



JULY 2017

RHODE ISLAND REGIONAL GREENHOUSE GAS INITIATIVE

2013–2015 Plans for the Allocation and Distribution of
Regional Greenhouse Gas Initiative Auction Proceeds Report

Table of Contents

EXECUTIVE SUMMARY	3
1. Introduction	4
2. Summary of State RGGI Auction Proceeds Allocated in the 2013-2015 State Allocation Plans.....	5
3. Program Descriptions and Accomplishments	6
Energy Efficiency Programs.....	7
Energy Efficiency and Renewable Energy Projects at K-12 Schools.....	9
Community Buildings Non-Profits Program	11
Rhode Island Infrastructure Bank – Efficient Buildings Fund.....	13
Solarize Rhode Island	15
Lead by Example in the Public Sector	16
Conversion of State-Owned Highway Streetlights to LED Technology.....	17
Municipal LED Streetlight Incentive Program	18
Energy Efficiency and Renewable Energy in State Buildings	20
Rhode Island Public Energy Partnership	22
Charge-Up! Program	25
Pascoag Utility District Lighting Project	27
Block Island Power Company Program	28
“Block Island Saves” – Energy Efficiency Program	29
Farm Energy Efficiency Program	31
Residential Delivered Fuels Program	33
Pilot Program to Evaluate Opportunities and Barriers for Renewable Thermal Technologies	35
5. RGGI Inc. Expenses.....	36
6. Administrative Expenses.....	37
7. Plans.....	38

EXECUTIVE SUMMARY

In 2007, the Rhode Island General Assembly enacted Chapter 23-82 of the General Laws, entitled Implementation of the Regional Greenhouse Gas Initiative Act. In doing so, the General Assembly declared that “scientific findings indicate that the increase in greenhouse gas emissions, including carbon dioxide, is accelerating the natural greenhouse effect resulting in changes in the Earth's climate” and that “climate changes pose serious health risks to humans, as well as danger to ecosystems worldwide.” The Act enabled Rhode Island to join other states in the formation of the Regional Greenhouse Gas Initiative (RGGI) – the nation’s first mandatory multi-state program to reduce power sector carbon dioxide (CO₂) emissions. In the years since, state participation in RGGI has generated auction proceeds that have been strategically deployed to advance Rhode Island’s energy policy goals, while simultaneously growing clean energy jobs and reducing greenhouse gas emissions. This report provides an overview of the important clean energy programs and investments enabled by RGGI auction proceeds allocated through the 2013, 2014, and 2015 Allocation Plans.

To effectuate the reduction of greenhouse gas emissions in the electric power generation sector, RGGI establishes a regional cap on the amount of CO₂ pollution that power plants can emit by issuing a limited number of tradable CO₂ allowances. Each allowance, which are allocated through quarterly regional allowance auctions, represents an authorization for a regulated power plant to emit one short ton of CO₂. Individual CO₂ budget trading programs in each RGGI *state* effectively create a *regional* market for the allowances, and leverage market forces to determine the most cost-effective means of reducing emissions while fostering market certainty to help drive long-term investment in cleaner energy sources. RGGI consists of nine participating states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

In 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 carbon footprints. Through the periodic adoption of RGGI Allocation Plans, OER has leveraged auction proceeds with utility ratepayer-derived capital to drive wide-scale deployment of energy efficiency measures consistent with the state’s least cost procurement mandate.¹ Moreover, in recent years, OER has also focused on extending the many economic and environmental benefits of clean energy to underserved sectors of our local economy.

As indicated by the program summaries and project highlights detailed in this report, clean energy investments supported by RGGI auction proceeds are driving the adoption of 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, our State Energy Plan, and broader state energy and environmental policy goals.

¹ <http://webserver.rilin.state.ri.us/Statutes/title39/39-1/39-1-27.7.HTM>

1. INTRODUCTION

The Regional Greenhouse Gas Initiative (RGGI) is the nation's first mandatory multi-state program to reduce power sector CO₂ emissions. The RGGI states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont) establish a regional cap on the amount of CO₂ pollution that power plants can emit, by issuing a limited number of tradable CO₂ allowances. Each allowance represents an authorization for a regulated power plant to emit one short ton of CO₂. Individual CO₂ budget trading programs in each RGGI state together create a regional market for CO₂ allowances. This allows market forces to determine the most cost-effective means of reducing emissions, and creates market certainty needed to drive long-term investments in clean energy. Each state's regulations are independent, and are based on the RGGI Model Rule.²

Pursuant to RIGL §23-82-5, RGGI, Inc. (or other independent contractor) is authorized to receive, hold and sell CO₂ allowances for the long-term benefit of consumers. The statute also authorizes RGGI, Inc. to conduct the auctions or sales; collect the auction proceeds and transfer such proceeds to the Rhode Island Office of Energy Resources (OER). OER then distributes and allocates the proceeds of the auction or sale in accordance with §23-82-6.

Per statute, OER is authorized to allocate RGGI auction proceeds for the following purposes:

- Promotion of cost-effective energy efficiency and conservation;
- Promotion of cost-effective renewable non-carbon emitting energy technologies in Rhode Island;
- Cost-effective direct rate relief for consumers;
- Direct rate relief for low-income consumers;
- Reasonable compensation to RGGI, Inc.; and
- Reasonable costs of the Department of Environmental Management (DEM) and Office of Energy Resources in administering the RGGI program.

To accomplish these purposes, OER, in consultation with DEM and the Energy Efficiency and Resource Management Council (EERMC), periodically draft and implement allocation plans describing how auction proceeds are to be expended. Each proposed allocation plan is made available for public comment and public hearing. A notice is posted on the websites of OER and the Rhode Island Secretary of State announcing a public comment period to accept comments on the proposed plan. OER provides at least thirty (30) days notice of the public hearing. At the conclusion of the public hearing, OER allows an additional ten (10) day period for interested persons to submit data, views or arguments in writing. At the conclusion of the public comment period, OER provides a written response to each substantive public comment. OER maintains a record of all the public comments raised during the public participation process. OER finalizes the allocation plan and posts a copy of the finalized plan on its website.

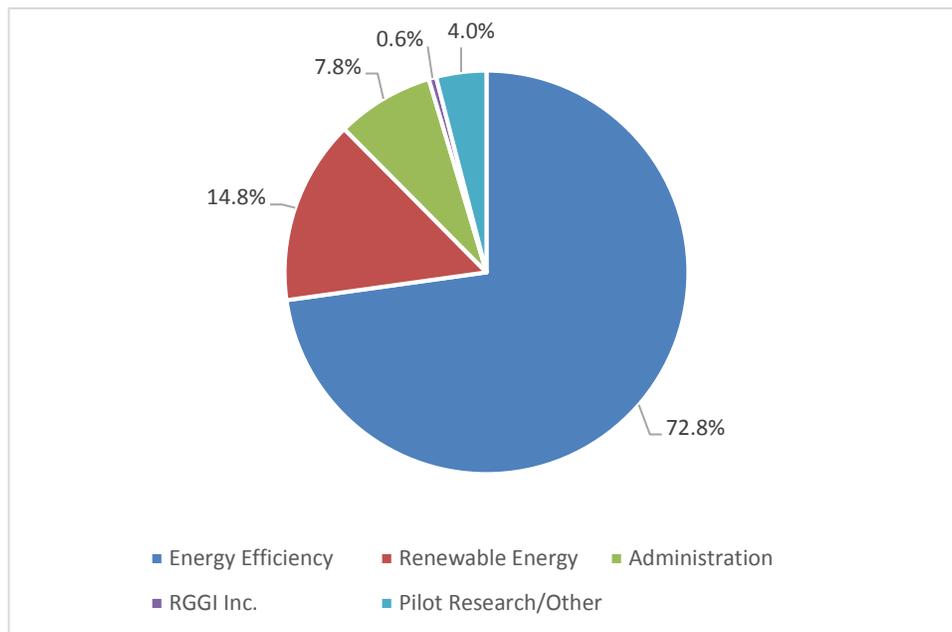
² https://www.rggi.org/docs/ProgramReview/FinalProgramReviewMaterials/Model_Rule_FINAL.pdf

2. SUMMARY OF STATE RGGI AUCTION PROCEEDS ALLOCATED IN THE 2013-2015 STATE ALLOCATION PLANS

This report details RGGI auction proceed allocations made pursuant to three plans issued by OER between February 2014 and August 2015. In total, these plans distributed approximately \$25.7 million in gross auction proceeds, as detailed in the chart below:

Plan	Number of Auctions	Auctions Held	Gross Proceeds Allocated
2013 Plan	4	March 2012-December 2012	\$2,857,538.70
2014 Plan	4	March 2013-December 2013	\$7,385,287.58
2015 Plan	6	March 2014-June 2015	\$ 15,463,860.63 ³

These funds were allocated to support clean energy projects and programs focused primarily on energy efficiency, renewable energy, and pilot research. A portion of these RGGI dollars were also used for administration purposes, as allowed under law. The pie chart below provides a high-level summary of how funds were allocated per the 2013, 2014, and 2015 Allocation Plans.



³ This amount includes \$44,896.35 in accumulated interest that was directed toward programmatic investments.

3. PROGRAM DESCRIPTIONS AND ACCOMPLISHMENTS

All energy savings values (MMBtus and kWh) provided in the following program descriptions were sourced from program applications, National Grid program reports, and energy audit reports where appropriate.

Energy Efficiency Programs

\$7,224,170⁴

In the 2014 and 2015 RGGI Allocation Plans, a total of \$7,224,170 of auction proceeds were used to support the deployment of cost-effective energy efficiency programs and incentives across Rhode Island's consumer base. Importantly, these dollars have been leveraged with ratepayer funds collected by National Grid through a Systems Benefit Charge (SBC) to meet the state's least-cost procurement (LCP) mandate. Rhode Island's LCP mandate requires that electric and natural gas distribution companies invest in all energy efficiency resources with lower cost than traditional supply. Currently, the cost of electric energy efficiency procured is less expensive than the cost of supply. Based on the Residential Standard Offer Service charge effective from October 1, 2016 until March 31, 2017 the cost of electric energy efficiency is 5.79¢ per lifetime kWh saved, which is 3.49¢ less than the cost of supply, 9.28¢ per kWh.⁵ Similarly, the cost of natural gas energy efficiency is \$7.96 per lifetime MMBTU saved, which is \$0.85 less than the cost of supply for residential heating customers, \$8.81 per MMBTU, for 2017.⁶ Without energy efficiency measures installed between 2009 and 2017, Rhode Island customers would have had to purchase 14% more energy at a higher cost.⁷

The energy efficiency programs supported by SBC and RGGI dollars and delivered through National Grid help bring clean energy solutions to Rhode Island's Residential, Income Eligible, Commercial and Industrial sectors; achieve lowest-cost, carbon-free energy savings; and support local investment and job growth. Energy efficiency plays a vital role in reducing energy costs for Rhode Island residents and businesses. The Rhode Island State Energy Plan (SEP) identifies energy efficiency as the states "first fuel" and the centerpiece strategy for achieving the Rhode Island Energy 2035 Vision.⁸ The SEP identifies energy efficiency as the lowest risk, lowest cost, and arguably, the most sustainable energy resource available for Rhode Island.⁹ For every \$1M invested in the energy efficiency sector 45 job-years of employment are created.¹⁰ Likewise, every \$1 invested is estimated to boost Gross State Product by \$4.20.¹¹

RGGI allocations provided to National Grid energy efficiency programs have had the direct effect of reducing the SBC charge on customer utility bills and have supported Rhode Island's position as an innovative national energy efficiency leader. Rhode Island has ranked in the top ten states in the nation for eight years in a row and was scored 4th in 2016 by the American Council for an Energy Efficient Economy

⁴ Total of funds allocated across the 2014 and 2015 RGGI Allocation Plans. This amount includes \$168,601.84 in auction proceeds reallocated in the 2015 Annual Plan from previous plans.

⁵ The electric supply cost is based on the Residential Standard Offer Service Charge effective from October 1, 2016 until March 31, 2017, Please see:

http://www9.nationalgridus.com/narragansett/non_html/SOS_Rates_Table_Residential.pdf. It is levelized over the average lifetime of all measures in the plan. Additionally, the Commercial Customer Group fixed price option for October 1, 2016 until March 31, 2017 is a levelized cost of 9.53¢. Please see:

http://www9.nationalgridus.com/narragansett/non_html/SOS_Rates_Table_Commercial.pdf

⁶ The natural gas supply cost is based on the residential heating gas avoided cost calculation from the Avoided Energy Supply Costs in New England: 2015 Report for year 2017, and is levelized over the average lifetime of all measures in the plan. The C&I gas charge is also a levelized cost of \$7.85.

⁷ National Grid 2017 Energy Efficiency Program Plan October 17, 2016, pp 4

⁸ Energy 2035:Rhode Island State Energy Plan, p 11

⁹ National Grid 2017 Energy Efficiency Program Plan October 17, 2016, pp 2

¹⁰ EERMC Annual Report to the General Assembly May 2016, pp 5

¹¹ EERMC Annual Report to the General Assembly May 2016, pp 5

(ACEEE).¹² This top-tier ranking clearly indicates that Rhode Island’s energy efficiency programs are national models.¹³

For more information on the state’s energy efficiency programs, please visit: www.energy.ri.gov/efficiency. For more information on the National Grid programs. Please visit: <https://www.nationalgridus.com/RI-Home/Energy-Saving-Programs/>

Program Title	Description	Annual kWh Savings (est.)
Lower Ratepayer System Benefit Charge (from 2014 \$3,635,495 allocation)	Funding provided to National Grid to lower the 2015 System Benefit Charge	7,744,000
Lower Ratepayer System Benefit Charge (from 2015 \$3,588,674 allocation)	Funding provided to National Grid to lower the 2016 System Benefit Charge	7,990,000
	TOTALS:	15,734,000

¹² ACEEE – American Council for an Energy-Efficient Economy.

¹³ EERMC Annual Report to the General Assembly April 2014, pp 5

Energy Efficiency and Renewable Energy Projects at K-12 Schools

\$1,799,642¹⁴

Through a competitive process, participating K-12 public and private schools throughout Rhode Island were awarded grants to support energy efficiency investments and renewable energy projects. Grants were leveraged with existing incentives made available from Commerce RI's Renewable Energy Fund and with utility-administered programs supported by National Grid ratepayers to further drive energy and cost reductions. OER awarded grants to three school districts and fifteen schools. Energy efficiency investments included lighting upgrades, boiler replacements and installation of controls for heating systems and fans. These projects have provided energy reductions and cost savings for the schools. In addition grants were provided to fifteen schools to install solar photovoltaic systems ranging in size from 10 – 50kW.

Project Type	School	Annual kWh Savings (est.)	Annual MMBtu Savings (est.)	Nameplate Generation (kW)
Energy Efficiency Projects	Town of Lincoln	63,569	262	NA
Energy Efficiency Projects	East Greenwich	753,685	1,603	NA
Energy Efficiency Projects	Chariho Regional School District	93,662	NA	NA
Solar Installation	Rocky Hill School	NA	NA	33
Solar Installation	Community Prep. School	NA	NA	46
Solar Installation	Meeting Street School	NA	NA	90
Solar Installation	West Warwick H.S. Field House	NA	NA	209
Solar Installation	West Warwick H.S. Ice Rink	NA	NA	235
Solar Installation	Block Island School*	NA	NA	40
Solar Installation	Quest Montessori School	NA	NA	50
Solar Installation	Davies School*	NA	NA	50
Solar Installation	St. Mary's Bay View School	NA	NA	49
Solar Installation	Our Lady of Mt. Carmel School	NA	NA	45
Solar Installation	Lincoln School	NA	NA	49
Solar Installation	St. Michaels School	NA	NA	10
Solar Installation	Moses Brown School	NA	NA	50
Solar Installation	Cranston West High School	NA	NA	50
Solar Installation	Federal Hill House	NA	NA	46
Solar Installation	St. Rose of Lima	NA	NA	50
	TOTALS:	910,916	1,865	1102

*Solar systems have not yet been installed. Installations are expected in 2017.

¹⁴ Total of funds allocated across the 2013, 2014, and 2015 RGGI Allocation Plans. This amount includes \$90,684 in auction proceeds reallocated in the 2015 Annual Plan from a previous plan, as well as the distribution of accrued interest.

Program Highlight

Rocky Hill School is a K-12 co-educational college preparatory school located in East Greenwich, Rhode Island. With a \$104,000 RGGI grant from the Rhode Island Office of Energy Resources, the Rocky Hill School installed a 33 kW solar photovoltaic array on the Alan F. Flynn Upper School Building, which will provide 20% of the building's annual electricity for the next 30 years. Over the system's lifetime, the project is projected to reduce carbon dioxide emissions by 906 metric tons.

"For the 300 students from preschool to grade 12 on the 84-acre campus along the shores of Narragansett Bay, it's part of a multi-pronged effort to run a sustainable campus and to instill environmental stewardship into the student body," stated Peter Hanney, Director of Communications and Marketing at Rocky Hill School. A Davis Vantage Pro2 weather station and a solar irradiance meter were installed adjacent to the array, to collect real time weather and irradiance data, allowing the students access to the data in real time. In addition, the Advanced Placement Environmental Science Class used the data as part of the class curriculum.



Rocky Hill School with rooftop solar array. Photo credit: Peter Frost, Rocky Hill School parent.

Community Buildings Non-Profits Program

\$427,713¹⁵

Community buildings, such as boys and girls clubs and community healthcare centers, play an important role in the lives of Rhode Island residents and our communities. Implementing and adopting clean energy resources at community-based non-profit institutions can be particularly difficult, as up-front capital requirements can often be too difficult to overcome even with the help of existing incentive programs. For example, utility-administered energy efficiency programs can cover up to 70% of the installation costs associated with cost-effective energy efficiency measures, yet many non-profit budgets remain constrained even at those incentive levels, thereby leaving energy cost-saving measures unimplemented. OER worked with National Grid and other stakeholders to help mitigate up-front capital barriers in order to enable valued community partners to seize clean energy opportunities, which ultimately lower utility burdens for those organizations that need it the most.

In the 2013 Allocation Plan, OER directed \$427,713 to support the implementation of cost-effective energy efficiency projects at community buildings. These funds were leveraged with previous RGGI allocations and system benefit charge dollars to drive investments across 109 community buildings in Rhode Island totaling 3,522,245 kWh and 2,780 MMBtu in annual energy savings. Importantly, these supplemental incentives allowed projects that would not have been otherwise completed due to lack of customer funds to move forward.

¹⁵ These funds were allocated in the 2013 Plan. In addition, \$372,287.73 was allocated from the 2012 Plan and \$5,700 was allocated from the Farm Energy Program in the 2013 Plan.

Program Highlight

At the South County YMCA in Wakefield, all interior and exterior lights at the site were converted to LED technology. In all, 75 interior linear fluorescent units were changed to LED fixtures; 43 interior “high bay” metal halide lights were converted, and 23 parking lot and exterior fixtures were replaced. Lighting occupancy controls were installed in selected areas, and a web-based Energy Management System took the place of an existing standalone thermostat. The EMS allows the customer to monitor all of their HVAC equipment, enable CO₂ based demand control ventilation, set temperature and schedules, and facilitate holiday turndowns. The total project cost was \$95,207 at no out-of-pocket cost to the facility. 70% of the cost was covered by the National Grid Direct Install program, while RGGI funds provided the difference. With estimated savings of 111,115 kWh and 954 therms, this upgrade will save the YMCA over \$18,000 annually.



South County YMCA in Wakefield with newly converted interior/exterior LED technology lights.

Rhode Island Infrastructure Bank – Efficient Buildings Fund

\$3,000,000¹⁶

Established under Rhode Island General Laws, Chapter 46-12.2-4.2, the Efficient Buildings Fund (EBF) is a revolving loan fund administered by the Rhode Island Infrastructure Bank (RIIB) to finance energy efficiency and renewable energy projects for municipal buildings and school facilities as well as quasi-governmental agencies. The purpose of this program is to provide financial assistance to local governmental units for deep energy savings projects where the energy savings achieved by the project exceed the debt service. Round 1 of the EBF was capitalized with \$1.8M in SBC-derived dollars and \$3.0M in RGGI funds. These funds supported \$9.8M in energy efficiency project transactions with an average energy reduction of 35% for the portfolio of improvements, totaling 5,988 annual MWh and 3,147 MMBtu. Comprehensive efficiency projects were implemented in four communities and one school district. Measures included LED streetlights with controls, boilers and furnaces, energy management systems, insulation and air sealing, hot water heaters, Wi-Fi programmable thermostats, motors and drives, and indoor LED lighting. In total, EBF closed \$17.2 million in attractive long-term financing for energy efficiency and renewable energy projects in six communities that reduced energy and maintenance costs and resulted in cash flow positive projects.

Bundling short-, medium- and long-term payback measures allowed for deeper savings while maintaining positive cash-flows and competitive interest rates for all borrowers. For example, a comprehensive suite of measures implemented at Cranston’s Edgewood Elementary School will reduce the school’s energy and maintenance costs by 44%. These projects would have been difficult to move forward without the low-cost, long-term financing and hands-on technical assistance offered through the EBF.

Renewable energy projects leveraged funds with the Renewable Energy Fund as applicable.

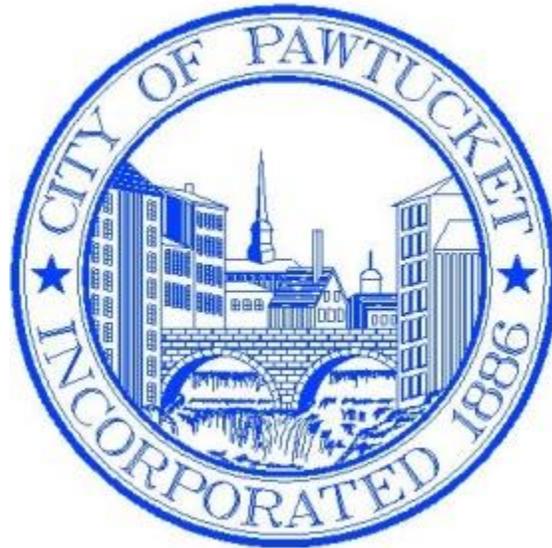
The RGGI funds allocated in the 2015 Plan were used to support the transactions for the eight projects.

Project Title	Location	Annual kWh Savings (est.)	Annual MMBtu Savings (est.)	Nameplate Generation (kW)
Energy Efficiency Projects	Cranston Schools	364,721	275	NA
Renewable Energy- Solar	Newport Water	NA	NA	290.61
Energy Efficiency Projects	Pawtucket	2,545,259	518	NA
Energy Efficiency Projects	Providence	92,775	2,195	NA
Energy Efficiency Projects	Westerly	1,986,035	2.4	NA
Renewable Energy- Solar	Westerly*	NA	NA	66.7
Energy Efficiency Projects	West Warwick	999,070	156	NA
Renewable Energy- Three Wind Turbines (EBF financed one wind turbine)	West Warwick	NA	NA	4,500
TOTALS:		5,987,860	3,146.4	4,857.31

*Project still under development

¹⁶ These funds were allocated in the 2015 Plan.

Program Highlight



Through the Rhode Island Infrastructure Bank's Efficient Buildings Fund, the City of Pawtucket is receiving \$3.9 million in financing for the installation of LED streetlights, high-efficiency boilers, energy-efficient windows and lights, and Wi-Fi programmable thermostats in some municipal buildings. The work is expected to save taxpayers more than \$750,000 in avoided energy and maintenance costs, according to state estimates.

"As Pawtucket continues to capitalize on its positive momentum and reinvest in its infrastructure, we are thrilled to have the RIIB as a resource as we move towards future growth," Pawtucket Mayor Donald R. Grebien said.

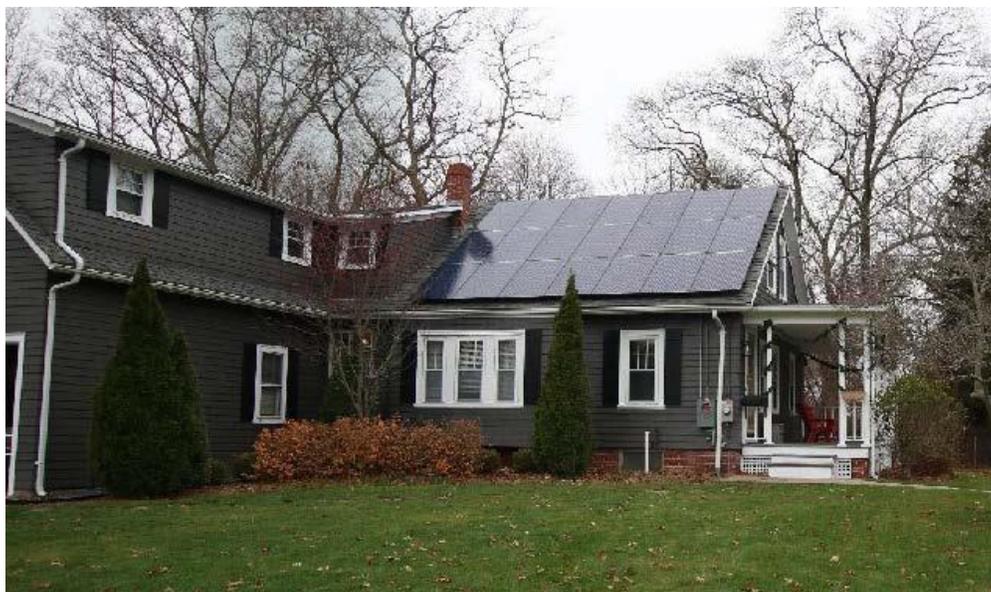
Solarize Rhode Island

\$300,000¹⁷

Solarize is a targeted marketing and education campaign aimed at increasing the adoption of small-scale solar. Solarize initiatives educate residents and small businesses about solar and use a four-pronged strategy to reduce prices and drive participation: partnership with individual municipalities and community-driven outreach; limited time offer; competitively-selected solar installer; and a tiered pricing structure that lowers the price as participation increases. A portion of the RGGI funds were also used to support necessary safety inspections for solar projects installed through a Solarize campaign.

The municipalities selected for the Fall 2015 program were Foster, Barrington, South Kingstown, as well as the Aquidneck Island communities of Middletown, Newport and Portsmouth. The Fall 2015 program results indicated that 250 customers signed contracts for more than 1.7 MW of solar PV capacity. Campaign results from 2016 are shown in the table below.

Project Title	Location	Nameplate Generation (kW)
Spring 2016 Campaign	Bristol, Barrington, Providence	620.79kW
Warwick Campaign	Warwick	32.36kW
	TOTALS:	653.15kW



Vaughn Residence, Solarize Barrington customer

¹⁷ These funds were allocated in the 2015 Plan.

Lead by Example in the Public Sector

On December 8, 2015, Governor Gina M. Raimondo signed *Executive Order 15-17: State Agencies to Lead by Example in Energy Efficiency and Clean Energy*. The Lead by Example Executive Order (LBE EO) sets robust energy reduction targets and clean energy goals for State agencies consistent with the Governor's broader policy goals that include clean energy industry and job growth; reducing public sector energy costs; diversifying the State's energy mix; and reducing public sector greenhouse gas (GHG) emissions. The Governor tasked the OER with overseeing and coordinating efforts across State government to achieve the goals set forth in the LBE EO.

The Governor notes that the State's transition to a cleaner, low-carbon energy economy presents "unprecedented challenges, as well as opportunities to strengthen the State's economic competitiveness, create thousands of well-paying jobs, foster new clean energy industry opportunities, improve public health, protect the environment, and enhance the quality of life." Moreover, Governor Raimondo identifies the State as "one of the largest energy consumers in Rhode Island, with energy expenses of nearly \$35 million in fiscal year 2014." Relative to energy efficiency, the Governor has established goals to: reduce overall State agency energy consumption by at least 10 percent below FY14 levels by the end of FY19; achieve a high standard of green building operations and maintenance at all State facilities; establish a voluntary stretch building code available for use in all State construction and renovation projects, as well as those in the private sector; and make State energy usage data more transparent.

In the 2013-2015 RGGI Plans, OER allocated \$4.1 million¹⁸ in RGGI funds to support clean energy investments across State facilities. In addition, OER has committed to assisting Rhode Island municipalities with implementing their own Lead by Example clean energy investments. Since 2013, approximately \$4.6 million¹⁹ in state RGGI auction proceeds have been directed to support clean energy investments at city and town facilities across Rhode Island. These allocations have provided the catalyst to assist public sector entities in moving forward with comprehensive energy efficiency retrofits, renewable installations, and other clean energy measures that can reduce and stabilize public sector energy costs, shrink government's carbon footprint, and support Rhode Island's burgeoning clean energy economy. Where appropriate, these dollars are leveraged with utility-administered incentives and other funding sources to further drive energy cost reductions.

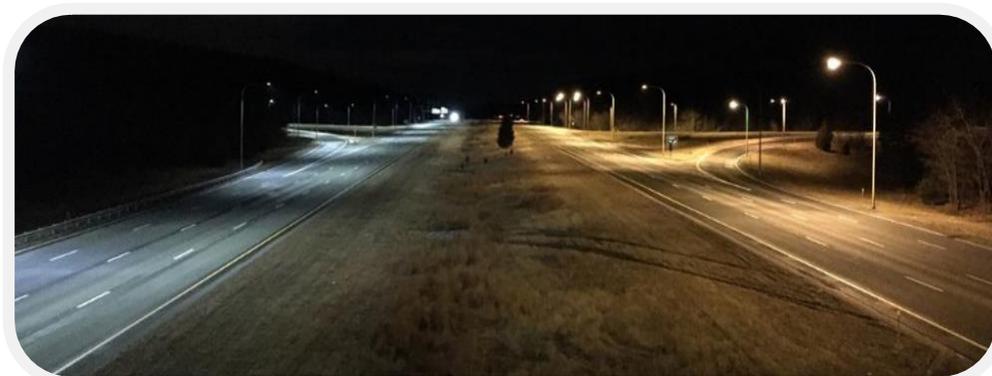
For more information on these efforts, please see OER's annual report evaluating the State's progress toward Lead by Example Executive Order (LBE EO) goals, available at: www.energy.ri.gov/leadbyexample/.

¹⁸ This amount includes a \$600,000 allocation to support public sector adoption of electric vehicles and charging infrastructure across both state and municipal entities when coupled with EE/renewable measures that more than offset any new electric load.

¹⁹ This amount includes allocation to support implementation of the Rhode Island Public Energy Partnership and deployment of LED streetlights.

Conversion of State-Owned Highway Streetlights to LED Technology

\$3,050,000²⁰



I-295 Exit 7 – Smithfield (Left side of the highway are LEDs during conversion process)

Through this initiative, Rhode Island is poised to become the first state to shift all state-owned highway streetlights to new light-emitting diode (LED) technology, which will lead to substantial energy cost reductions and improve the quality of lighting across our roadways.

With the support of RGGI funds, the Rhode Island Department of Transportation (DOT) is replacing approximately 7,000 high pressure sodium lighting fixtures (HPS) with LED luminaries and installing wireless lighting controllers statewide. LED technology are environmentally friendly, free from hazardous chemicals such as mercury and lead which release toxins, provide a longer lifespan than traditional HPS, and allow for wider coverage of a consistent light pattern. The wireless lighting controllers enable the lights to “talk” with a server to provide operational improvements and energy savings with utility-grade metering, asset management, remote dimming control per fixture and more.

The annual energy savings after the completion of this retrofit are projected to exceed \$1 million. RGGI dollars are being leveraged with utility-administered incentives to help make this project a reality. By January 2017, nearly 78% of the state’s total inventory of highway streetlights will have been replaced with energy-efficient LED lighting.

These financial incentives provided with RGGI funds are related to energy savings derived from the installation and operation of more energy efficient lighting technologies, and are provided in addition to any incentives that DOT may be qualified to receive through utility-administered energy efficiency programs.

Project Title	Location	Annual kWh Savings (est.)
Department of Transportation: LED Streetlights & Controls	Streetlights on state-owned highways	5,657,545
TOTALS:		5,657,545

²⁰ These funds were allocated in the 2014 and 2015 Plans.

Municipal LED Streetlight Incentive Program

\$1,525,000²¹

Through this initiative, OER has made available \$1.525 million in financial incentives to Rhode Island municipalities seeking to reduce their energy consumption and costs through the installation of light-emitting diode (LED) streetlights and control technologies. These enhanced incentives are being offered in addition to any applicable National Grid-administered incentives and represent a unique project cost savings opportunity for first-mover communities. Conversions from traditional street lights to more efficient LEDs have the potential to reduce energy consumption and costs by approximately 40 to 60 percent.

Under this enhanced incentive program, municipalities that have acquired their lighting equipment and plan to retrofit their existing streetlights to more energy efficient LED technologies can apply to receive \$0.40 per watt reduced for qualified LED fixtures and \$20.00 for each remotely-programmable dimming control installed (as applicable). A qualified municipality can receive a total award of up to \$300,000 from OER in addition to any utility-administered energy efficiency incentives they may receive.

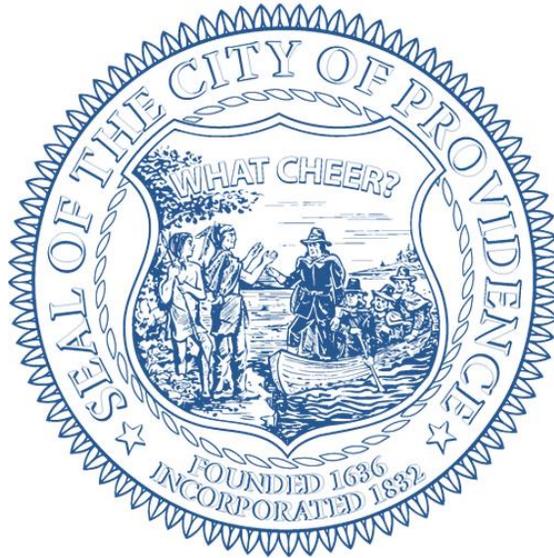
As of January 2017, five communities have applied for incentives through OER’s municipal streetlight program: Barrington, Bristol, Cranston, Providence, and West Warwick. OER estimates that more than 70 percent of the 98,000 street lights in Rhode Island will be converted to LEDs over the next two years.

Project Title	Location	Annual kWh Savings (est.)
Municipal Streetlight Conversions to LEDs & Controls	Providence	13,232,304
Municipal Streetlight Conversions to LEDs & Controls	Barrington*	405,694
Municipal Streetlight Conversions to LEDs & Controls	Bristol*	536,719
Municipal Streetlight Conversions to LEDs & Controls	Cranston*	5,038,010
Municipal Streetlight Conversions to LEDs & Controls	West Warwick*	873,957
	TOTALS:	20,086,684

*Applications and projects are still under development

²¹ These funds were allocated in the 2014 and 2015 Plans.

Program Highlight
City of Providence



The Rhode Island Office of Energy Resources (OER) approved \$300,000 in enhanced incentives to support the installation of LED streetlights and control technologies in the City of Providence in July 2016. This project will reduce Providence's energy consumption and costs, and help shrink the community's carbon footprint.

The City of Providence is the first Rhode Island community to receive such an award through OER's Municipal LED Streetlight Energy Efficiency Program. The City will convert more than 17,000 street lights to LED lights and will also utilize applicable National Grid-administered incentives.

Energy Efficiency and Renewable Energy in State Buildings

\$500,000²²

To advance Governor Raimondo's Lead by Example goals of reducing energy costs and carbon footprints across State facilities, OER has allocated RGGI auction proceeds to implement cost-effective investments in energy efficiency and renewable energy. These dollars are being leveraged with available utility-administered incentives, programs such as the Renewable Energy Fund at Commerce RI and other funding sources, where available. These clean energy improvements at buildings and facilities owned and operated by the State will reduce energy consumption and utility costs while supporting local economic growth and job creation. Consequently, these projects will benefit Rhode Island taxpayers and advance important state energy and environmental goals.

The LBE EO initiative is also promoting interdepartmental cooperation, unlocking opportunities to invest in comprehensive energy efficiency and renewable measures that can reduce and stabilize public sector energy costs, shrink government's carbon footprint, and support Rhode Island's burgeoning clean energy economy.

The following state projects described in the table are in various stages of implementation as of the date of this report. For more information, OER's annual report evaluating the State's progress toward LBE EO goals can be found at: www.energy.ri.gov/leadbyexample/.

Project Title	Project Description	Estimated Annual kWh Savings	Estimated Nameplate Generation (kW)
Powers Building Garage	Lighting replacement with new LED fixtures	238,009	NA
DEM Lighting Upgrades	Lighting upgrade at six DEM Facilities	367,348	NA
Pastore Building #61	Energy Efficiency Improvements	169,461	NA
Solar Designs for Capitol Hill	Solar PV Design and construction administration for Powers, DOT, Canon buildings on Capitol Hill	NA	267.84 kW
DEM Solar Lights	10 solar lights in George Washington Management Area Campground	946	NA
DOT Garage Upgrades	Energy Efficiency retrofits in DOT garages (phase I)	169,461	NA
	TOTALS:	945,225	267.84

²² Through 2016, OER has allocated approximately \$5.2 million to support energy efficiency and renewable deployment at State buildings, including \$500,000 in the 2014 Plan. These investments are designed to reduce and stabilize State energy costs, and help achieve Lead by Example goals.

Project Highlight Powers Building Garage Lighting Upgrade

In 2016, OER worked with the Department of Administration’s Division of Capital Asset Management and Maintenance (DCAMM) to support replacement of all existing Powers Building Garage lighting fixtures with more cost-effective LEDs, while connecting them to the building’s existing lighting management system. The Powers Building was designed in 1989 and completed in 1991; it currently houses the offices of the Department of Administration, as well as support offices for Revenue and Taxation. The building has four stories above grade, with a basement level partially below grade, and three floors of parking structure beneath. In the garage, the embedded electrical conduit had deteriorated to the point where it needed to be replaced, and all light fixtures re-fed from house electrical panels. As a result, DCAMM and OER worked together to completely replace the garage’s interior lighting and associated power distribution – a project supported by \$363,702 in RGGI auction proceeds.

In addition to replacing all existing light fixtures with energy efficient LEDs and sensors tied into the building’s existing lighting management system, three electric vehicle charging stations, exit signage and emergency lighting (and associated circuiting) were also installed as part of the project. In total, the project – which has a payback period of just 8 years – is anticipated to reduce facility energy consumption by 238,009 kWh, and save the Department of Administration \$32,131 in annual energy costs.

kWh Savings	Annual (est.)	238,009
kWh Savings	Lifetime (est.)	3,570,135
MMBtu Savings	Annual (est.)	812
MMBtu Savings	Lifetime (est.)	12,181
Avoided Annual GHG	(CO ₂ lbs.)	261,810
Avoided Lifetime GHG	(CO ₂ e short ton)	3,927,150

Rhode Island Public Energy Partnership

\$1,000,000²³

In 2012, OER was awarded a three-year competitive grant from the United States Department of Energy to establish the Rhode Island Public Energy Partnership (RIPEP), a precedent-setting collaboration to achieve deep energy savings in municipal, school, and state facilities. In addition, RIPEP was designed to inventory and collect data on public facilities to inform municipalities of their energy usage and the identification of efficiency and renewable energy opportunities. Project partners included OER, National Grid, the University of Rhode Island Outreach Center, Narragansett Bay Commission, the Energy Efficiency and Resource Management Council, and other key public and private sector representatives.

Since developing RIPEP, OER has allocated a total of \$2.5 million in RGGI auction proceeds to support implementation of cost effective energy efficiency projects across municipal buildings. These funds were further leveraged with utility-administered energy efficiency incentives where applicable. At the completion of the project in September 2015, RIPEP achieved the following results:

- Energy data baseline inventories were established for all public facilities, which includes 546 municipal, 331 school and approximately 900 state facilities, for a total of about 1777 facilities.
- 39 energy audits were performed covering over 1.8 million square feet.
- 123 energy efficiency projects were implemented for total energy savings of 28.6 percent or 42,869 MMBTU.
- 10 renewable energy assessments were completed at water and wastewater facilities, which identified 26.8 MW of renewable energy generating potential identified at 10 facilities.
- Over \$5 million in rebates and on-bill repayment funds were utilized to support project implementation.

Barriers to implementing energy efficiency in the public sector were identified and addressed through solutions including master price agreements, expanded and enhancing financing and incentive options, and extensive technical assistance. RIPEP was highly successful not only in establishing an infrastructure for achieving deep energy savings in the public sector, but also identifying key barriers to achieving those savings.

²³ These funds were allocated in the 2015 Plan.

Project Title	Location	Annual kWh Savings (est.)	Annual MMBtu Savings (est.)
Energy Efficiency Projects	Cranston Schools	118,282	NA
Energy Efficiency Projects	Cumberland Schools	88,148	NA
Energy Efficiency Projects	Johnston Schools	84,414	NA
Energy Efficiency Projects	Lincoln Schools	77,695	NA
Energy Efficiency Projects	RI Dept. of Transportation	4,095	NA
Energy Efficiency Projects	Block Island Water Company	11,264	NA
Energy Efficiency Projects	Town of Barrington	61,122	2,000
Energy Efficiency Projects	National Guard	101,350	NA
Energy Efficiency Projects	Providence Schools	935,710	NA
Energy Efficiency Projects	RI Dept. of Environmental Management	354,640	NA
Energy Efficiency Projects	Portsmouth School Dept.	374,075	NA
Energy Efficiency Projects	East Greenwich	278,760	NA
	TOTALS:	2,489,555	2,000

Program Highlight

OER's RIPEP program provided \$89,783 to support comprehensive energy efficiency measures in Barrington's town hall building. Measures included a building-wide energy management system, variable speed drives, LED lighting and weatherization. The annual energy savings are expected to be 36% (61,122 kWh) of electric usage and 29% (4,679 therms) of gas usage. Cost savings between energy and maintenance savings is estimated to be \$18,244 annually. RGGI funds were used to provide the Town of Barrington the capital to implement the project. The funds were repaid as part of the utility's on-bill repayment program, which allows customers to pay for the cost of implementation over a 2-5 year period at zero interest. The utility also contributed \$33,577 in direct incentives, allowing the Town to make these upgrades with no upfront costs. This is just one example of the 123 projects funded with RGGI dollars as part of RIPEP.



Charge-Up! Program

\$600,000²⁴

The Rhode Island Charge-Up! Program offers incentives to State agencies and municipalities to install electric vehicle supply equipment (EVSE or charging stations), and supports the purchase or lease of electric vehicles (EVs) for integration into public sector fleets. Qualified public sector applicants are eligible to receive a total award of up to \$75,000 to support their adoption of clean transportation solutions. Governor Raimondo's Lead by Example Executive Order (LBE EO) sets a requirement that a minimum of 25 percent of new light-duty state fleet purchases and leases be zero-emission vehicles by 2025. The Charge Up! Program supports State agencies and municipalities that demonstrate their clean energy leadership through adoption of electric vehicle charging infrastructure and electric vehicles for public sector fleets.

In order to be eligible for this program, a qualified public sector entity must have completed – or be contracted to install – a comprehensive energy efficiency and/or renewable project that, at minimum, offsets the projected electricity consumption that will be used as a result of installing new electric vehicle charging station(s).

Projects awarded as of 1/1/2017	Number of Charging Stations Installed	Number of Electric Vehicles Purchased	Annual kWh Savings (est.)*	Annual MMBtu Savings (est.)*	Nameplate Generation (kW)*
Public Utilities Commission	2 Level II charging stations	1	69,515	NA	NA
State of Rhode Island - DOA	3 Level II charging stations	0	238,000	NA	NA
Town of Coventry Public Library	1 Level II charging station	0	227,491	NA	NA
Town of West Warwick	1 Level II charging station; 1 DC Fast Charge station	2	811,784	NA	10,850,520
TOTALS	8	3	1,346,790	NA	10,850,520

*Savings from projects to offset the energy use of the EVSE installations

²⁴ These funds were allocated in the 2014 Plan. An additional \$125,000 was allocated in the 2016-A Plan.

Program Highlight

The Rhode Island Public Utilities Commission (PUC) has installed two EVSE LLC charging stations at their offices on Jefferson Boulevard, Warwick. The PUC also purchased a 2016 Chevrolet Volt to use for official business purposes. In May 2016, the PUC also upgraded exterior and interior lighting at their facility, which is anticipated to reduce their annual electrical consumption by 69,515 kWh. These electrical savings are projected to more than offset the increased electric usage from the two new EVSE stations.



Pascoag Utility District Lighting Project

\$212,500²⁵

Rhode Island is home to two small municipal-centric utilities: the Pascoag Utility District (PUD, located in Burrillville)²⁶ and Block Island Power. While small in comparison to National Grid, these utilities provide a vitally-important service to their local customers. Moreover, because they are located within a distinct utility service territory, Pascoag and Block Island ratepayers have not had broad access to the Rhode Island’s nation-leading energy efficiency programs, which are supported by National Grid ratepayers. In its mission to unlock the economic, energy, and environmental benefits of energy efficiency for ALL Rhode Islanders, OER has leveraged state RGGI allocation proceeds to drive cost-effective efficiency investments in these communities.

In regards to Pascoag, OER has committed \$212,500 to support PUD’s on-going investments in LED street lighting across their district. In adopting LED lighting, PUD is reducing energy costs for local ratepayers, decreasing utility maintenance and equipment costs, and enhancing the quality of roadway lighting. Supplemented by PUD Demand Side Management (DSM) and capital funds, this grant enabled PUD to purchase and install 812 LED streetlights, for an annual cost savings of \$21,077 per year.



The project includes LED conversions of PUD-owned public and private streetlights at locations throughout the villages of Pascoag and Harrisville, including, but not limited to, local school grounds, town parks and parking lots, and boat launches. Once completed,

this LED conversion will reduce the community's overall streetlight costs and its carbon footprint; improve the quality of roadway lighting and enhance public safety; and decrease utility maintenance and other operational costs. Approximately 86 percent of PUD’s total streetlight assets will be powered by LEDs by the end of 2016.

Project Title	Location	Annual kWh Savings (est.)
Pascoag Utility Streetlight Conversions to LEDs & Controls	Pascoag Utility District	191,059
TOTALS:		191,059



²⁵ These funds were allocated in the 2014 (\$62,500) and 2015 (\$150,000) Plans.

²⁶ The Pascoag Utility District is a quasi-municipal entity established by an Act of the Rhode Island General Assembly in 2001. The District provides electric and water services to its customers. The Electric division is the only public power utility in the state of Rhode Island, meaning it is locally owned by its customers, and not-for-profit. It purchases electricity and distributes it to approximately 4,700 customers in the Villages of Pascoag and Harrisville, both in the Town of Burrillville, Rhode Island. The Water Division serves approximately 1,100 residential and commercial/industrial customers in the Village of Pascoag.

Block Island Power Company Program

\$45,194²⁷

Through this initiative, the Block Island Power Company (BIPCO) replaced seventy-four (74) existing high pressure sodium (HPS) municipal street lights with energy efficient light-emitting diode (LED) street lights. The project provided BIPCO customers and the New Shoreham community with streetlight fixtures that improve lighting quality and roadway safety, maximize energy savings and greatly reduce associated maintenance and operational costs to the utility. In addition, as a result of this coordination with OER, BIPCO agreed to reduce the local streetlight tariff it charges the Town of New Shoreham by at least 56% upon project completion. Based on these new tariff rates, the Town can expect annual cost savings of approximately \$8,650.

Project Title	Location	Annual kWh Savings (est.)
Block Island Power Company Streetlight Conversions to LEDs	Town of New Shoreham (Block Island)	29,991
	TOTALS:	29,991



²⁷ These funds were allocated in the 2014 Plan.

“Block Island Saves” – Energy Efficiency Program

\$500,000²⁸

During recent years, residents and businesses of Block Island (New Shoreham) have paid some of the highest energy prices in the nation; yet, despite significant energy costs, New Shoreham did not have access to a comprehensive suite of energy efficiency programs, services, or educational tools. To fill this notable void in statewide energy service delivery, OER developed and implemented a pilot energy efficiency program on the island – Block Island Saves. The program is designed to reduce New Shoreham small business and year-round resident energy consumption and costs, support the state’s clean energy economy, and shrink the island’s carbon footprint.

To leverage best practices and program design elements from Rhode Island’s nation-leading (mainland) energy efficiency programs, OER worked in partnership with National Grid to launch a pre-pilot program in 2015, and provided 15 year-round residents and commercial establishments with free, no-obligation energy audits and incentive opportunities. The pre-pilot results indicated large potential for savings and high customer interest, with over 91,000 kWh and 280 MMBtus of annual savings achieved.

Based on the success of the pre-pilot, in 2016, the program’s design and incentive offerings were made available to all year-round residents and business in New Shoreham. OER is currently compiling program results and will be issuing a report on its efforts in 2017.

Project Title	Description	Annual kWh Savings (est.)	Annual MMBtu Savings (est.)
Pre-Pilot Phase	5 small businesses and 10 year-round residents received incentives for electric and/or weatherization measures	91,852	283
Pilot Phase*	13 small businesses and 23 year-round residents have received energy audits thus far	59,877	63
TOTALS:		151,729	346

*Numbers only reflect measures fully installed as of early Dec 2016. Projects are on-going.

²⁸ These funds were allocated in the 2015 Plan.

Highlight Story

Story content published by the Block Island Times and written by Cassius Shuman

Sven Risom, owner of North Light Fibers, a yarn, garment and home décor store and micro yarn mill located on Spring Street, told The Times that his property has benefitted from installing energy efficiency measures offered per the Energy Efficiency Initiative (EEI) program. The North Light Fibers building was built in 2010, and has four rooms and one bathroom with a storage space in the attic.

“The EEI program has been a great benefit for North Light Fibers as we are now using less power to light the building,” said Risom. “The program identified heat loss areas, new lighting, insulating opportunities, and places to reseal certain doors. We were very pleased with the service and professional installation, support and service.”

Risom said that OER technicians installed “all new lighting throughout the building. We paid for approximately one-third of the costs (for the lights). The savings enabled us to install the new lighting systems.”

Risom noted that it was “too early to measure” the savings from the program and installation of the LED lights, but said that he would recommend the EEI program to other island businesses.



*The North Light Fibers mill where Philips brand LED lights were installed as part of OER's program.
Photo courtesy of Sven Risom*

Farm Energy Efficiency Program

\$300,000²⁹

Recognizing that farmers play a vital role in the economy, environment and sustainability of Rhode Island, OER is working with National Grid to improve farm energy efficiency. Because farmers often rely heavily on delivered fuels and represent a hard-to-reach sector for standard energy efficiency programs, OER dedicated RGGI funds to jump-start a farm-specific energy efficiency program. OER supported comprehensive energy audits for eight pilot farms ranging from dairy to greenhouse operations. Findings from these audits were used to create auditing tools and to train two RISE Engineering auditors – National Grid’s Small Business/Direct Install vendor – to provide energy assessments on Rhode Island farms.

In April 2016, the program was opened to all Rhode Island farmers on a first-come-first-serve basis. The program offers free energy assessment and access to prescriptive rebates and incentives for both electric and delivered fuel energy efficiency measures.

Project Title	Description	Identified Annual kWh Savings (est.)	Identified Annual MMBtu Savings (est.)
Farm Energy Efficiency Program Pilot Phase*	9 pilot farms across the state received energy audits	102,000	1,450
Farm Energy Efficiency Program**	2 farms have received energy audits thus far.	13,832	-
	TOTALS:	115,832	1,450

*Values indicate identified savings. Not all projects are complete. Fully implemented savings may differ.

**Data current as of Nov 2016

²⁹ These funds were allocated in the 2013 (\$200,000) and 2015 (\$100,000) Plans.

Highlight Story

Pine View Farm in North Scituate Rhode Island is a 12 acre farm run by Frank Martinelli. The farm stables horses and sells livestock such as pigs, chickens, turkeys and beef cattle. Through an energy audit, a variety of electric and heating energy efficiency measures were identified. Lighting upgrades were undertaken for the horse stable and weatherization measures including a new layer of plastic, weather stripping, and an energy efficient inflation fan were installed in the greenhouse.

Incentives for these measures covered over 70% of the total project costs. All together, these measures are expected to save Frank about \$1,000 a year in energy costs.



Residential Delivered Fuels Program

\$2,400,000 ³⁰

Delivered fuels³¹ play a significant role in the thermal sector³² of Rhode Island's energy economy. Over one-third of Rhode Island homes use delivered fuels for heating. These fuels supply nearly 40% of Rhode Island's overall heating needs. Delivered fuels are higher cost and more carbon intense relative to other heating fuels used in Rhode Island, such as natural gas. Despite the prevalence of delivered fuels, little dedicated energy efficiency program funding exists to serve delivered fuels customers³³ - even though the state currently ranks as a national leader in energy efficiency.³⁴ As noted in the State Energy Plan, Rhode Island's delivered fuels sector is a key area of need and opportunity for energy, cost, and emissions savings.³⁵ Current funding for the efficiency programs under Least-Cost Procurement derives solely from electric and natural gas demand-side management charges, leaving unregulated fuel users with historically limited access to program offerings.

In order to fill this funding gap, OER allocated \$2.4 million in RGGI funds to support the delivery of energy efficiency incentives – specifically, home weatherization – through the utility-administered EnergyWise program from 2014 through 2016. These incentives were made available to residents who heat their homes with oil, propane or other delivered fuels. More broadly, the Energy Wise program provided residents with free home energy assessments which determines a home's energy usage. Through diagnostic tools, energy bills, and conversations with the customer, the auditor can identify energy-efficiency improvements to help save energy, reduce energy costs, and improve the air quality, comfort and value of the home. Residents then have ninety (90) days to complete the installation of recommended improvements and submit their request for incentive payment.

In recent years, OER's RGGI allocations have helped fill part of the funding gap as it applies to addressing delivered fuels efficiency. However, these funds are not sufficient in the short- or long-term to address market demand and consumer needs in this sector. OER will continue working with its stakeholder partners in 2017 and beyond to identify new and innovative ways to reduce consumer costs and carbon emissions across Rhode Island's delivered fuels sector.

³⁰ These funds were allocated in the 2013 (\$800,000) and 2015 (\$1,500,000) Plans.

³¹ Delivered fuels refer to petroleum-based heating fuels, chiefly home heating oil, propane and kerosene.

³² Rhode Island's thermal sector comprises energy consumed in residential and commercial buildings primarily for space and water heating, and industrial sector fuel consumption to generate process heat.

³³ Rhode Island thermal sector comprises energy consumed in residential and commercial buildings primarily for space and water heating,

³⁴ As of 2016, ACEEE ranked Rhode Island 4th in the nation for energy efficiency.

³⁵ Energy 2035, Rhode Island State Energy Plan

Project Title	Location	Annual kWh Savings (est.)	Annual MMBtu Savings (est.)
Residential Delivered Fuels Program (from 2013 \$800,000 allocation)	482 participants received weatherization assistance throughout National Grid territory	NA	12,763
Residential Delivered Fuels Program (from 2015 \$1.5M allocation)	953 participants received weatherization assistance throughout National Grid territory	339,024	23,893
	TOTALS:	339,024	36,656

Pilot Program to Evaluate Opportunities and Barriers for Renewable Thermal Technologies

\$350,000³⁶

Heating and thermal energy use accounts for one-third of Rhode Island's statewide energy consumption. Annually, approximately \$1.1 billion is spent on thermal-related energy costs, and the sector releases 3.9 million tons of CO₂ into the atmosphere each year. Natural gas and petroleum-based delivered fuels (primarily heating oil and propane) supply nearly one-hundred percent of fuel use in this sector.³⁷ Existing and emerging alternative heating technologies offer the promise of reducing thermal consumption and long-term consumer costs; mitigating the thermal sector's impact on the environment; and creating new business opportunities for industry. In order to further understand the opportunities and barriers for renewable thermal technologies, OER allocated RGGI funds for the following two programs:

- *Cool Smart Impact Evaluation, Monitoring and Verification of ductless mini-split heat pumps.* This study collected data and evaluated the performance of ductless mini-split heat pumps installed through National Grid's energy efficiency programs in 2013. The study was a coordinated effort by Rhode Island and Massachusetts utilities; OER committed funds to support the expansion of the original study scope beyond solely Massachusetts homes to include the addition of 20 Rhode Island homes. Ductless mini-split heat pumps (mini splits) are an HVAC technology that provide efficient electric heating and cooling for homes by moving heat in or out of the building. Recent advances in the technology have improved cold temperature system operation, making these systems viable options for homes in the Northeast.
- *Renewable Thermal Market Development Strategy.* In 2015, OER issued a Request for Proposals for a vendor to assist in the development of a strategy to strengthen the market for renewable thermal (heating and cooling) technologies in Rhode Island. Renewable thermal fuels—biomass, solar hot water, ground- and air-source heat pumps, advanced biofuels, and biogas—provide customers with cleaner and potentially more affordable options to meet their heating needs. In 2016, OER worked with a consultant team and a stakeholder-based task force to assess the potential for renewable thermal market growth in the state; calculate anticipated costs and benefits of a large-scale renewable thermal initiative; and identify key policies that will strengthen the market infrastructure for renewable thermal technologies. This report is available on the OER website.

³⁶ These funds were allocated in the 2013 Plan.

³⁷ RI Office of Energy Resources 2015 Annual Report, pp 18

5. RGGI INC. EXPENSES

RIGL §23-82-6(a)(5) authorizes the reasonable compensation of an entity to administer the auction on behalf of the State of Rhode Island.

RGGI Inc. was compensated the following from the auction proceeds:

2013 Allocation Plan – \$32,658.09

2014 Allocation Plan – \$24,791.86

2015 Allocation Plan – \$106,995.64

6. ADMINISTRATIVE EXPENSES

RIGL §23-82-6(a)(6) authorizes the reasonable costs of OER and DEM in administering the RGGI program. OER and DEM were reimbursed the following from the auction proceeds:

2013 Allocation Plan – \$300,000.00 (OER - \$150,000/DEM - \$150,000)

2014 Allocation Plan – \$300,000.00 (OER - \$150,000/DEM- \$150,000)

2015 Allocation Plan – \$1,541,896.43 (OER - \$770,948.22/DEM - \$770,948.22)

7. PLANS

The 2013, 2014 and 2015 Plans for the Allocation and Distribution of Regional Greenhouse Gas Initiative Auction Proceeds can be found by clicking on the link below.

<http://www.energy.ri.gov/rggi/>