. and Ruth R. Belding Theater.

Mortensen hall was completed and opened in 1930 and until recently was heated by an old and inefficient boiler. The venue has recently completed a heating upgrade in which it acquired three energy efficient boilers and a new water heater via C-PACE Financing. The project was financed with $384,000 of C-PACE funds over 20 years and will save an estimated $59,000 in energy costs annually. Over the lifetime of the upgrades, an estimated $1.17 million in energy costs will be saved.

Resources

- The State Energy Efficiency Scorecard | ACEEE
- C-PACE Explained - CT Green Bank | Accelerating Green Energy Adoption in CT
- Home Page | EnergizeCT
- Energy Evaluations Single Family | EnergizeCT
- CUSTOMER-STORY-CPACE-BUSHNELL-080322.pdf (ctgreenbank.com)

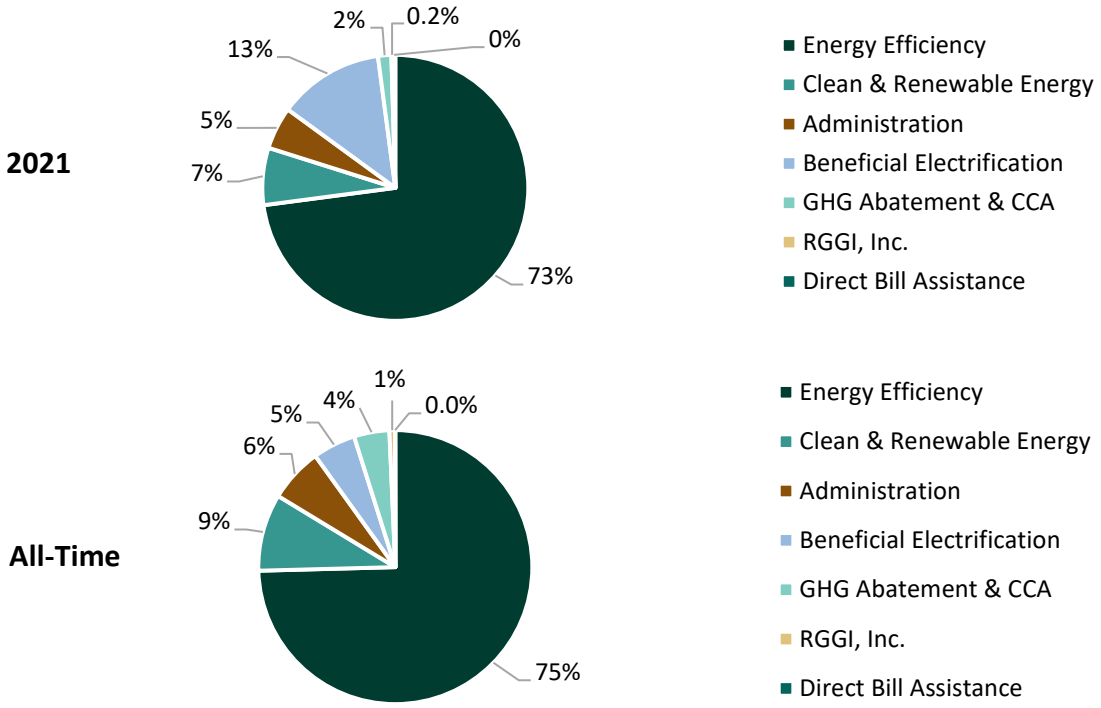
Delaware

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 to make 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.

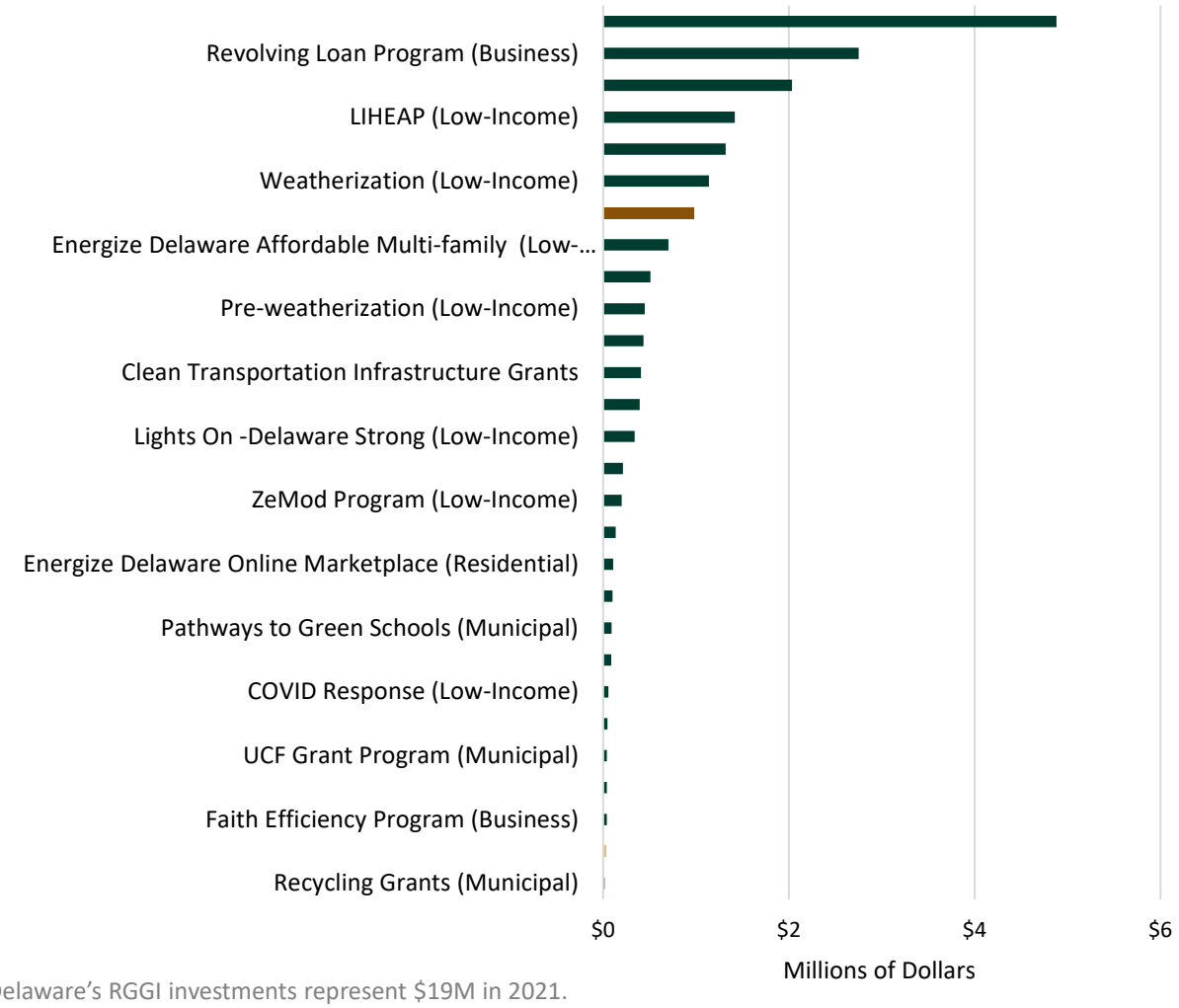
During 2021, Delaware invested RGGI auction proceeds in the following programs among others; Clean Transportation Incentive Programs, Weatherization Assistance Program, Home Performance with Energy Star, and Energize Delaware's Revolving Loan Program. Delaware has cumulatively invested over $166 million in RGGI allowance proceeds toward programs and services dedicated to the deployment of emissions reduction and energy efficiency measures to improve Delaware's environment, improve human health, and lessen energy bills for Delawareans.

Chart 8: 2021 Delaware RGGI Investments by Category



Delaware received $178M in proceeds from 2008-2021. RGGI investments represent $19M in 2021, and $167M cumulatively. $11M is committed to 2022 and future programs.

Chart 9: 2021 Delaware RGGI Investments by Recipient



Delaware's RGGI investments represent $19M in 2021.

Program Highlight: Delaware's Electric Vehicle Charging Equipment Rebate Program

Since 2015, DNREC's Electric Vehicle Charging Equipment Rebate Program (the Program) offers rebates to lower the cost of electric vehicle charging stations at the workplace, in multi-unit dwellings, outside of businesses, and in other public places. The Program provides rebates for Level 2 electric vehicle charging stations, and the maximum rebate amounts are $3,500 for single port stations and $7,000 for dual port stations.

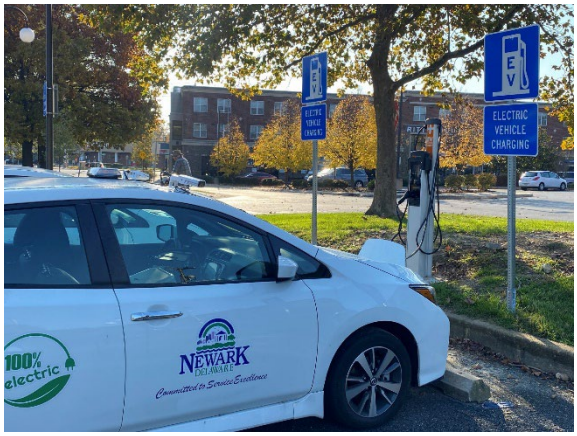
This Program was created because transportation emissions are the largest single source of greenhouse gas emissions in the state and transitioning to electric vehicles is a key component of meeting the state's climate goals. Delaware does not currently have enough DC fast or level 2 charging station ports to support the number of electric vehicles registered in the state. To support the anticipated number of registered EVs by 2030, hundreds more DC fast and Level 2 charging stations will need to be installed throughout Delaware. Charging stations have multiple benefits that make the investment worthwhile: installing charging stations can provide businesses and property owners a revenue source, can attract new customers, and can increase and retain tenants and employees.

The Program is part of Delaware's commitment to innovation in the transportation sector, reducing greenhouse gases, and improving Delaware's air quality. Between 2017 and 2021, the Electric Vehicle Charging Equipment Rebate Program invested almost $1.3 million in RGGI Proceeds. The program supports Delaware's Clean Vehicle Rebate Program, which has invested over $7 million of RGGI Proceeds, and resulted in 118,926 tons of lifetime avoided CO_2 emissions.

While it's difficult to measure tons of lifetime CO_2 emissions avoided from the installation of charging stations, Delaware has observed electric vehicle adoption increase rapidly in the northern section of the state and in the south of the state near the beaches.

Success Story: Supporting Electric Vehicle Charging in the City of Newark

The City of Newark received a Sustainable Communities Planning Grant from DNREC in 2017, which led to the development of the City's Sustainability Plan. The plan identifies the City's vision, goals, and implementation strategy to become a more sustainable community. Community engagement and surveying identified Clean Transportation as the highest priority for city residents. In response, Newark not only expanded bike and pedestrian access to support car-free lifestyles, but also aims to reduce its transportation greenhouse gas emissions by embracing the transition to clean transportation options for its own operations, its residents, and its businesses.



AN ELECTRIC FLEET VEHICLE FOR THE CITY OF NEWARK CHARGES AT CITY HALL USING A CHARGING STATION MADE POSSIBLE BY DELAWARE'S ELECTRIC VEHICLE CHARGING EQUIPMENT REBATE PROGRAM

With $21,000 provided through the DNREC Electric Vehicle Charging Equipment Rebate Program, Newark installed three dual-port electric vehicle charging stations. Two of the stations were installed at City Hall; one for public use and one for workplace charging. The third station was installed in a public parking lot on Newark's bustling Main Street. The stations have helped avoid 15,681 kg of greenhouse gas emissions since their implementation in 2021—the equivalent of planting 402 trees and letting them grow for 10 years. Jeffrey Martindale, Chief Purchasing Officer for the City of Newark, reported that the rebate program was a critical component for the city to move forward with installing chargers for public use:

"The installation of municipal EV charging stations in Newark allowed the city to simultaneously grow its electrified fleet while supporting electric vehicle expansion generally throughout the city. Each of our charging sites currently supports both fleet vehicles and public charging, allowing for a hybrid approach to EV charging accessibility in Newark. DNREC's electric vehicle charging equipment rebates made the installation of level 2 chargers in Newark much more financially feasible. With a plan in place to grow Newark's EV fleet and charging stations by 200% by the end of 2024, DNREC's support will again help streamline the process and get chargers in place quickly."

Resources

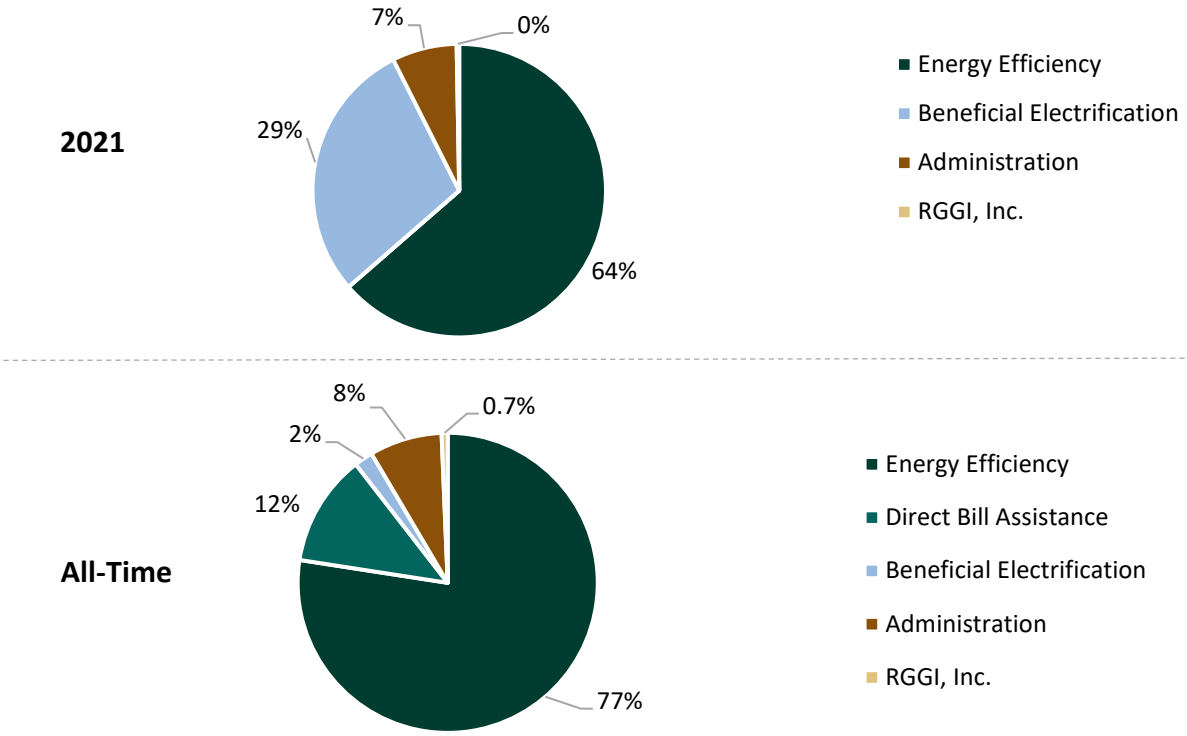
- Delaware Division of Climate, Coastal and Energy
- Delaware Clean Transportation Incentive Program

Maine

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. Efficiency Maine serves all sectors and all regions of the state. Its suite of nationally recognized programs provides consumer information, discounts, rebates, loans and investments for high-efficiency, clean energy equipment and strategies to manage energy demand. 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.

Chart 10: Maine RGGI Investments by Category



Maine received $131M in proceeds from FY08-FY21. RGGI investments represent $8.2M in FY21, and $118M cumulatively. $13M is committed to 2021 and future programs.

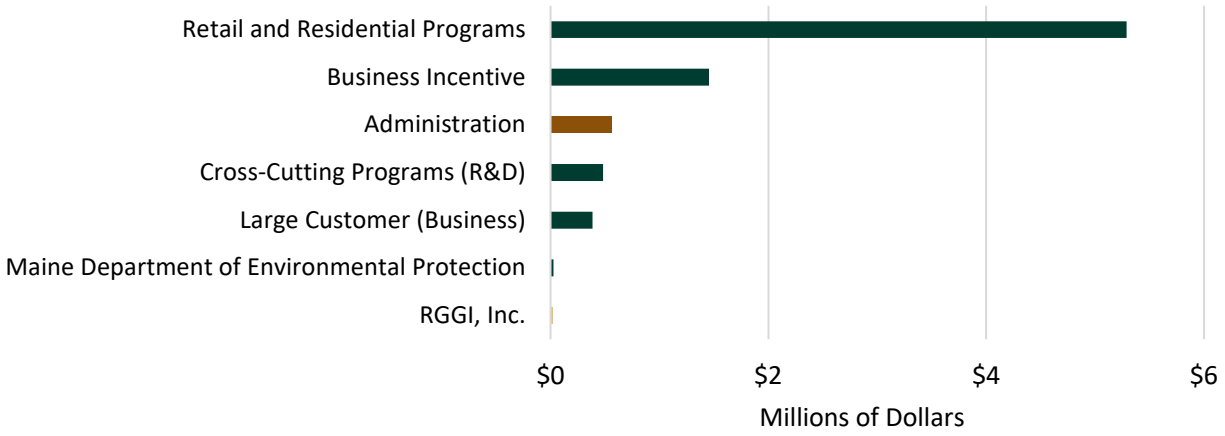
Efficiency Maine's programs are funded primarily by a combination of electric and natural gas system benefit charges, Forward Capacity Market proceeds, and RGGI proceeds. During its 2021 fiscal year (FY2021), Efficiency Maine invested over $8.2 million in RGGI proceeds, directing approximately 93% towards a combination of energy efficiency programs and beneficial electrification; the remaining 7% went towards general administration. Though nearly all of Efficiency Maine's programs leveraged RGGI funding to some degree in FY2021, the bulk of funds were invested through the following five programs:

- *Home Energy Savings Program reported under Retail and Residential Programs):* Drove market-based home weatherization and heat pump space heating by offering rebates and loans, providing customer education, and developing a vendor network.

- *Distributor Initiatives (reported under Retail and Residential Programs):* Rebated high efficiency boilers and furnaces to homes and businesses through the distributor channel
- *Small Business Initiative:* Rebated heat pump retrofits in small businesses
- *Commercial and Industrial (C&I) Prescriptive Program (reported under Business Incentive):* Provided fixed-price incentives for a prescriptive suite of "off-the-shelf" energy efficiency and beneficial electrification measures for C&I customers.
- *C&I Custom Program (reported under Large Customer (Business)):* 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 FY2021, Maine's RGGI-funded measures are estimated to generate savings of over 1.77 million MMBtu and 71,366 MWh in avoided consumption of electricity, natural gas and other heating or process fuels. These investments will avoid energy costs of more than $43 million.

Chart 11: 2021 Maine RGGI Investments by Recipient



Maine RGGI investments represent $8.2M in 2021.

Program Highlight: Heat Pump Incentives

FY2021 was a banner year for Efficiency Maine's heat pump incentive programs – the rate of heat pump installations across the state more than doubled, setting a new record for this high-efficiency, clean heating technology. By end of FY2021, Efficiency Maine reached a milestone of promoting nearly 88,000 high-performance heat pumps over the previous nine years.[2] This marked considerable progress in advancing Maine's statutory heat pump goals,[3] and firmly established the state's leadership in the national march towards beneficial electrification.

Efficiency Maine provided incentives on 27,326 heat pumps in FY2021, representing a 114% increase compared to FY2020. Several factors fed the increase in program participation, including larger rebates, more marketing, and the launch of a new training module for vendors designed to help drive heat pump activity and ensure quality installations in a fast-growing market. As the COVID-19 pandemic became more entrenched, other factors weighed in: many Mainers found themselves spending more time at home due to public health restrictions and sought better year-round comfort; the summer of 2020 (the beginning of FY2021) was the third warmest in the state's history;

[2] Efficiency Maine bases its count of units on a "heat pump equivalent" to accommodate the diversity of systems installed across the residential and commercial sectors. Efficiency Maine assumes that one "heat pump equivalent" is counted for every 25.1 MMBtu/year of heat provided. This metric is based on the modeled performance of a single residential heat pump with an Air Conditioning, Heating and Refrigeration Institute (AHRI)-rated Heating Seasonal Performance Factor (HSPF) between 10 and 12.5.

[3] Maine has two statutory goals relating to heat pumps: 1) installing 100,000 high-performance heat pumps between FY2020 and FY2025 [35-A MRS §10119(2)(A)(2)], and 2) by 2030, having at least 115,000 households in the State wholly heated by heat pumps and an additional 130,000 households in the State partially heated by heat pumps [35-A MRS §10104(4)(F)(7)]. The second goal was established by the Maine Climate Council in 2020 and codified in statute by the 130th Legislature in 2021.

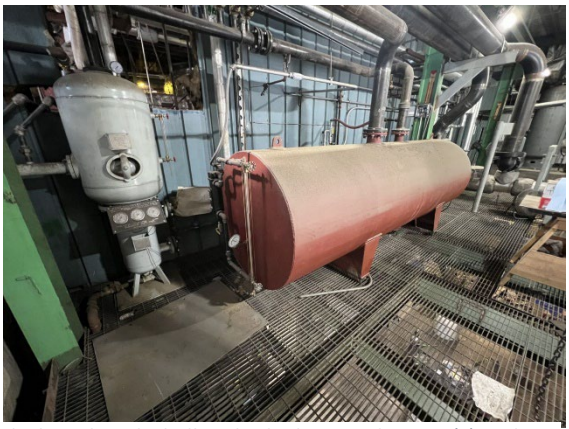
and many Mainers received stimulus money from the federal government that increased their disposable income. Together, these influences led to a significant jump in the move to heat pumps in Maine homes.

This market growth caught on in the non-residential sector too. By including new heat pump incentives for Small Businesses and expanding the promotion of Variable Refrigerant Flow (VRF) systems in the C&I Prescriptive Program, Efficiency Maine logged record-breaking distribution of heat pump technology, across geographic regions and sectors.

Efficiency Maine leveraged several funding streams across its heat pump incentive programs, including RGGI revenues. It deployed just over $1 million in RGGI funds to support all heat pump incentives for Small Business retrofit projects, and approximately $220,000 to fund all VRF retrofit incentives in the C&I Prescriptive Program. Efficiency Maine also used approximately $1.15 million in RGGI revenues to supplement other funding sources for retrofit heat pumps in the Home Energy Savings Program.

Success Story: Hancock Lumber

Hancock Lumber is a longstanding Maine-based business operating three sawmills across the state. In 2021, the company was planning to add two drying kilns to the Bethel sawmill operation – an expansion that required upgrading the capacity of the existing biomass-fueled boiler plant. The biomass boiler project proposal included two optional energy efficiency upgrades intended to recover thermal energy and reduce fuel consumption.



Flash tank with shell and tube heat exchanger (L) and condensate reservoir (R)

The first optional feature was a blowdown energy recovery system comprised of a flash tank and a shell and tube heat exchanger. The flash tank captures the flash steam that results from reducing the pressure of the blowdown water, and reintroduces it to the system. The remaining hot blowdown water drains from the flash tank to the heat exchanger where heat is transferred to cold boiler make-up water.

The second optional feature was a new 1,200-gallon “hot well,” or condensate reservoir, to provide additional surge capacity and eliminate the overflow of condensate associated with surges in steam demand that occur with frequent kiln start-up cycles. This reduces the loss of valuable high-temperature condensate and the need for makeup water.

By offering a financial incentive to defray the upfront cost of these upgrades, Efficiency Maine was able to encourage Hancock Lumber to opt for the energy-efficient options. The incentive reduced the return on investment from 8.7 years to 4.4 years.

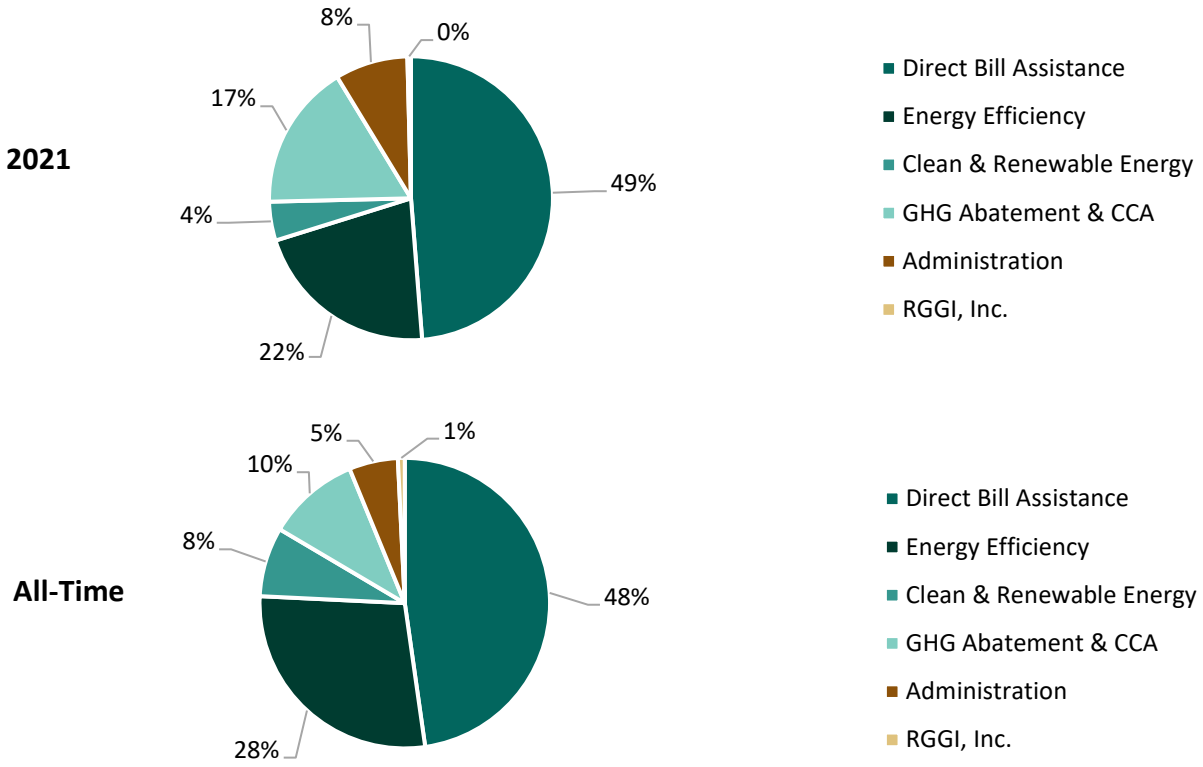
Given the relatively complex, site-specific nature of the project, Hancock Lumber worked with Efficiency Maine’s C&I Custom Program. The program was able to validate the predicted energy impacts and offer a $34,000 incentive, funded entirely with RGGI dollars. These investments save Hancock Lumber approximately 1,629 MMBtu of biomass annually, reducing the company’s operating costs for years to come.

Maryland

Maryland allocates proceeds from the sale of CO_2 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.

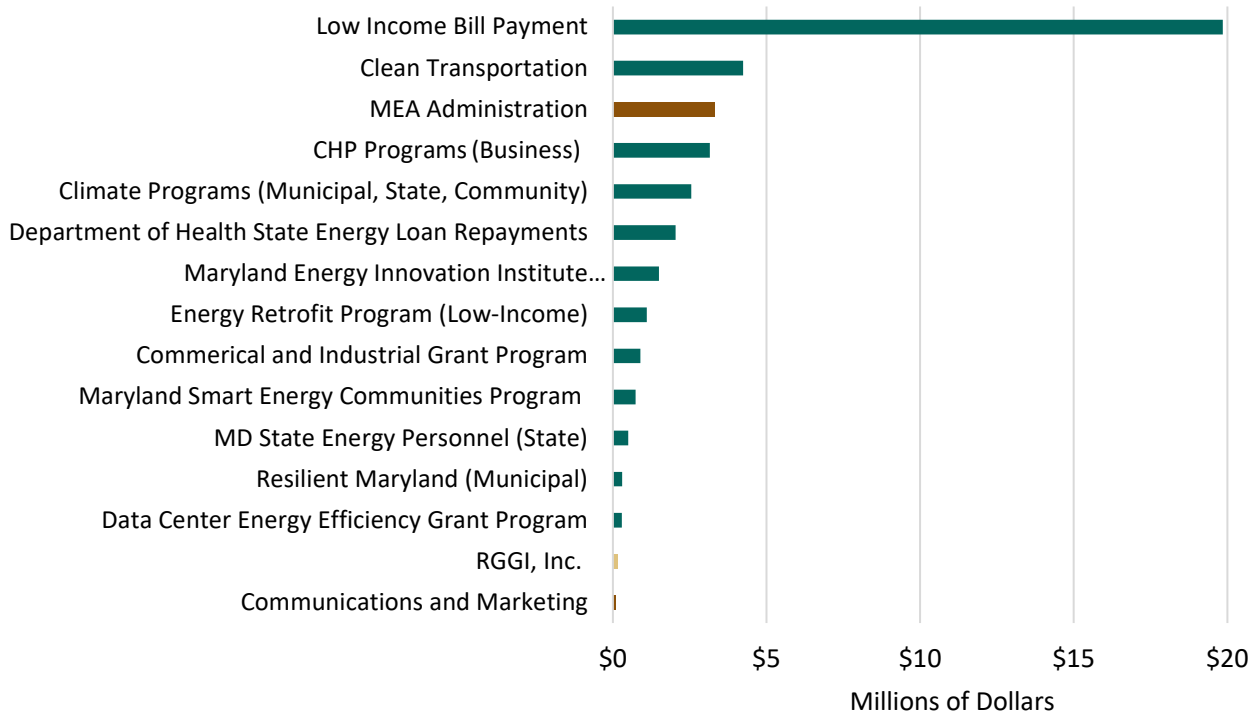
These programs are intended to reduce energy bills, create jobs in growing industries, help reduce greenhouse gas emissions, increase resiliency, and promote energy independence.

Chart 12: Maryland RGGI Investments by Category



Maryland received $815M in proceeds from 2008-2021. RGGI investments represent $40M in 2021, and $751M cumulatively. $63M is committed to 2022 and future investments.

Chart 13: 2021 Maryland RGGI Investments by Recipient



Maryland RGGI investments represent $41M in 2021.

Success Story: Green & Healthy Homes Initiative Case Study

The Green & Healthy Homes Initiative, Inc. (GHHI), is a national non-profit organization committed to addressing the social determinants of health and the advancement of racial and health equity through the creation of healthy, safe and energy efficient housing. GHHI Baltimore, the original GHHI site, commenced housing intervention services in 1997 and since has been providing low-income families with the opportunity to have a healthy, safe, and efficient home, delivering both economic and social benefits to individuals and communities in need. Working with the Maryland Energy Administration's Low-to-Moderate Income Grant Program (MEA LMI) from 2009-2020, GHHI's Baltimore location has integrated energy efficiency upgrades into their "healthy housing interventions" to more than 535 MEA-funded homes throughout Baltimore City and Baltimore County.

For GHHI, investing in energy efficiency, weatherization, and health and safety measures provides a long-term and equitable solution to the energy insecurity facing so many American families. The GHHI integrated model links energy and health to take a comprehensive approach to identify and remediate environmental health hazards (e.g., lead-based paint, radon, asthma triggers, injury risks, volatile organic compounds, and others) providing a better place to live for low-income residents and reducing client deferral rates for weatherization programs. As a part of the comprehensive approach and using MEA funding along with other sources of funding, the GHHI "housing interventions" deliver energy upgrades that lower utility bills and improve home performance and comfort, while also providing health upgrades through indoor air quality

improvements and other hazard reduction interventions that help reduce asthma episodes and prevent lead poisoning and household injury.

Under two MEA grant awards, GHHI conducted energy audits, provided weatherization and energy efficient upgrades, as well as health and safety measures to over households in Baltimore County and Baltimore City. The MEA LMI Program funds have enhanced funding from other sources by providing energy audits, weatherization services, and installing cost effective energy efficient upgrades to appliances, HVAC, and lighting, enabling them to expand the energy and health benefits of their comprehensive building upgrades. Across the two grants, the completed energy efficiency measures included:

- Duct and air sealing, as well as attic, roof, and wall insulation to improve the building envelope;
- Installation of LED light bulbs and low flow showerheads and faucets;
- Replacement of dated and inefficient HVAC equipment with high-efficiency condensing furnaces, air source heat pumps, and central air conditioners;
- And high-efficiency gas water heaters and hot water pipe insulation.

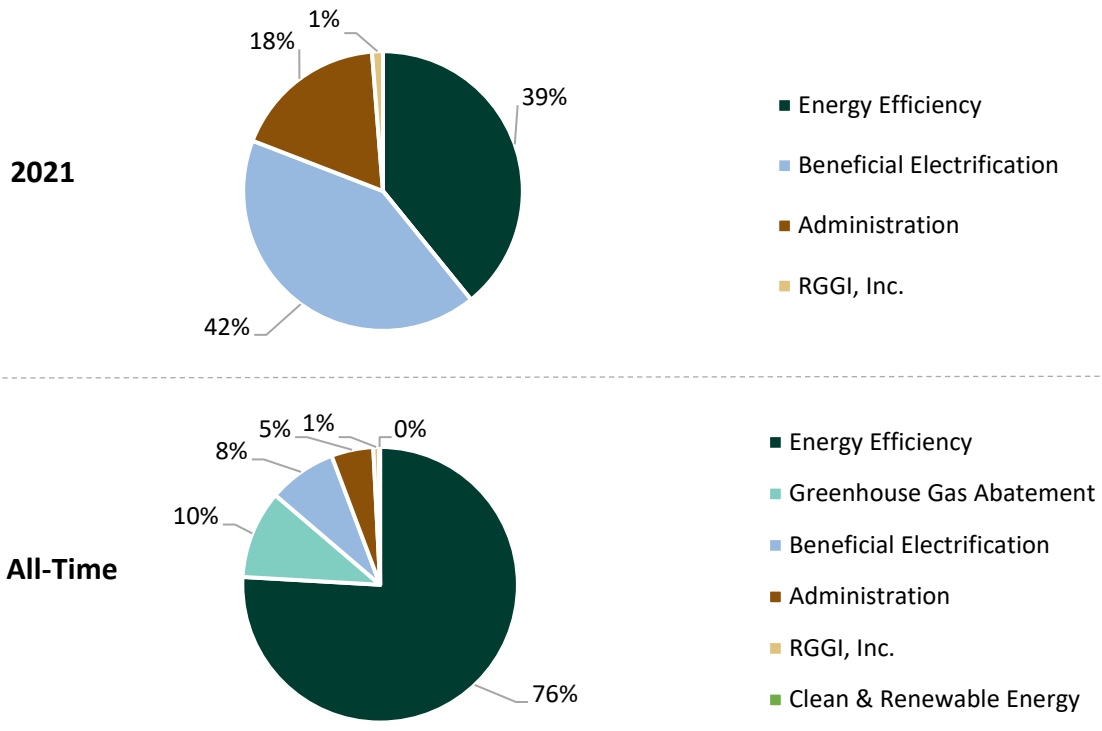
The 2019-2020 GHHI grant awards funded by the MEA LMI Program are helping to provide healthier, safer, and more efficient homes.

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.[4] 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.[5]

The Commonwealth has some of the nation's most stringent emissions standards for light-duty vehicles. Those standards have helped to dramatically slow the growth of transportation emissions despite a steady increase in vehicle miles traveled consistent with a 14% increase in population since 1990[1]. Persuading new vehicle buyers to purchase an 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. As of 2021, the MA MOR-EV program highlight below has had a cumulative GHG savings of 11,455 metric tons.

Chart 14: Massachusetts RGGI Investments by Category



Massachusetts received $712M in proceeds from 2008-2021. RGGI investments represent $30M in 2021, and $576.5M cumulatively. $135.5M is committed to 2021 and future programs.

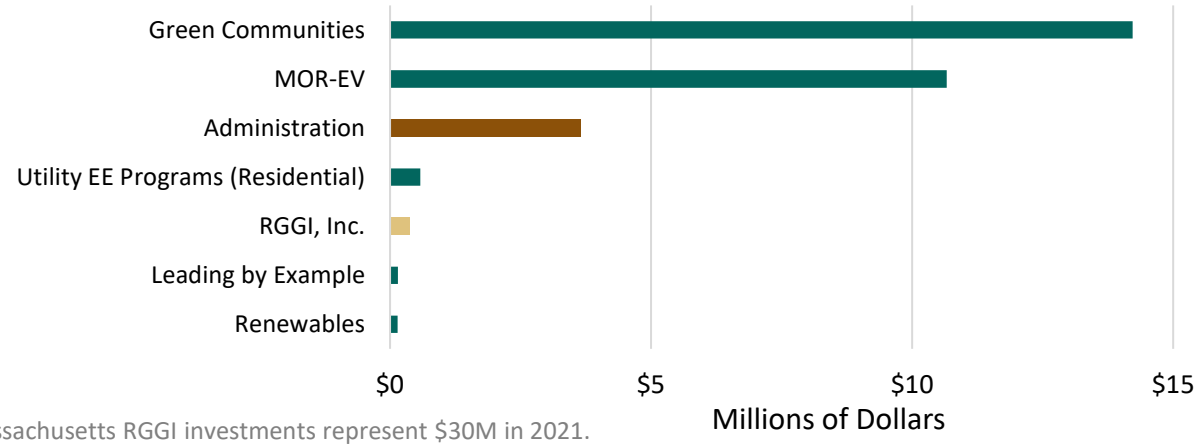
[4] An Act Establishing the Global Warming Solutions Act. Chapter 298 of the Acts of 2008, and as codified at M.G.L. c. 21N (Chapter 21N). Available at: https://malegislature.gov/laws/sessionlaws/acts/2008/chapter298

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

[1] GHG Emissions and Mitigation Policies | Mass.gov

In 2021, the Green Communities Division awarded over $7 million in competitive grant funding to 59 Massachusetts communities. These competitive grants funded 309 projects that are anticipated to reduce over 700,000 MMBTU of energy and 57,000 tons of greenhouse gas emissions over the lifetime of the projects. The Green Communities Division began awarding competitive grant projects twice per year in 2021 instead of once per year. Due to this change, grants are roughly half of what the awards were in 2020 and 2022 because of the timing of the awards.

Chart 15: 2021 Massachusetts RGGI Investments by Recipient



Massachusetts RGGI investments represent $30M in 2021.

Program Highlight: MOR-EV Program

Launched in 2014, *Massachusetts Offers Rebates for Electric Vehicles* (MOR-EV) is an education and rebate program funded by the Executive Office of Energy and Environmental Affairs (EEA) and Department of Energy Resources (DOER) and 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 making ZEVs more affordable and encouraging buyers to purchase an EV rather than a traditional gasoline-powered vehicle.

In 2021, MOR-EV offered rebates of up to $2,500 per electric vehicle and continued to educate consumers and dealers about ZEV rebates and benefits. In 2021, nearly 5,000 rebates were issued. MOR-EV supports the state'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 greenhouse gas (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

From its inception in 2014, the program has gone through several iterations, with an eye for changes toward improvement. In 2021, a new segment of the MOR-EV program was launched known as MOR-EV Trucks. The MOR-EV Trucks Program is designed to reduce air pollution emissions in Massachusetts by increasing the use of medium duty/heavy duty on-road electric vehicles, including trucks, buses and vans. It offers rebates for public and private purchases or leasing of qualified new vehicles registered in the Commonwealth and maintained for at least 48 months. Rebates apply to both individual vehicles and fleet acquisitions. Purchases or leases made on or after February 16, 2021 are eligible.

The MOR-EV Trucks program is strictly for the purchase or lease of battery electric and fuel-cell electric on-road vehicles with a sales price of more than fifty thousand dollars ($50,000), a gross vehicle weight rating (GVWR) of more than 8,500 pounds, and purchased or leased on or after February 16, 2021 (eligible vehicles). In addition:

- Rebates and vouchers are available to both public and private (personal and commercial) purchases
- MOR-EV Trucks Program incentive recipients must retain ownership of the vehicle(s) incentivized for a minimum of 48 consecutive months immediately after the vehicle(s) purchase or lease date
- If a vehicle is leased, lease terms of at least 48 months are required for program eligibility
- Resale of a MOR-EV Trucks Program vehicle for financial gain within 48 months is prohibited

An additional 10% may be added to the currently available incentive block value for vehicles above 14,000 pounds GVWR if the vehicle is registered in or will operate more than 50% of the time within census block groups that meet the Commonwealth's Environmental Justice Income Criteria.

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. Future iterations of the program will consider equity issues beyond what could have been accounted for at program inception. New iterations will include low-income adders, used vehicles, trade ins and a point-of-sale design option to help decrease the upfront costs of an EV purchase.

Success Story: Green Communities

The Massachusetts Department of Energy Resources' Green Communities Division provides grants, technical assistance and local support to help municipalities reduce their energy use by implementing clean energy projects in municipal buildings, facilities and schools. The Green Communities Division serves all 351 Massachusetts cities and towns and helps them find clean energy solutions that reduce long-term energy costs and strengthen local economies.

In 2021, the Town of Rehoboth was designated a Green Community by the Massachusetts Department of Energy Resources (DOER) and was awarded a $147,462 designation grant. The Town applied the funds toward three energy efficiency projects at municipal buildings.

Project #1: Heat Pump Conversion (Highway Department): The Highway Department facility serves as a garage for the Town of Rehoboth's Department of Public Works. The finished, single-story office space on the west side of the building's main heating system was converted from oil to an electric heat pump system. The system was sized to handle the full heating load for the office area though the existing heating system will remain in place as an emergency back-up. The new heat pump will increase the facility's electricity use by 10,500 kilowatt-hours (kwh) but it will decrease the heating oil use by 1,298 gallons – resulting in a net energy savings of 145 MMBtus and net greenhouse gas emissions (GHGs) reduction of 11 tons.

Project #2: LED Lighting and Controls Improvements (Various Municipal Buildings): Four municipal buildings received high efficiency LED lighting and lighting controls upgrades to replace existing fluorescent lighting at the Rehoboth Town Hall, Town Library, Highway Department, and Public Safety Building. Overall, the lighting projects will save 76,372 kwh of electricity per year.

Project #3: Weatherization Improvements (Library): Building envelope improvements were carried out at the Town's Library to reduce heat loss, thereby reducing energy consumption. Interior storm window inserts were installed in the library's single pane windows with weather stripping gaskets to create a seal for insulating air. The gaskets compress around the frame creating a sealed pocket for insulating air. These weatherization improvements are estimated to save 1,609 gallons of oil and 1,078 kwh of electricity per year.

Overall, the Town's designation projects will save an estimated $21,000 per year. These projects are also expected to annually save about 633 MMBtu of energy, or 5% of the Town's municipal energy use, and 57 tons of GHGs, or 6.5% of the Town's annual municipal GHGs.

Resources

- MOR-EV: https://mor-ev.org/
- MOR-EV Trucks: https://mor-ev.org/mor-ev-trucks
- Green Communities: https://www.mass.gov/orgs/green-communities-division

New Hampshire

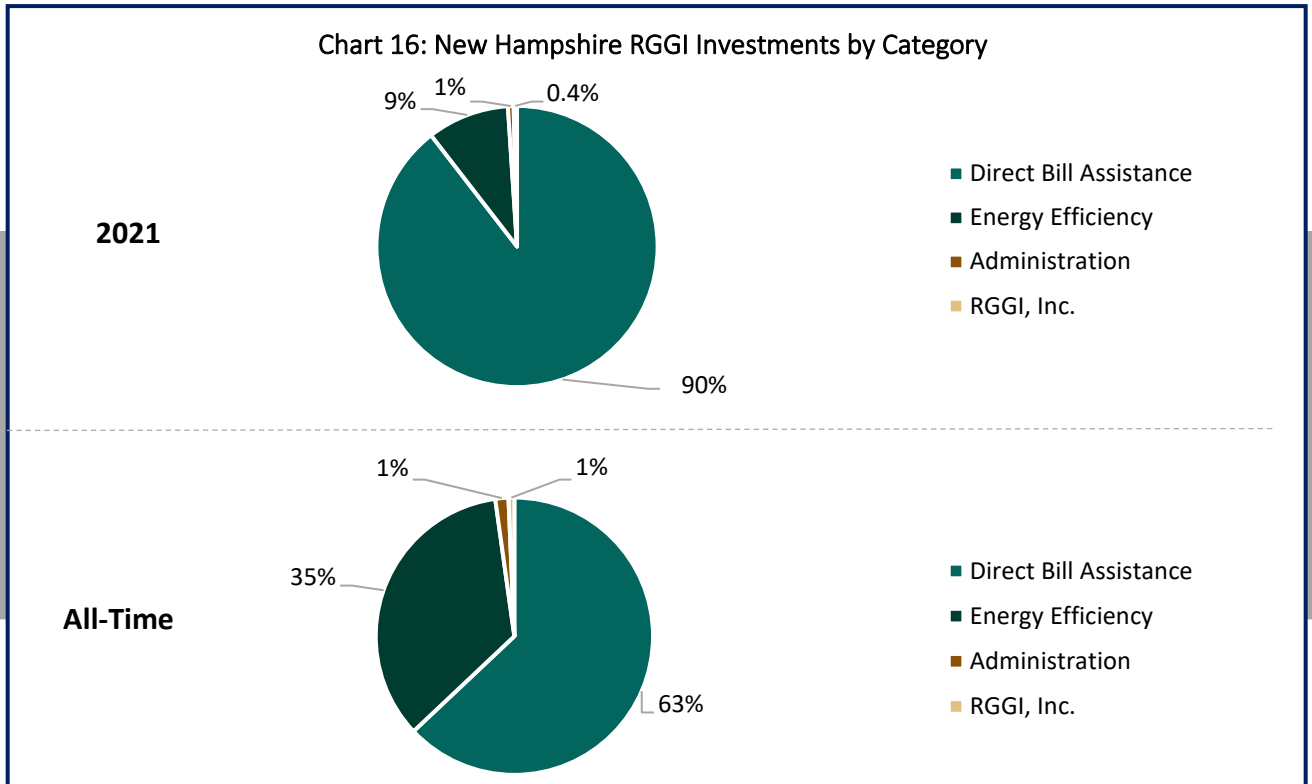
New Hampshire invests RGGI allowance proceeds in a variety of programs that reduce energy use in municipal and retail buildings, commercial and industrial facilities, and low-income households. RGGI allowance proceeds also provide direct bill assistance to reduce electric bills.

In 2021, New Hampshire received approximately $33 million in RGGI allowance proceeds, of which approximately $2.6 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 from all ratepayers through the System Benefits Charge. Approximately $29.6 million was used to provide direct bill assistance to New Hampshire electric consumers, $0.5 million was allocated to an energy efficiency program focusing on moderate-income households, and the remaining RGGI auction proceeds of approximately $0.2 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 2021, EEF funds were used to accomplish the following:

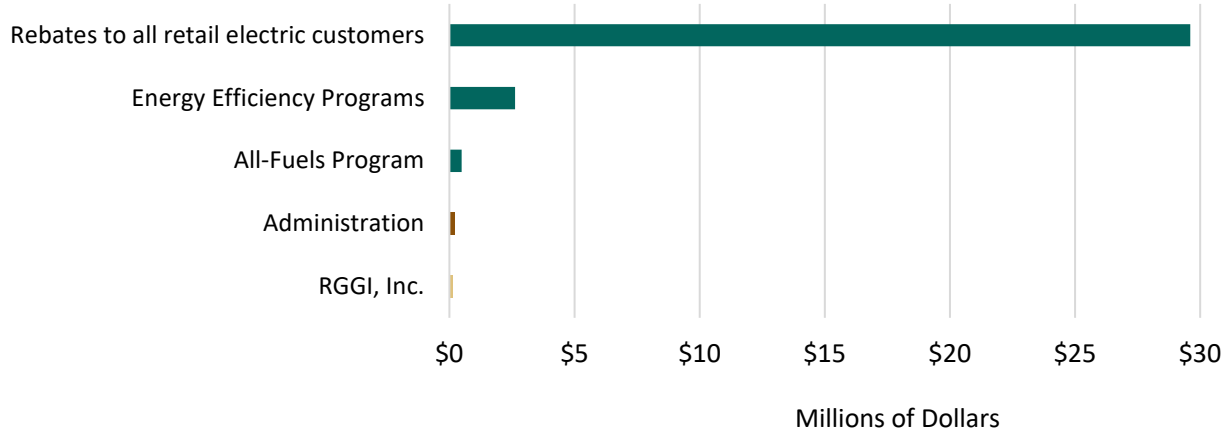
- Installed energy efficiency measures in 144 municipal buildings;
- Weatherized and/or provided weatherization self-install "kits" to 107 income-eligible homes; and
- Worked closely with Community Action Agencies to develop moderate-income program details, outreach methods, and to identify eligible households for targeted outreach.

Chart 16: New Hampshire RGGI Investments by Category



New Hampshire received $209M in proceeds from 2008-2021. RGGI investments represent $33M in 2021, and $187M cumulatively.

Chart 17: 2021 New Hampshire RGGI Investments by Recipient



New Hampshire RGGI investments represent $33M in 2021.

Program Highlight: Efficiency Programs

For the measures installed in 2021, the Home Energy Assistance and Municipal programs will save approximately 51,666 megawatt-hours (MWh) of electricity and 127,540 million British Thermal Units (MMBTU) over the expected life of the energy efficient equipment improvements. Associated bill savings over the lifetime of these improvements is estimated to be $11 million.

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. In 2019, the program received a total of $690 thousand of RGGI funding over an initial three-year period. The All-Fuels program experienced implementation challenges during 2021 due to pandemic related factors. The program has been extended through 2022 and anticipates improved customer interest and project delivery and completion.

Success Story: Russell Elementary School

A major renovation and addition to the Russell Elementary School in Rumney, New Hampshire presented an ideal opportunity for energy efficiency upgrades through the RGGI funded NHSaves Municipal Program and partner utility New Hampshire Electric Cooperative (“NHEC”). The project, which included demolition of a 1957 building wing, addition of 14,306 square feet of new space, and renovation of 20,200 square feet of existing space, provided upgrades, safety and security features bringing the original 1957 school up to current educational standards with a modernized layout and added insulation and numerous other efficient features for enhanced building comfort.

NHEC worked with the project architects and contractors to include multiple energy efficiency measures in the project. Efficiency measures included heating and ventilation system upgrades and variable frequency drives, LED lighting retrofit and controls, air source heat pumps, and high efficiency water heating. In total, NHEC provided over $21,000 in RGGI funded incentives. The measures will save 563 gallons of propane and 45,000 kWh per year and provide over 16kW in peak demand reduction.

Additional improvements include a natural grassy area and the planting of seven maple trees in the area that the demolished 1957 portion used to reside, repaving and sidewalk work including construction of wheelchair ramps, improved building envelope, eco-friendly materials, increased daylighting in classrooms, low flow plumbing and building envelope design to meet specified air infiltration levels.

This project provides an excellent example of how energy efficiency can be integrated into projects that meet a variety of community needs, ensuring reductions of energy use, carbon emissions and energy bills for many years to come.

Resources:

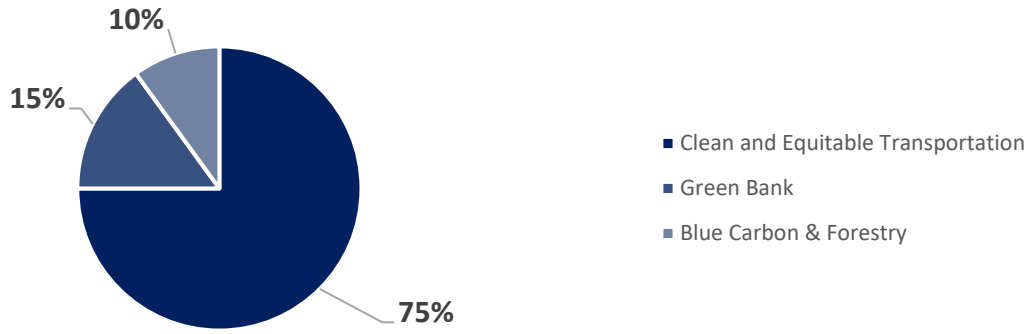
- Energy Efficiency Program Regulatory Webpage
- 2020 Systems Benefit Charge Report to New Hampshire Legislature inc. RGGI Grant Program
- Report to New Hampshire Legislature on 2020 RGGI Program

New Jersey

New Jersey's 2021 RGGI investments are guided by its triannual Strategic Funding Plan *RGGI Strategic Funding Plan: Years 2020 through 2022*. This plan directs the investment of the state's auction proceeds for its first three years of participation in RGGI, ensuring cross-agency coordination for maximum collective impact.

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 2020-2022 Plan primarily invests proceeds towards programs dedicated to clean transportation (75%), deployment of a New Jersey Green Bank (15%) and carbon sequestration projects (10%). New Jersey joined RGGI in 2020 and is still actively establishing programs and internal mechanisms to facilitate the disbursement of auction proceeds that complement the state's emissions reductions, clean energy, and environmental justice priorities.

Chart 18: New Jersey RGGI Investments by Category



During 2021, New Jersey invested RGGI Auction Proceeds in standing up the following programs:

New Jersey Zero-Emissions Incentive Pilot Program

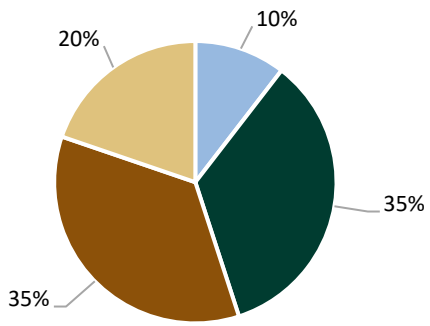
The New Jersey Zero-Emissions Incentive Program (NJ ZIP) is a voucher pilot launched by the New Jersey Economic Development Authority. The goal of the program is to accelerate the adoption and use of zero-emission medium and heavy-duty vehicles within New Jersey while reducing emissions within the state. NJ ZIP supports the growth of the NJ zero-emission vehicle ecosystem, with accelerated adoption of zero-emission vehicles being the first step to attracting more jobs and investment, as other zero-emission vehicle programs and regulations roll out across multiple state agencies.

New Jersey Green Fund

The Economic Development Authority contracted with the Coalition for Green Capital, a nonprofit organization, to provide consulting services to support the design of a statewide green financing mechanism called the New Jersey Green Fund. Through this effort the Green Fund will be structured to accelerate the growth of an equitable clean energy economy in the Garden State. Similar to green banks across the country, the Green Fund will specifically work on projects that are cost effective and leverage private capital. This approach helps ensure that private financing markets for similar projects will develop over time.

Chart 19: New Jersey RGGI Investments by Category

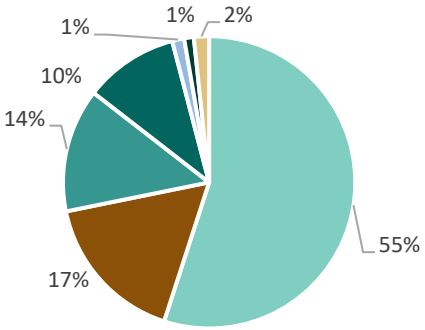
2021



- Beneficial Electrification
- Energy Efficiency
- Administration
- RGGI, Inc.

Note: In 2021, New Jersey invested only ~1% of total proceeds as it began to stand up new programs. As a result, the proportions shown will change significantly as more proceeds go directly to program achievement in future years.

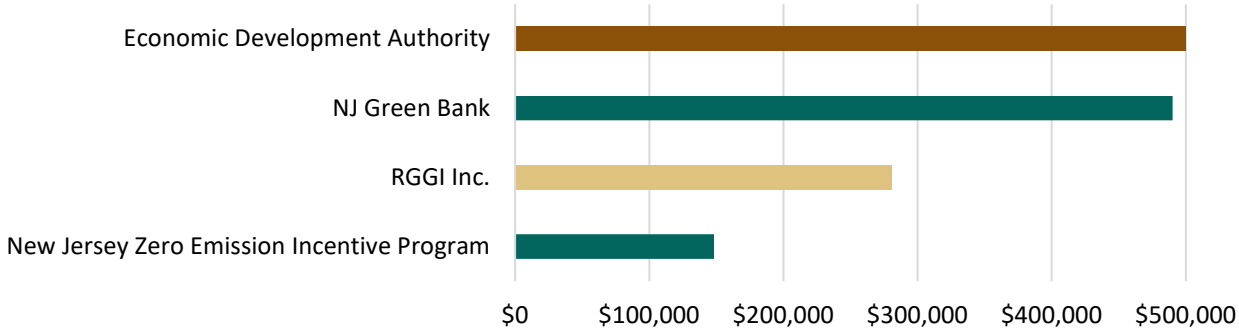
All-Time



- GHG Abatement
- Administration
- Clean & Renewable Energy
- Direct Bill Assistance
- Beneficial Electrification
- Energy Efficiency
- RGGI, Inc.

New Jersey received $120M in proceeds in 2021. RGGI investments represent $1.4M in 2021 and $46M cumulatively. New Jersey was an early participant in RGGI before withdrawing in 2012, and then resuming participation in 2020. First control period (2008-2012) proceeds investments total $43.6 million, which are reflected in the cumulative investments chart.

Chart 20: 2021 New Jersey RGGI Investments by Recipient



New Jersey RGGI investments represent $1.4M in 2021.

Program Highlight: Launch of the New Jersey Zero-Emission Incentive Program

In April 2021, the New Jersey Economic Development Authority, launched the New Jersey Zero-Emission Incentive Program (NJ ZIP). NJ ZIP is a pilot 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.

Building upon the momentum of the NJ ZIP's initial success, in September 2021, the Economic Development Authority broadened the access to NJ ZIP beyond the greater Newark and Camden area to include overburdened communities in the greater New Brunswick area. In November 2021, the program expanded again, with additional $20,585,000 in funding, to include the greater shore area.

Resources:

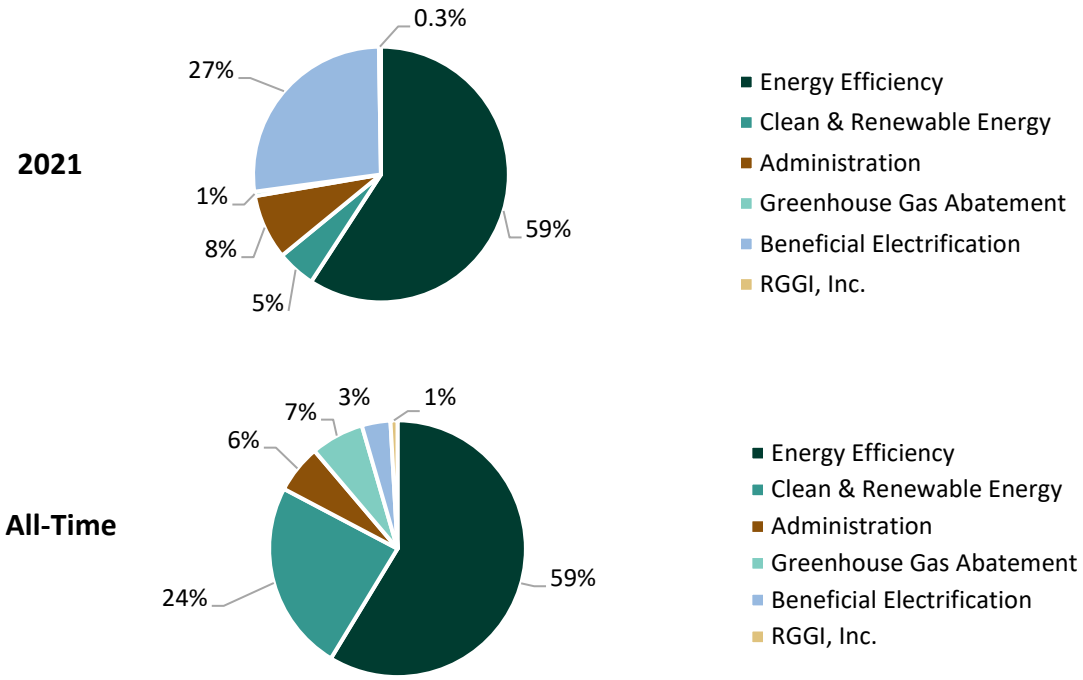
- New Jersey Zero Emission Incentive Program
- NJEDA Expands NJ Zip Voucher Program
    - EDA's Press Release

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 polices 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.

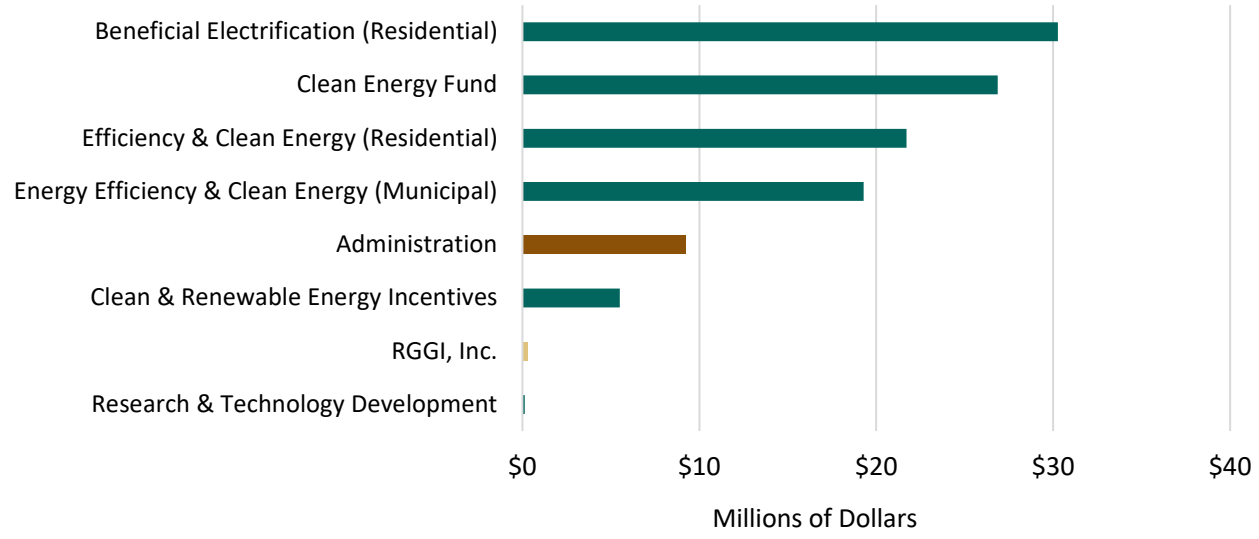
Proceeds generated through RGGI auctions allow New York to pursue opportunities for clean energy, energy efficiency, and carbon reduction that other state activities are not currently designed to reach. The demand for RGGI-supported programs underscores New Yorkers' desire for clean energy opportunities.

Chart 21: New York RGGI Investments by Category



New York received $1.6B in proceeds from 2008-2021. RGGI Investments represent $112.5M in 2021, and $1.4B cumulatively. $198M is committed to 2022 and future programs.

Chart 22: 2021 New York RGGI Investments by Recipient



New York RGGI investments represent $112.5M in 2021.

Program Highlight: Climate Justice Fellowship Program

In September 2021 Governor Hochul announced $6 million, partly funded by RGGI, available over three years to support 150 Climate Justice Fellowship opportunities for individuals across the state currently residing in historically disadvantaged communities or from priority populations.

The program is seeking applications from host employers to support the professional development, training, and mentoring of full-time fellows currently residing in disadvantaged communities or from priority populations—including individuals that are low income, disabled, homeless, formerly incarcerated, residents of environmental justice communities, veterans and Native Americans, among others.

Selected fellows will work with community-based organizations, universities, municipalities, climate tech innovators/start-ups, and clean energy businesses to assist with and support community engagement activities, clean energy project development and implementation, partnership building, clean energy start-ups, or other projects that advance climate justice and clean energy priorities in disadvantaged communities.

Success Story: Charge NY/ EV Rebate

The Charge NY program began in 2017 to promote the adoption of plug-in electric vehicles (PEVs) through three activities. First, NYSERDA developed and implemented a rebate program for PEVs accelerating purchases of PEVs by reducing higher upfront costs. Second, NYSERDA invests in marketing and awareness-building activities to build interest in PEVs among the public. A focus on building greater public knowledge and awareness of the capabilities of PEVs is essential to spur more private investment in PEV purchases and PEV charging stations. Third, NYSERDA supports the installation of PEV charging stations at workplaces and multifamily buildings—location types that have been seen to be effective motivation for PEV adoption, based on usage data reported from previous installations.

Since the program's inception, NYSERDA has awarded over 54,000 rebates, with over 30,000 funded by RGGI proceeds. This RGGI funding for this program has led to a reduction of over 12.6 million gallons of gasoline; nearly 77,000 metrics tons of CO_2 equivalent saved. Furthermore, the program has supported the installation of over 3,600 EV charging ports.

The year 2021 set program records with over 19,000 RGGI-funded rebates awarded, an increase of over 6,000 rebates issued from the previous year. As other funding sources have closed for Charge NY, RGGI will be the sole provider for these rebates in the NYS. To build on and continue the success of this program in future years, Governor Hochul announced an additional $35 million in RGGI funding to further support PEV adoption through the Charge NY program.

Resources:

- Climate Justice Fellowship - NYSERDA
- RGGI Planning Documents - NYSERDA
- RGGI Status Reports - NYSERDA

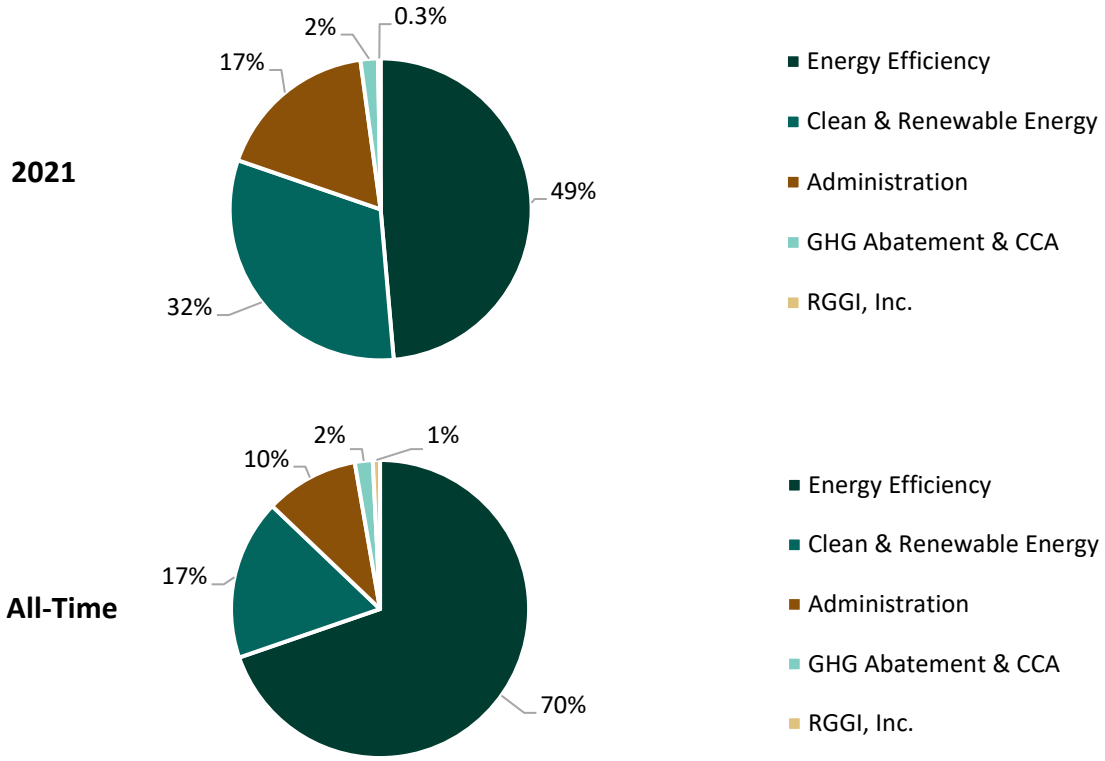
Rhode Island

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 2021, Rhode Island RGGI proceeds were allocated to support several important clean energy programs, including:

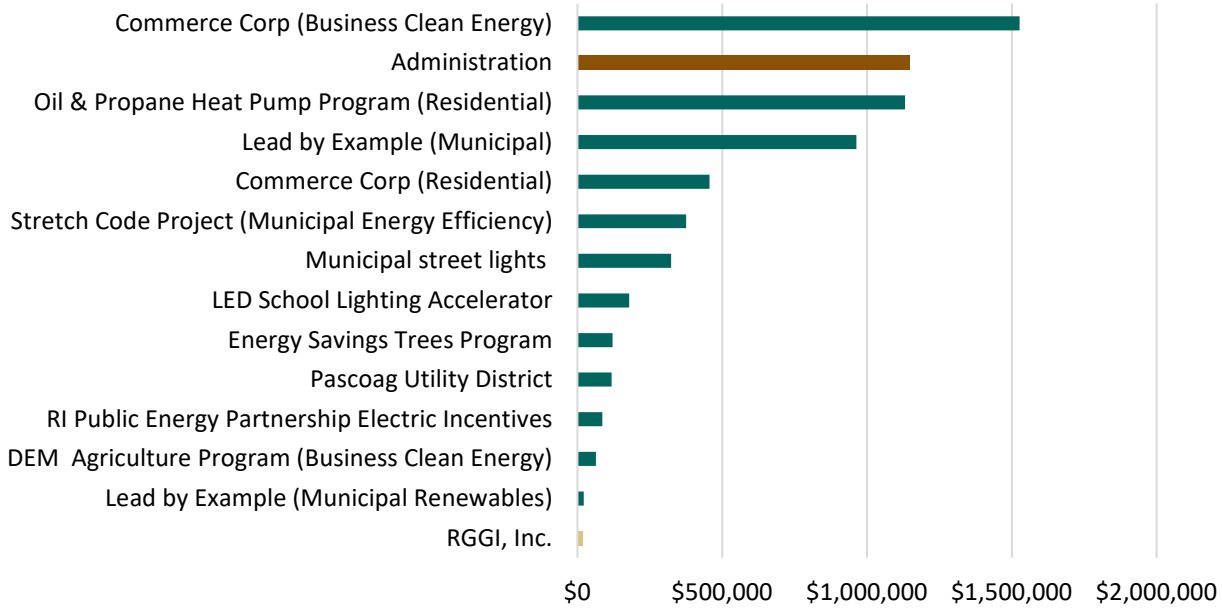
- Providing enhanced financial incentives to support Rhode Island municipalities with the conversion of local streetlights to high-efficiency LED technologies;
- Continued support for the Rhode Island Department of Environmental Management's Energy-Savings Trees program, which distributes trees to homeowners 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 renewable development on Brownfields through Rhode Island Commerce Corporation's Renewable Energy Fund; and
- Furthering solar PV adoption by Rhode Island homeowners and small businesses through continued support of the state's Renewable Energy Fund.

Chart 23: Rhode Island RGGI Investments by Category



Rhode Island received $100.4M in proceeds from 2008-2021. RGGI Investments represent $6.5M in 2021, and $62.2M cumulatively. $38.2M is committed to 2022 and future programs.

Chart 24: 2021 Rhode Island RGGI Investments by Recipient



Rhode Island RGGI investments represent $6.5M in 2021.

Program Highlight: Lead by Example

In 2015, the Governor issued Executive Order 15-17, which directs state agencies, cities and towns, quasi-public agencies, and state colleges and universities to “Lead by Example” by becoming more energy efficient and sourcing more of their power through renewable energy technologies.

Success Story: Central Falls Calcutt Middle School replaces aging fluorescent lights with new LEDs at zero cost

At 1.29 square miles, with over 22,500 people, Central Falls is the smallest, most densely populated city in Rhode Island. It is also the only majority Hispanic community in the state. In 2021, the city unveiled its new brand and slogan, “Diversity That Inspires,” recognizing its rich cultural heritage.

Built in 1976, the Central Falls Calcutt Middle School, serves over 700 students in grades 5-8. The school was using older fluorescent lights and was overdue for an upgrade to newer LED smart lights.

Calcutt Middle School took advantage of a brand-new State program called the School LED Lighting Accelerator, which provides lighting, and other energy upgrades, free of charge to schools. In total, the school replaced 1,032 light fixtures in classrooms, hallways, the cafeteria, library, gym and other areas.

Lighting is critically important, not just for energy cost savings, but also for safety and the quality of the learning environment for students and teachers. Better lighting makes it easier to concentrate and improves mood and motivation. Furthermore, the LEDs each come with sensors to adjust to the changing natural light conditions throughout the day, dimming when there is adequate sunlight and automatically brightening when the sun is hidden.

By participating in the School LED Lighting Accelerator program, Calcutt Middle School received $282,513 ($198,828 from the Office of Energy Resources and $83,685 from National Grid) worth of lighting upgrades at zero cost to the school.

As a result, the school is expected to lower its energy use by 129,119 kWh per year which is equal to $21,304 in saved energy costs per year. Additionally, the new lights will also save the school $14,378 in maintenance costs, resulting in a combined estimated annual savings of $35,682.

“We are thrilled with the School LED Lighting Accelerator program. The application was easy and we received expert technical support from the Office of Energy Resources. I would highly recommend this to any school that needs a lighting upgrade and instant energy savings," said Rory Marty, Director of Operations & Safety, Central Falls School Dept.

This project was funded with RGGI Proceeds. For more information about the School LED Lighting Accelerator program, please contact George Sfinarolakis (george.sfinarolakis@energy.ri.gov) or Nathan Cleveland (nathan.cleveland@energy.ri.gov) of the R.I. Office of Energy Resources.

Resources:

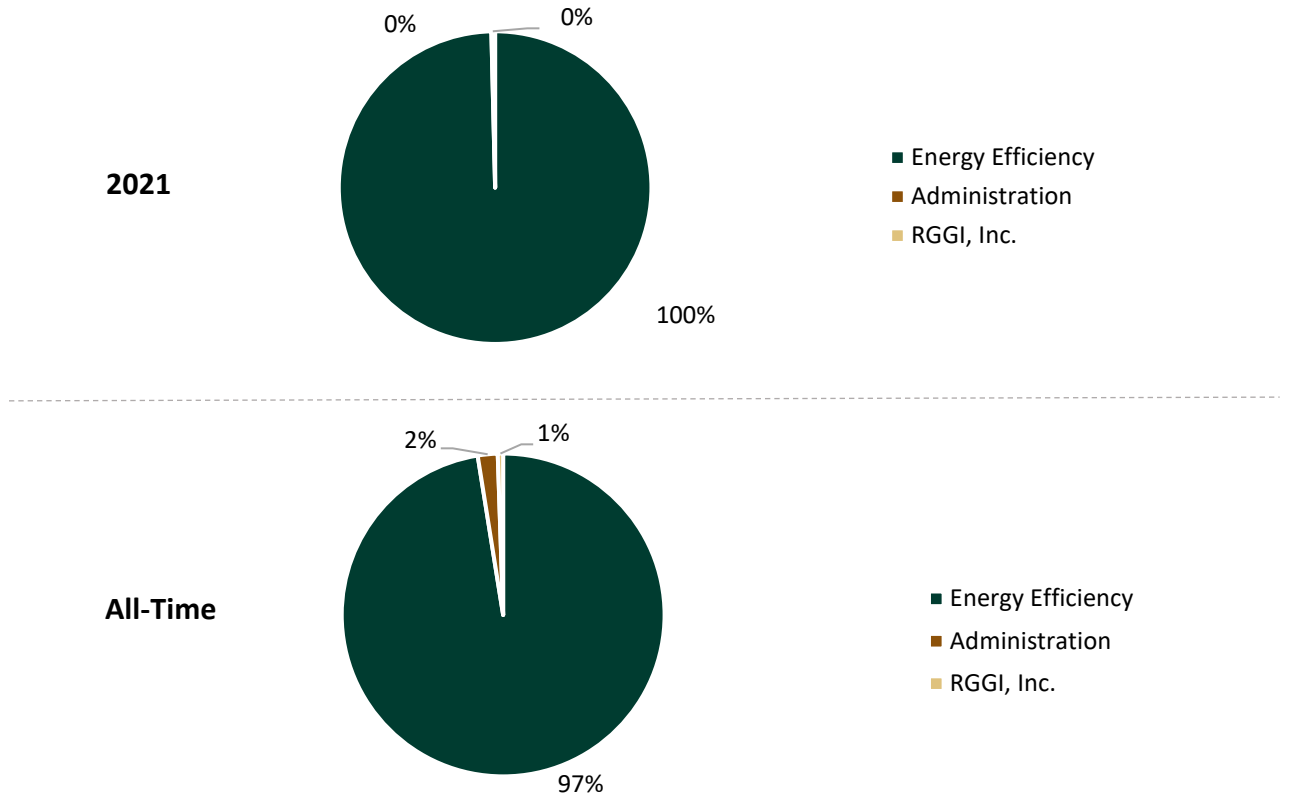
- Central Falls Calcutt Middle School replaces aging fluorescent lights with new LEDs at zero cost (rienergy.blogspot.com)
- Regional Greenhouse Gas Initiative (RGGI) | Rhode Island Office of Energy Resources (ri.gov)

Vermont

Vermont invests the majority of its CO_2 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 2021 are estimated to result in lifetime energy savings of 5,390,258 MMBtu. These programs are estimated to avoid the emission of 319,833 short tons of CO_2, and to save participants $124,323,932 on their energy bills over the lifetime of those investments. Vermont's RGGI-funded programs have served approximately 13,818 households and 752 businesses. Programs currently supported by CO_2 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.

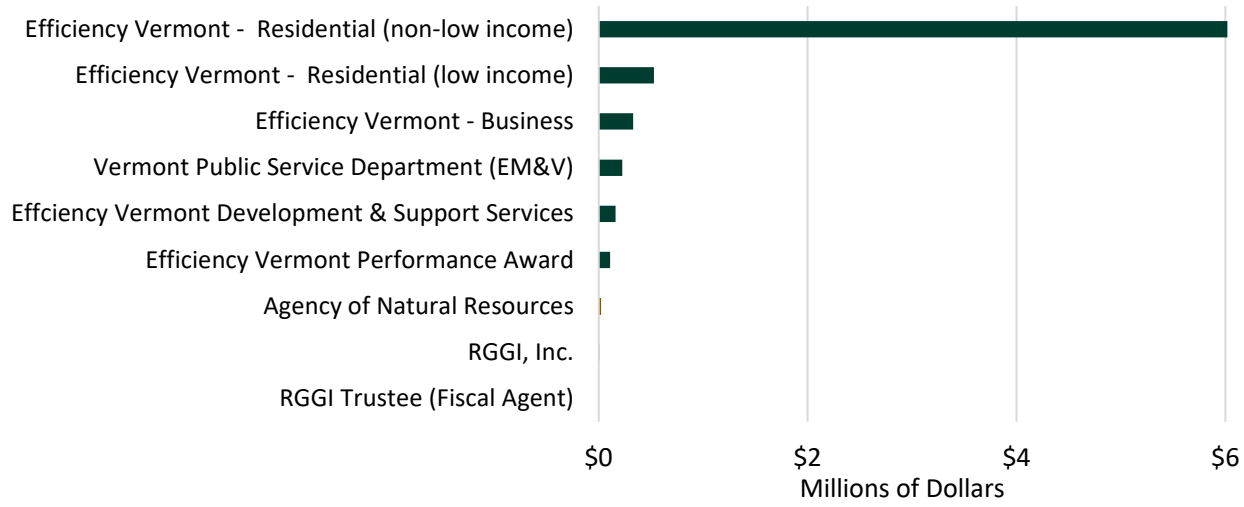
Efficiency Vermont, the nation's first ratepayer-funded energy efficiency utility, is overseen by the Vermont Public Utility Commission, and implemented by the Vermont Energy Investment Corporation (VEIC). Efficiency Vermont's programs have a proven track record of saving energy and money for commercial, 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: Vermont RGGI Investments by Category



Vermont received $32.7M in proceeds from 2008-2021. Vermont investments represent $33.3M cumulatively, with $600,000 of investments borrowed from future proceeds.

Chart 26: 2021 Vermont RGGI Investments by Recipient



Vermont RGGI investments represent $7.5M in 2021.

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 Vermont residences with 1-4 units, to lower utility bills and increase home comfort and safety by installing insulation, air sealing, and health and safety components (heating system improvements may also be recommended). Vermont households can access comprehensive thermal efficiency retrofits, incentives to offset project costs, and low-to-no interest rate financing. Customers hire a participating Efficiency Excellence Network, Building Performance Institute certified, contractor. In 2021, this allowed customers to receive incentives up to $3,000, which 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.[6]

Home Performance with ENERGY STAR is a national brand managed by the U.S. Department of Energy (U.S. DOE). Across the U.S., 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 low-to-no interest rate 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.

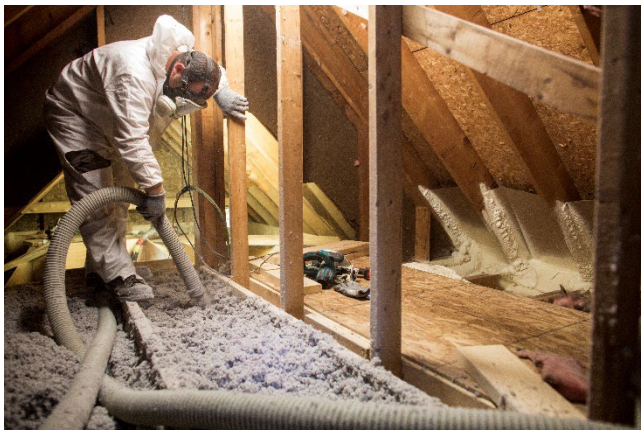
[6] This goal was updated by the Vermont legislature in 2022 with the passage of legislation that set a statewide goal to weatherize 120,000 homes by 2031.

Success Story: RGGI funding continues to provide comprehensive weatherization for Vermont households, and in turn, a solid foundation for workforce development.

With the COVID-19 Pandemic still in full swing in 2021, more and more Vermonters were spending time at home through the heat of summer and into the extreme cold of a Vermont winter. This brought a new appreciation for the value of comfort, indoor air quality, and lower heating and cooling costs -- all benefits that a comprehensive home weatherization project brings.

In fact, in 2021 more than 900 Vermont households utilized a comprehensive air sealing and insulation incentive offered through Vermont's statewide energy efficiency utility, Efficiency Vermont. RGGI is a major source of funding to enable this incentive.

A customer in Middlebury, VT, shared that their family invested in a comprehensive weatherization project, working with Efficiency Vermont and Analyzing Energy, an Efficiency Excellence Network contractor based in Springfield, VT, to air seal and insulate the basement and attic of a family member's home. "We're thrilled with the results of this work, both in terms of comfort and also savings. It's an investment that will continue to pay dividends for many years to come," said the customer.



Workforce shortages were one of the many impacts of the Pandemic, and those shortages were also felt in the weatherization industry. However, though wait times for contractor availability increased in Vermont, contractors were still available and ready to work with Vermont customers like the Middlebury family.

RGGI funding over the years that has fueled weatherization projects in Vermont has in turn provided the foundation that has enabled Vermont to build a weatherization workforce to serve customers. While funding from other sources may be short term, the longer-term nature of RGGI funds has provided more certainty for contractors making longer term investments into their businesses and staff.

"RGGI funding has been a key factor in our ability to grow as a business, and help more Vermonters save money, increase their comfort, and reduce their carbon footprints," said Jacob Robichaud, owner of Analyzing Energy, the company that performed the Middlebury weatherization project. "Stable funding has created a stable market for our services."

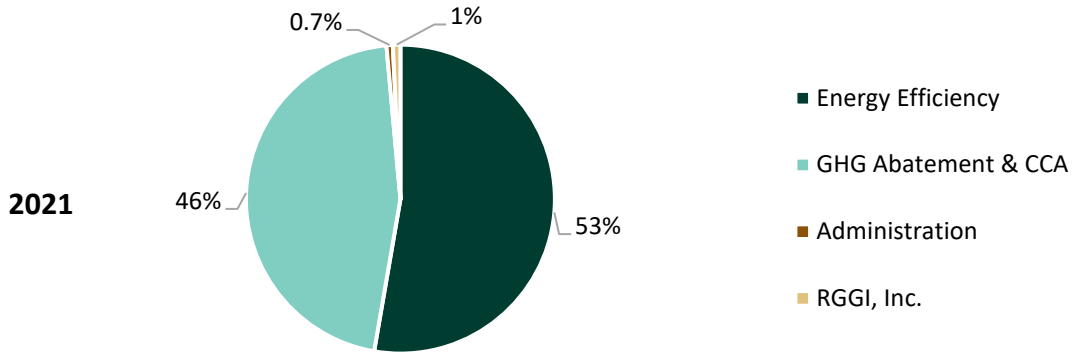
Resources:

- Efficiency Vermont Rebates
- Efficiency Vermont Services
- Efficiency Vermont News

Virginia

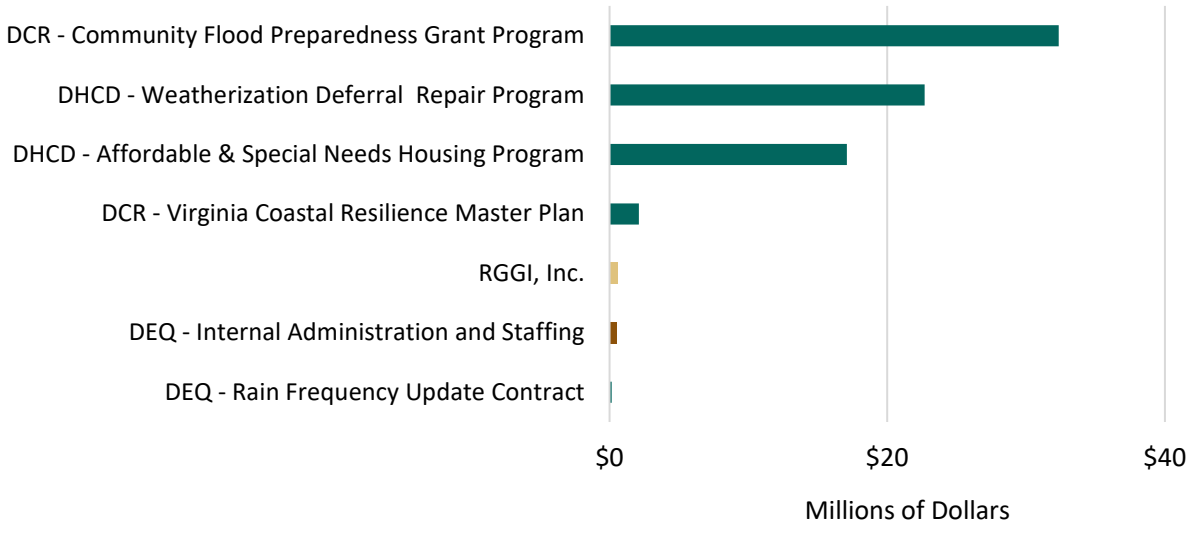
The Clean Energy and Community Flood Preparedness Act (CECFPA) directs 50 percent of quarterly net Regional Greenhouse Gas Initiative (RGGI) allowance auction proceeds to the Department of Housing and Community Development (DHCD) for Housing Innovations in Energy Efficiency (HIEE) programs, and 45 percent to the Department of Conservation and Recreation (DCR) to fund the Virginia Community Flood Preparedness Fund (CFPF) to help localities across the Commonwealth reduce the impacts of flooding by implementing flood prevention and protection projects. The Virginia Department of Environmental Quality (DEQ) receives 3 percent of auction revenues to cover administrative expenses related to running the program and to carry out statewide climate change planning and mitigation activities. DHCD, in partnership with the Virginia Department of Energy, receives 2 percent of the proceeds to administer and implement the low-income energy efficiency programs.

Chart 27: Virginia RGGI Investments by Category



Virginia received $228M in proceeds in 2021. RGGI Investments represent $75.5M in 2021, with $152M committed to 2022 and future programs.

Chart 28: 2021 Virginia RGGI Investments by Recipient



Virginia RGGI investments represent $75.5M in 2021.

Program Highlights: HIEE Program Funds

In calendar year 2021, DHCD invested $42.4 million in quarterly auction proceeds in two programs under HIEE: $15.2 million for the Weatherization Deferral Repair Program (WDR) contracts; and $27.2 million for the Affordable Special Needs Housing Program (ASNH).

The WDR program provides funding to make repairs to issues that have caused homes (or units in multifamily buildings) to be "deferred" from DHCD's federally funded Weatherization Assistance Program (WAP). Because of limitations on use of WAP funds for repairs, the WDR program utilizes HIEE funds for repairs to reduce deferrals and increase access to services for low-income families.

Typical repairs performed through WDR include:

- Roofing replacements or repairs
- Heating, Ventilating and Air Conditioning (HVAC) system replacements or repairs
- Minor structural repairs (many related to water damage)
- Electrical repairs (replacing unsafe wiring or system components)
- Minor plumbing (repairing leaks, installing new or repairing hot water heaters)
- Safely removing potentially hazardous materials (such as mold or asbestos)

Once needed repairs are made and the weatherization agency determines a home or building is "weatherization-ready," the energy efficiency and health and safety measures available through WAP (such as insulation, air sealing, energy efficient light bulbs, ventilation fans, and carbon monoxide detectors) are installed.

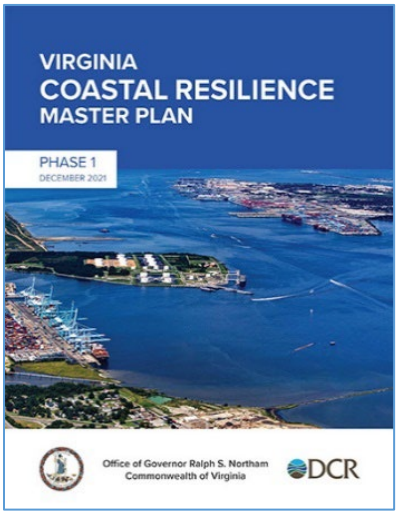
In calendar year 2021, 55 projects were completed, including single-family homes and multi-family properties, serving a total of 194 housing units.

HIEE funds are also made available through DHCD's ASNH program to support development of new affordable housing units and renovation of existing buildings providing permanently affordable housing for low- to moderate-income Virginians. HIEE funds are offered as forgivable, no-interest loans to developers to significantly increase energy efficiency in the housing units built or preserved.

In calendar year 2021, $27.2 million in HIEE funds were awarded to 32 projects for the development or renovation of 1,984 housing units. For every $1 of DHCD funding in a HIEE project (including other ASNH sources), $10 are leveraged from other sources to use toward an eligible affordable housing project. Other funds typically include equity from 4% and 9% Low Income Housing Tax Credit (LIHTC) awards, equity from private mortgages, Fannie Mae or Freddie Mac, local government sources, and private and nonprofit grants.

Program Highlights: CFPF Investments

The CFPF is managed by the Department of Conservation and Recreation (DCR). In calendar year 2021, DCR invested $2.1 million in quarterly auction proceeds to develop Phase 1 of the Coastal Resilience Master Plan and $32,347,963 in quarterly auction proceeds for CFPF projects.



Phase 1 of the Coastal Resilience Master Plan (Master Plan), published December 2021, builds on the 2020 Virginia Coastal Resilience Master Planning Framework, which outlined the goals and principles of the Commonwealth's statewide coastal resilience strategy. DCR anticipates completion of Phase Two of the Master Plan by the end of calendar year 2024.

Key accomplishments of this first phase of the Master Plan include the following:

- Determined current and future land exposure to coastal flooding hazards and identified anticipated changes in future coastal flood frequency across the Commonwealth.

- Assessed the estimated impacts to social, natural, and built assets based on modeled coastal flood exposure.
- Used the modeled the coastal flood hazard information to estimate impacts to Community Resources, Critical Sectors, and Natural Infrastructure.
- Identified areas with both high social vulnerability and coastal flood hazard exposure to determine areas with the greatest potential needs and risks.
- Conducted workshops with Planning District and Regional Commissions, localities, and communities to refine the assessment of impacts due to coastal flooding with local knowledge and understanding.
- Established an inventory of locally driven coastal resilience projects that address regional and statewide needs, and a process for understanding, tracking, and collecting data on ongoing and future proposed resilience projects.
- Developed an initial data-driven approach to evaluate and prioritize projects based on how well efforts align with the guiding principles of the Commonwealth's coastal resilience strategy outlined in the Framework and developed an initial mechanism to align identified coastal resilience projects with potential funding sources.
- Leveraged and augmented previous work supported by the Virginia Coastal Zone Management Program to establish an inventory of grant and loan programs relevant to resilience efforts to assist regions and localities with securing financial resources.
- Created the Coastal Resilience Database and Web Explorer which makes data on coastal flood hazards, impacts, ongoing and proposed projects and initiatives, funding programs, and other relevant information publicly available to support resilience efforts at the state, regional, and local levels.
- Collected information on proposed and ongoing capacity-building and planning initiatives related to resilience and identified the needs of localities and regions across coastal Virginia to advance their resilience efforts.
- Initiated a public planning process and established a baseline understanding of public perspectives and on-the-ground knowledge of coastal flood hazards and preferred strategies to adapt and protect coastal Virginia through workshops with regions, localities, and members of the public.

The CFPF provides funding to localities for capacity building and planning, studies, and projects to address recurrent and repetitive flooding, including flooding driven by climate change. The fund prioritizes projects that are in concert with local, state, and federal floodplain management standards, local resilience plans and the Virginia Master Plan.

On June 4, 2021, DCR opened Round 1 of the CFPF followed by Round 2 of the CFPF on August 5, 2021. On October 5, 2021, Round 1 awards totaling $7,796,040 for 19 projects were announced and posted on the DCR website. On December 22, 2021, Round 2 awards totaling $24,551,923 for 30 projects were announced and posted on the DCR website.

Resources

- Clean Energy and Community Flood Preparedness Act
- Housing Innovations in Energy Efficiency
- Virginia-Coastal-Resilience-Master-Planning-Framework
- Virginia Coastal Resilience Master Plan-Phase 1
- Virginia Community Flood Preparedness Fund

Glossary and Methodology

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 & Climate Change Adaptation
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, other initiatives to reduce greenhouse gases, and climate adaptation and community preparedness initiatives. Some projects can support multiple functions, such as natural area restoration that also serves flood mitigation planning purposes. Program costs include evaluation and measurement.

RGGI, Inc.
Funds provided to RGGI, Inc. to support and implement state CO_2 Budget Trading programs.

General Terms

RGGI Investments
RGGI Investments are the proceeds generated by RGGI CO_2 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_2 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 2022 and beyond.

Current Period
The twelve-month period covered by this report, which may be either the fiscal year or calendar year 2021, as defined by each state.

Benefits and Statistics

Annual (2021)
A measure of one year's worth of benefits from all measures installed in 2021. Note that actual realized benefits in the year 2021 may differ slightly from the 2021 annual benefits, since measures may be installed at different times during the year.

Lifetime (2021)
The full benefits of measures installed in 2021, 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 2021 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 direct job-years created as a result of RGGI funds invested. Estimates were created by applying job factors from the 2021 NYSERDA Clean Energy Industry Report (CEIR) to analogous programs receiving RGGI investments. For programs receiving RGGI investments which related to multiple CEIR job categories, a composite job factor was used which averaged the CEIR job factors for relevant categories. This is a change in methodology compared to previous versions of this report, which estimated direct, indirect, and induced job-years using reasonable job factors 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_2 Emissions Avoided
Estimated total number of short tons of CO_2 avoided as a result of funds invested, calculated using a program-specific formula as defined by each state.

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