STATE OF RHODE ISLAND

OFFICE OF ENERGY RESOURCES

2018 Annual Report

www.energy.ri.gov

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LETTER FROM THE COMMISSIONER

To the Honorable Gina M. Raimondo, Governor of the State of Rhode Island

Honorable Dominick J. Ruggerio, President of the Rhode Island Senate

Honorable Nicholas A. Mattiello, Speaker of the Rhode Island House of Representatives

In accordance with the provisions of Rhode Island General Laws §39-2-1.2(k), I am pleased to provide you with the 2018 Annual Performance and Financial Report of the Office of Energy Resources (OER).

Through your leadership, Rhode Island continues to enhance its status as a dynamic national leader on innovative clean energy programs that are growing jobs, creating new investment opportunities, reducing energy costs for Ocean State families and businesses, shrinking carbon footprints, and ensuring a more reliable and sustainable energy system. OER is pleased to report significant progress in 2017 on multiple fronts in the state's ongoing efforts to achieve a reliable, affordable, and clean energy future. The following represent a selection of highlights from the notable milestones described in this report:

- National recognition for Rhode Island's **Energy Efficiency Programs**, which were ranked third in the nation behind Massachusetts and California;
- Significant progress toward the Governor Gina M. Raimondo's **1000 MW Clean Energy Goal** with the announcement of a 400 MW RFP for renewable energy as well as the selection of Deepwater Wind, the Providence-based clean energy developer, for the construction of a 400 MW offshore wind farm;
- Continued successful implementation of the **Governor's "Lead by Example" Executive Order**, including a 10.1% energy consumption reduction to date across State facilities compared to a 2014 baseline and 50% of electricity consumed by State facilities coming from renewable energy resources; and
- Submission of the **Power Sector Transformation** Phase One Report, with recommendations for transitioning to a new electric utility regulatory model, many of which were subsequently adopted through National Grid's pending distribution rate case settlement agreement.

The results of our collective efforts in Rhode Island are clear. As demonstrated by a recent Clean Energy Jobs Report commissioned by OER and CommerceRI, Rhode Island's clean energy sector is now more than 15,800 jobs strong. Since 2014, clean energy employment in the Ocean State has increased by an impressive 72 per. As our burgeoning clean energy industry achieves new milestones, such as the nation's first offshore wind farm, and policymakers lend continued support for clean energy policies, Rhode Island's clean energy sector will continue to accelerate job and investment growth. Such growth will support the achievement of our state's bold clean energy goals, including Governor Gina M. Raimondo's goal to achieve 1,000 megawatts of clean energy and 20,000 clean energy jobs by 2020.

These on-going efforts serve as a strong foundation to grow our economy and achieve a secure, cost-effective, and sustainable energy future. However, we know that more can be accomplished. OER is committed to working across the Administration and with the General Assembly to implement sound strategies that are aligned with achievement of long-term environmental goals, while acknowledging

the short- and mid-term realities facing our economy and energy system.

As OER continues our work in the coming year and beyond, I look forward to building on progress to date and partnering closely with you to advance our state's energy, economic, and environmental goals. Please do not hesitate to contact me should you have any questions.

Sincerely,

Carol J. Grant
Commissioner

ABOUT THE RHODE ISLAND OFFICE OF ENERGY RESOURCES

The Rhode Island Office of Energy Resources (OER) is the state's lead energy policy agency established pursuant to Rhode Island General Laws (RIGL) § 42-140. OER's mission is to lead Rhode Island to a secure, cost-effective, and sustainable energy future. Housed within the Executive Branch, OER is led by the Commissioner of Energy Resources – Carol Grant – and a staff of committed professionals dedicated to advancing the energy, economic, and environmental interests of the Ocean State.

Operating at the nexus of the many on-going efforts to grow and transform Rhode Island's energy system, OER core functions include, but are not limited to:

Developing, administering, and monitoring programs that promote energy efficiency, renewable energy, alternative fuels, and energy assurance

Offering technical assistance and funding opportunities for end-users including residents, businesses, and public sector entities

Providing policy expertise and support related to strategic energy planning, energy assurance, and clean energy workforce development

Leveraging, coordinating, and aligning inter-agency, public-private, regional, and federal efforts to reach and exceed state energy goals

To create consistent and unified energy policies, OER works with state and quasi-state agencies; stakeholder-driven groups (including the Distributed Generation Board and the Energy Efficiency and Resource Management Council); regional coordinating bodies; and other private and non-profit stakeholders to advance common interests.

Appendix A lists OER's responsibilities under the Rhode Island Energy Resources Act. To learn more about OER, please visit our website: www.energy.ri.gov.

Appendix B provides a financial summary of OER's funding through the System Benefits Charge, and associated staffing, responsibilities, and duties.

EXECUTIVE SUMMARY

2017 marked a year of significant achievement across Rhode Island's energy landscape, while presenting new opportunities to further reduce energy consumption and costs; expand cost-competitive clean energy solutions; and collaborate with other New England states to advance common energy, economic, and environmental interests.

Strong and sustained support for comprehensive energy efficiency and renewable energy policies have stimulated a robust market for clean energy goods and services, making Rhode Island home to a growing clean energy sector. In July 2018, OER released its fourth annual ***Clean Energy Jobs Report***, which found that clean energy employment in the Ocean State has increased by an impressive 72 percent since 2014. Clean energy jobs now support about 15,800 workers across the state. With continued leadership by the Governor and General Assembly, Rhode Island looks forward to further enhancing job growth opportunities throughout the clean energy sector.

In 2017, OER continued to advance Rhode Island as a national energy efficiency leader and innovator. The state was ranked third in the country for its ***nationally-recognized energy efficiency programs,*** achieving savings of 3.00% of electricity consumption and 1.24% of natural gas consumption, respectively, producing over $320 million in economic benefits to Rhode Island. OER and the Rhode Island Infrastructure Bank (RIIB) continued to jointly administer the ***Efficient Buildings Fund (EBF)***, which has funded $28 million in comprehensive energy efficiency and renewable energy projects for local governmental units since its inception. Additionally innovative energy efficiency work spearheaded by OER included efforts to advance building energy labeling, high performance buildings, and provision of energy efficiency services to underserved sectors and communities, including residents of Block Island.

The past year also marked major milestones for the state's renewable energy sector. Major progress toward Governor Gina M. Raimondo's strategic goal of ***1,000 megawatts of clean energy by 2020*** included the announcement of a ***400 MW RFP for clean energy*** and the selection of Deepwater Wind, the Providence-based clean energy developer, to construct a ***new 400 MW offshore wind farm***. Moreover, the ongoing implementation of the ***Renewable Energy Growth Program***, enacted by the General Assembly in 2014, has resulted in the approval of more than 2,300 small solar projects to homeowners across the state; over forty medium, commercial, and large solar projects; and several commercial-scale wind turbines. Finally, the successful ***Solarize Rhode Island*** program, which is administered by OER, continued to engage hundreds of residents throughout the state, reaching a total of 647 signed contracts for 4.4 MW of solar capacity since the program's inception four years ago.

The past year also saw a continuation of OER's

ENERGY 2035: The Rhode Island State Energy Plan

In 2015, the State Planning Council voted to formally adopt **Energy 2035** – the state's first data-driven long-term energy planning and policy document – as an element of the State Guide Plan.

Energy 2035 found that Rhode Island can increase sector fuel diversity, produce net economic benefits, and reduce greenhouse gas emissions by 45 percent (below 1990 levels) by 2035.

To achieve these milestones, the Plan recommended an "all-of-the-above" clean energy framework consisting of 20 strategies in seven major policy areas.

Energy 2035 charges OER with providing annual updates on implementation progress; the third such yearly summary is presented in Appendix C of this Annual Report.

work to reduce public sector energy costs beyond the municipal sector to State government. Per Governor Raimondo's 2015 Executive Order 15-17, State agencies continue to ***"Lead by Example"*** and transition energy supply portfolios and consumption practices toward lower-cost, cleaner, low-carbon solutions. Notable achievements in 2017 included: reducing energy consumption across State facilities by 10.1% compared to 2014 baseline; supporting the installation of 7 new dual port electric vehicle charging stations across the state; launching a Demand Response Program for the State; developing the State's first voluntary building Stretch Code; ensuring that 50% of electricity consumed by State facilities comes from renewable energy resources; and converting State-owned highway streetlights to LED technology .

Also in 2017, OER advanced several targeted initiatives to prepare Rhode Island for the challenges and opportunities posed by the increasing amounts of renewable energy and other "distributed energy resources" on our evolving electric grid. OER partnered with the PUC and DPUC to conduct the ***Power Sector Transformation Initiative***, submitting a report to the Governor on recommendations for a more dynamic utility regulatory framework that will enable Rhode Island to achieve key policy objectives. OER also completed the implementation of a ***System Reliability Procurement Solar Pilot*** in Tiverton and Little Compton to examine the potential for solar technology to reduce peak use on the grid and reduce utility infrastructure upgrade costs.

OER also supported several important initiatives and programs to advance clean energy strategies in the state's heating and transportation sectors. OER completed and issued a ***Renewable Thermal Market Development Strategy***, a stakeholder-informed research inquiry into how Rhode Island can promote renewable thermal fuels—biomass, solar hot water, ground- and air-source heat pumps, advanced biofuels, and biogas. OER worked with the Oil Heat Institute of Rhode Island and representatives from 26 local heating oil and propane companies to develop a ***Fuel Dealer Clean Energy Action Plan***, which identifies opportunities for these energy providers to participate in the state's growing clean energy economy.

On the transportation side, OER oversaw administration of the state's first electric vehicle rebate program — ***Driving Rhode Island to Vehicle Electrification (DRIVE)*** — which provided up to $2,500 off the purchase or lease of a new electric vehicle, based on battery capacity. Before concluding in July 2017, DRIVE issued 254 rebates for electric vehicles, increasing the sale of EV's at 15 different Rhode Island dealerships and generating over $300,000 in new sales tax revenue for the state. In addition, OER implemented the ***Charge Up! Public Sector Vehicle Electrification Incentive Program***, which offers incentives to state agencies and municipalities to install EV charging stations and supports the purchase or lease of electric vehicles (EVs) for integration into public sector fleets.

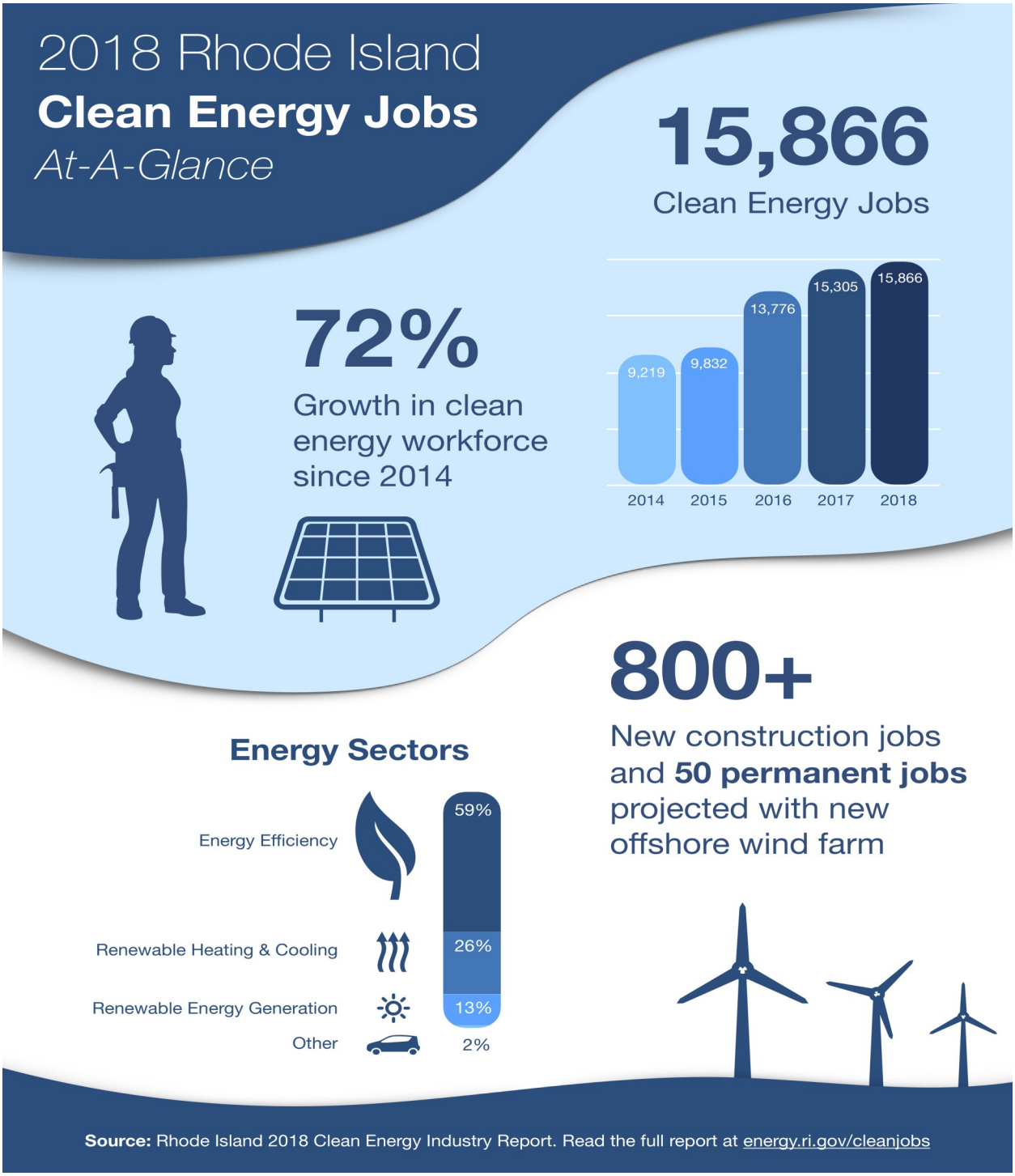
The aforementioned successes and initiatives demonstrate OER's commitment to advancing the state's interests through local actions, however, achievement of Rhode Island's short- and long-term energy, economic, and environmental goals is intricately linked to those of the New England region as a whole. Therefore, in 2017, OER continued to strengthen its collaboration with other New England states on a series of regional energy issues. For example, OER successfully supported Rhode Island's participation in the issuance of the region's first ***Multi-State Clean Energy Request for Proposals (RFP)***, which resulted in the award of 44 MW of new renewable energy projects, forecasted to save local consumers $70 million in energy costs over the next twenty years.

OER looks forward to continuing its work on behalf of the Administration, in collaboration with the General Assembly and other key stakeholders, to advance Rhode Island's energy, economic, and environmental priorities and maintain Rhode Island's position as a national leader on clean energy issues.

CLEAN ENERGY JOBS

Rhode Island continues to show impressive job growth in the clean energy sector, as detailed in the 2018 Rhode Island Clean Energy Jobs Report. Now more than 15,866 jobs strong, Rhode Island's clean energy economy continues to grow. Since 2014, clean energy employment in the Ocean State has increased by an impressive 72 percent.

For more information on the Clean Energy Jobs Report, please visit: www.energy.ri.gov/cleanjobs/.



ENERGY EFFICIENCY

Rhode Island is a nationally recognized leader in energy efficiency and was ranked the third most energy-efficient state in the country in 2017, just behind California and Massachusetts. The state's commitment to energy efficiency not only saves customers money, but drives significant job growth – in 2017, 917 companies were involved with delivering energy efficiency, with 79 percent of those companies having a physical presence in Rhode Island. Throughout 2017, OER continued efforts to advance the state's leadership in energy efficiency by promoting access to energy efficiency in underserved sectors and communities, collaborating on leading-edge program evaluations, and supporting efforts to transform building and appliance markets.

LEAST-COST PROCUREMENT ENERGY EFFICIENCY PROGRAMS

In 2017, OER allocated $600,000 from Regional Greenhouse Gas Initiative (RGGI) funds to support the use of Rhode Island's voluntary Commercial Stretch Code (see page 54 of this report for more information) and to support a program to encourage the use of air source heat pumps and other energy efficiency measures in conjunction with solar PV in affordable housing units (this effort is expected to launch later in 2018). In both cases, the allocated RGGI dollars will be leveraged with System Benefit Charge (SBC) funds which are administered by the utility and are overseen by OER, the Energy Efficiency and Resource Management Council (EERMC), the Division of Public Utilities and Carriers (DPUC), and the Public Utilities Commission (PUC). SBC dollars fund Rhode Island's energy efficiency programs. In 2017, Rhode Island's energy efficiency programs helped ratepayers save 232,023 megawatt-hours (MWh) of electricity (3.00% of 2012 electric consumption) and 468,211 million Btu (MMBtu) of natural gas (1.24% of 2012 natural gas consumption), producing over $320 million in economic benefits to Rhode Island. For more information on the state's energy efficiency programs, please visit: www.rieermc.ri.gov.

EFFICIENT BUILDINGS FUND

The Efficient Buildings Fund (EBF), established under Rhode Island General Laws, Chapter 46-12.2-4.2, launched in December 2015 and continues to be jointly administered by OER and the Rhode Island Infrastructure Bank (RIIB). The fund provides financing to municipal buildings, school facilities and quasi-governmental agency buildings pursuing cost-effective energy efficiency and/or renewable energy projects. The program prioritizes deep energy savings projects where the total energy savings achieved by a project exceeds the total project and debt service costs. OER is primarily responsible for soliciting, scoring and ranking applications to create a Project Priority List.

The Efficient Buildings Fund (EBF) has funded $28 million in comprehensive energy efficiency and renewable energy projects since inception. OER and Rhode Island Infrastructure Bank (RIIB) recently held another project application round in April 2018.

The Infrastructure Bank and OER have partnered with National Grid to provide energy audits to municipalities interested in understanding opportunities to make investments in energy efficiency at public buildings. EBF has funded projects in 35 municipal buildings across ten municipalities. Significant savings can be attributed to energy savings from streetlight conversions. Many participating municipalities have used the streetlight savings to invest in deep energy retrofit projects in their buildings.

In the fall of 2017, legislation was passed that allows the Infrastructure Bank to lend to all quasi-state entities and public universities through EBF. In 2018, the Governor's budget proposes that Housing Aid reimbursement for projects financed through the EBF be on par with projects financed through Rhode Island Health Education Building Corporation. For more information on the EBF, please visit: www.energy.ri.gov/RIEBF.

U.S. DEPARTMENT OF ENERGY STATE ENERGY PROGRAM GRANT: ENERGY METRICS TO PROMOTE RESIDENTIAL ENERGY SCORECARDS IN STATES (EMPRESS) PROJECT

Building labeling tools produce simple metrics or ratings to summarize a building's overall energy efficiency. These labels can allow building owners, renters, and buyers to see and compare the energy efficiency of different buildings. Currently, OER is leading a project funded by the U.S. Department of Energy's State Energy Program, to harmonize two of the dominate residential energy labeling tools in the U.S. – DOE's Home Energy Score and RESNET's Home Energy Rating System (HERS). The project started in January 2017 and is scheduled to be complete by the end of 2018. If successful, the project will ensure that metrics generated by either tool are comparable and translatable, and that State Energy Offices, the real estate market, and other stakeholders have access to information on home energy labeling best practices including case studies and guidance on how to pursue home energy labeling policies and/or programs.

Project partners include the Arkansas Energy Office, Massachusetts Department of Energy Resources, Missouri Department of Economic Development (Energy Division), Oregon Department of Energy, National Association of State Energy Officials, Earth Advantage, Vermont Energy Investment Corporation, and Energy Futures Group. For questions on building labeling, please contact Becca Trietch at Becca.Trietch@energy.ri.gov.

ZERO ENERGY AND HIGH–PERFORMANCE BUILDINGS

Zero-energy buildings generate as much energy as they consume. These buildings not only save owners money on utility costs, but also provide a myriad of benefits including improved comfort, increased durability, and better indoor air quality. These benefits have been shown to lead to improved health, education, and productivity outcomes for occupants of various building types.

In 2016, National Grid led the Rhode Island Zero-Energy Building Task Force consisting of key stakeholders from the State, associations, architects/engineers, and developers. The Task Force developed and issued a whitepaper report outlining a 20-year roadmap for zero-energy buildings to contribute to the Energy 2035 goal of reducing greenhouse gas emissions by 45% by 2035. The roadmap identifies opportunities including stakeholder collaboration, incentives, education, financing and policies that will help to foster the growth of the residential and commercial Zero-Energy Building market in Rhode Island.

Working on recommendations from the report, OER established a "Zero-Energy Buildings Champion" in 2017 to lead a Zero-Energy Buildings Working Group. The mission of the Working Group is to bring together stakeholders and take action to transform the market. Notably, the Working Group is currently concentrating on building out educational and informational events, such as tours and trainings, as well as serving as a focus group for incorporating zero-energy buildings into National Grid's programs. For more information on Zero Energy Buildings, please contact Carrie Gill at Carrie.Gill@energy.ri.gov.

FARM ENERGY EFFICIENCY PROGRAM

Recognizing that farmers play a vital role in the economy, culture, 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 funds to jump-start a farm-specific energy efficiency program in 2015.

The Farm Energy Efficiency Program offers Rhode Island agribusinesses incentives for prescriptive energy efficiency measures. Program participants receive a free on-site energy assessment and a report detailing recommended energy-efficient improvements. Farmers or agribusiness owners can then choose to install any number of recommended electric or

delivered fuels measures. Delivered fuels measures are eligible for incentives equal to 75% of their installed costs. Electric measure incentives vary depending on the application, but any approved electric measure cost not covered by an incentive can be paid back, interest free, through National Grid's on-bill payment system provided that funds are available. In 2017, 26 Rhode Island farms received no-cost, farm-specific energy assessments.

Working with the Department of Environmental Management, Commerce RI, National Grid, USDA Rural Development, and other organizations, OER continues to streamline the ability for farmers to leverage the farm energy efficiency program with other farm energy programs and grants. For more information on the Farm Energy Efficiency Program, please contact Carrie Gill at Carrie.Gill@energy.ri.gov.

BLOCK ISLAND SAVES PILOT PROGRAM

Block Island Saves was a pilot program to deliver energy efficiency assessments, education, incentives, and rebates to New Shoreham residents and small businesses. The New Shoreham community faced unique energy challenges prior to 2017, including high energy prices stemming from electricity generation powered by imported and price-volatile diesel. The recent construction of North America's first offshore wind farm three miles off the coast of Block Island also resulted in connecting the island with the mainland electric grid. This connection has helped stabilize electric prices while strengthening reliability. However, reducing energy use on the island remains critical to ensuring long-term energy affordability and reliability for this important and unique community.

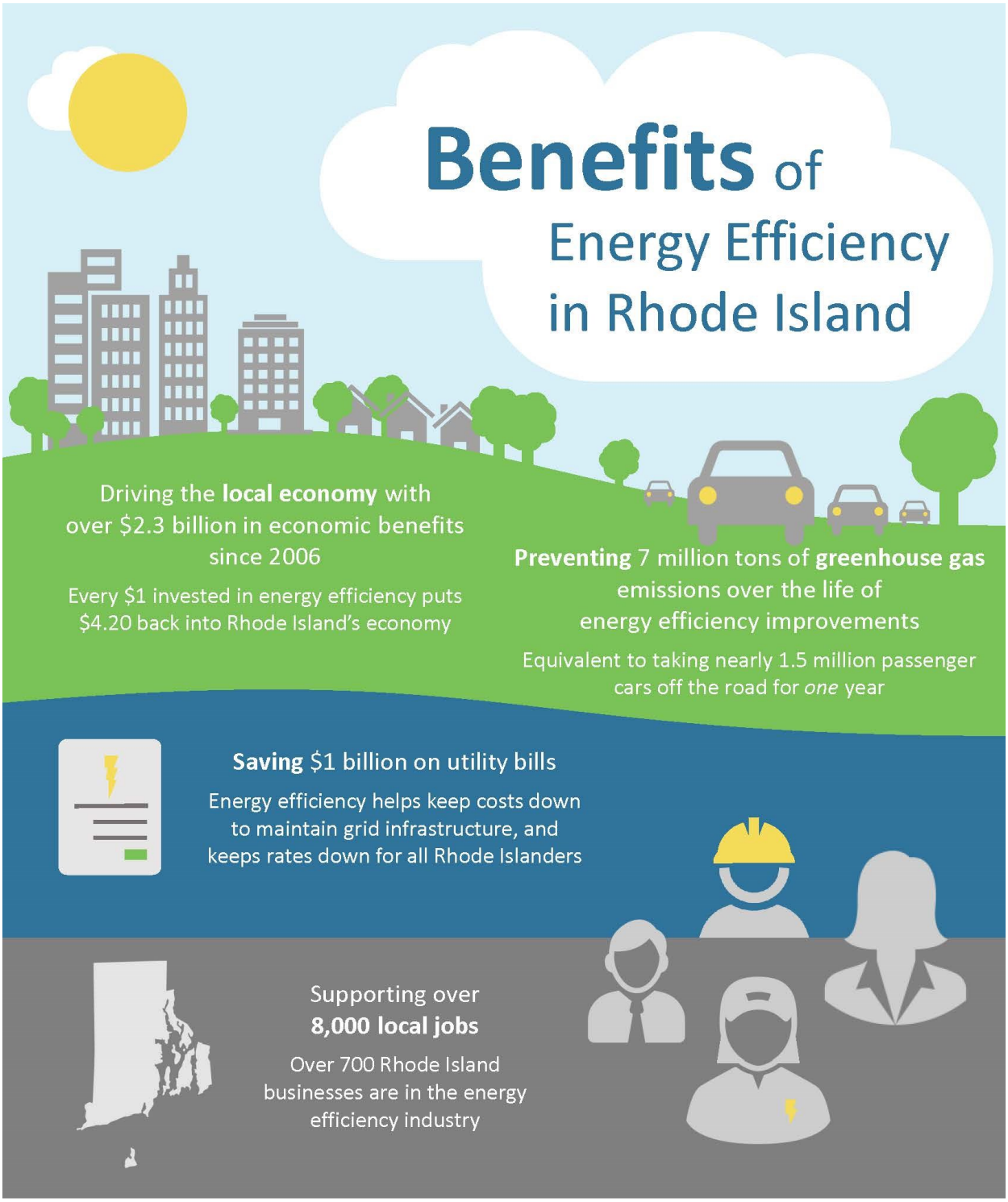
OER collaborated with National Grid to leverage best practices for program development and energy efficiency offerings were carefully chosen to align with existing programs available elsewhere in Rhode Island.

Over the course of the pilot, 79 residents and 31 businesses received free energy assessments, along with rebates and incentives for energy efficiency upgrades. These energy efficiency improvements will save 3,600 MWh of electricity over the lifetime of the improvements (equivalent to the electricity needed to power over 500 Rhode Island homes for one year), in addition to 4,800 MMBtu of oil and 2,300 MMBtu of propane.

These energy savings also fostered important reductions in greenhouse gas emissions – a reduction of 2,400 tons of CO_2 equivalent over the lifetime of the efficiency upgrades. This is equivalent to taking 470 passenger cars off the road for a year or growing nearly 57,000 tree seedlings for 10 years. Participants were able to decrease their energy bills, too. In total, program participants are saving an aggregate $597,968 (residential) and $714,396 (business) over the lifetime of the efficiency upgrades.

Block Island Saves had a benefit-cost ratio of 3.65 for the residential program and 1.64 for the small business program, for an aggregate ratio of 2.23 for the entire pilot. In other words, Block Island Saves was a cost-effective program with each dollar spent on Block Island Saves generating $2.23 in economic and environmental benefits.

The final report on the Block Island Saves Pilot Program is available on OER's website. For more information on the Block Island Saves Energy Efficiency Program, please contact Carrie Gill at Carrie.Gill@energy.ri.gov.



STATE OF RHODE ISLAND
ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

The Rhode Island Energy Efficiency & Resource Management Council (EERMC) *is a group of stakeholders that serves all customers to ensure the utility is investing in the least expensive resource – energy efficiency. Learn more at www.rieermc.ri.gov*

PROJECT HIGHLIGHT:

National Energy Education Development (NEED) Project

For over twenty years, the NEED Project has offered Rhode Island students and teachers a hands-on curriculum that brings the science of energy out of the text book. Educating and engaging our youth on current and emerging energy issues is critical given rapid advances in technology; job growth opportunities in the clean energy sector; and the urgency associated with climate change.

In June 2017 OER hosted the RI ceremony for NEED's Youth Awards Program for Energy Achievement. The ceremony recognized the outstanding work done by students in K-12 schools. Students and teachers from nine schools* submitted portfolios in April documenting their energy activities throughout the school year. The portfolios were judged at the state level, with the state winners advancing to the national competition. The National Award winners received their awards in late June in Washington DC. RI has had many National Award winners over the years and four in 2017.

* Gilbert Stuart Middle School (Providence), J.H. Gaudet Middle School (Middletown), Scituate Middle School, Kickemuit Middle School (Warren), John F. Deering Middle School (West Warwick), Alan Shawn Feinstein Middle School of Coventry, Washington Oak Elementary School (Coventry), Western Coventry Elementary School and Scituate High School .

Pictured above: Students from John F. Deering Middle School receiving their award for outstanding energy achievement in NEED's Youth Awards Program.

RENEWABLE ENERGY

Thanks to the leadership of policymakers, Rhode Island is home to a rapidly-growing renewable energy industry. Strong programs such as the Renewable Energy Growth Program and Solarize Rhode Island are stimulating the deployment of wind and solar projects throughout the state.

The promotion of renewable energy contributes to local business and job growth; offers residents and communities an opportunity to stabilize their energy costs; and helps the state lower its carbon footprint.

In 2017, OER led efforts to expand customer access to renewable energy, bolster industry and job growth, and support the market through targeted guidance and engagement.

GOVERNOR'S 1,000 BY '20 CLEAN ENERGY GOAL

In March 2017, Governor Gina M. Raimondo announced a strategic goal to achieve 1,000 megawatts of clean energy by the end of 2020, increasing the amount of clean energy in the state by ten times. The Governor's ambitious goal reinforces the ongoing commitment of Rhode Island policymakers to a clean energy future. OER is charged with tracking progress towards meeting the 2020 goal, which will include energy from a broad portfolio of clean energy resources, including offshore and onshore wind and solar.

The state made significant progress toward achieving the 1,000 MW goal in 2017, including a joint announcement with Massachusetts in May 2018 of the largest procurement of offshore wind in the nation's history. As part of this competitive process, Rhode Island selected Deepwater Wind, the Rhode Island-based clean energy developer, to construct a new, 400 MW offshore wind farm — more than ten times the size of the Block

In May 2018, Governor Gina M. Raimondo announced that Rhode Island selected Deepwater Wind, the Rhode Island-based clean energy developer, to construct a new, 400 MW offshore wind farm — more than ten times the size of the Block Island Wind Farm.

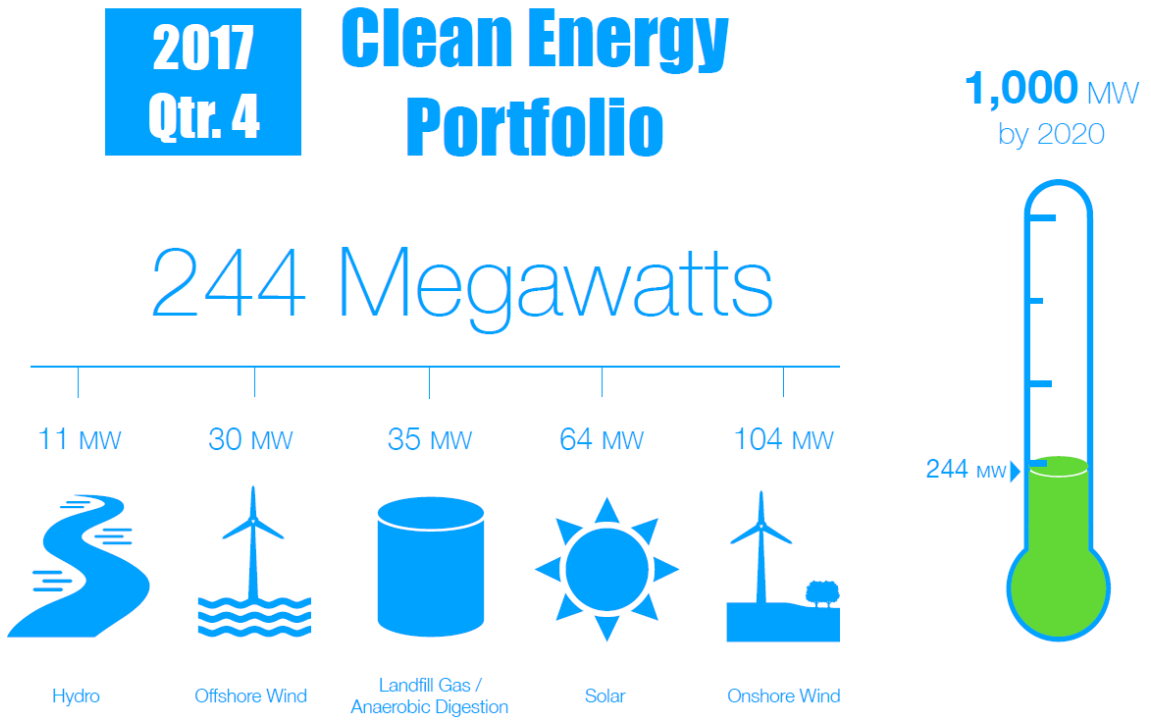
Island Wind Farm. Additionally, Governor Raimondo announced in February 2018 a separate 400 MW request for proposals for renewable energy that will be issued by the state's utilities in the summer of 2018. As of December 31, 2017, Rhode Island had achieved 244 MW of clean energy, comprising 4,279 individual projects. This represents an increase of 111 MW and 2,129 projects over the course of the calendar year.

For more information on the Governor's 1000 by '20 Clean Energy Goal, please visit: www.energy.ri.gov/renewable-energy/governor-clean-energy-goal.php.

SOLARIZE RHODE ISLAND

In 2017, OER continued its partnership with the Renewable Energy Fund at Commerce RI and non-profit SmartPower to implement the state's fourth year of Solarize Rhode Island campaigns across selected municipalities. Solarize Rhode Island seeks to increase the adoption of small-scale solar through targeted marketing and education campaigns. 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.

Municipalities that participated in the program in 2017 included Cranston and Charlestown as well as Bristol, Barrington, and South Kingstown who ran the campaign in previous years. To date, the four program years have accumulated 647 signed contracts for 4.4 MW of solar capacity. Additionally, thousands of Rhode Island residents and business owners have been educated about the economic and environmental benefits of solar electricity, energy efficiency and other clean energy technologies. A sixth Solarize Rhode Island campaign kicked off in March 2018. For more information on Solarize Rhode Island, please visit: www.energy.ri.gov/policies-programs/programs-incentives/solarize-ri.php.



As of December 31, 2017, Rhode Island had achieved 244 MW of clean energy, comprising 4,279 individual projects. This represents an increase of 111 MW and 2,129 projects over the course of the calendar year.

RENEWABLE ENERGY GROWTH PROGRAM

The Renewable Energy Growth (REG) Program launched in June 2015 to support the deployment of locally-based wind, solar, anaerobic digestion and small scale hydropower projects. The REG Program is administered by National Grid with oversight by OER and the Distributed Generation Board, and provides 15 or 20 year tariff payments to finance renewable energy systems for homeowners, businesses and municipalities. In turn, the construction and operation of these new clean energy resources reduce and stabilize consumer energy costs, create job opportunities for clean energy workers, and help offset demand for more carbon-intense energy resources. In the first four years of program implementation, tariff payments were approved for more than 2,300 small solar projects to homeowners across the state; over forty medium, commercial, and large solar projects; and several commercial-scale wind turbines. For more information on the REG Program, please visit: www.energy.ri.gov/policies-programs/programs-incentives/reg-program.php.

LEAD BY EXAMPLE

Under Governor Raimondo's Executive Order 15-17, State agencies will "Lead by Example" and transition energy supply portfolios and consumption practices toward lower-cost, cleaner, low-carbon solutions, consistent with Rhode Island's economic, energy and environmental goals.

Among the Governor's directives, OER has been tasked with overseeing and coordinating activities across State government to reduce electric consumption by at least 10 percent below FY14 levels by the end of FY19, identify opportunities to support a full transition toward renewable energy sources by 2025, support the integration of clean transportation solutions into the State's fleet, and establish a stretch building code for use in all State construction and renovation projects.

Since 2015, OER has been collaborating with multiple State agencies to pursue projects such as solar installations, LED streetlight conversions, EV charging infrastructure installations, and building energy efficiency projects including HVAC and lighting upgrades.

Key 2017 Lead by Example accomplishments include:

- Reducing the energy consumption across State facilities by 10.1% compared to 2014 baseline.
- Supporting the installation of 7 new dual port electric vehicle charging stations across the State.
- Development of Enterprise Level Building Automation System.
- Launching a Demand Response Program to reduce peak energy demand and generate revenues for the State.
- Developing the State's first voluntary building Stretch Code.
- Ensuring that 50% of electricity consumed by State facilities comes from renewable energy resources.
- Converting State-owned highway streetlights to LED technology .
- Development and management of competitive electricity and natural gas supply contracts for all state agencies.
- Development of a utility centralized payment system for all state agencies that saves money by avoiding late fees and increasing staff efficiency.
- Procurement of a web-based utility bill management software to track and audit energy expenses.

ENERGY MANAGEMENT

OER is supporting State agencies by making energy consumption and cost data accessible online. OER has centralized State agency energy data and billing for electric, natural gas, and delivered fuels. By centralizing these bills, OER is helping to improve energy usage and cost forecasting, streamline payment processes, and foster the development of innovative strategies to meet the State's energy reduction targets. In 2017, the Office procured a web-based utility bill management software to track and audit energy expenses and provide State agencies with better online data access. OER works with the vendor to setup the application and the expectation is to have the utility management software up and running by the end of 2018.

ENERGY EFFICIENCY PURCHASING MECHANISMS

OER, in partnership with the Division of Purchases, has developed three purchasing mechanisms to support energy efficiency, renewable energy projects and transportation infrastructure. Mas-

ter Price Agreement (MPA) 508 provides state agencies and other public entities with access to vendors that can deliver turnkey energy efficiency projects. Master Price Agreement (MPA) 509 provides state agencies and other public entities turnkey operators (equipment and services) of Electric Vehicle Supply Equipment (EVSE). Continuous Recruitment (CR) 44 gives access to renewable energy installers that can provide small to medium-scale solar installations. All purchasing mechanisms expedite project implementation by clearly defining proposal requisition processes and providing access to pre-qualified vendors.

ENERGY PROCUREMENT

OER, working in collaboration with other divisions in the Department of Administration, recently conducted a competitive electric supply auction for all Executive agencies, Judicial, RIC/CCRI, and the quasi-state Resource Recovery Corporation. Four electricity suppliers qualified to enter the auction and competed against each other to give the State the best price for electricity. As a result, the State received a fixed cost of $0.07738 per kWh for a three-year term, ensuring that 50% of electricity consumed by State facilities comes from renewable energy resources. The signed electricity supply contract will provide the State with price and budget stability, and thereby reduce its exposure to costly energy price volatility. Similar efforts have been conducted for the state's natural gas supply, and OER continues to explore options for further aggregating demand and to leverage public sector economies of scale for future energy supply procurements.

STRATEGIC ENERGY MANAGEMENT PLAN

OER is providing administrative, technical, and other support resources to assist public sector entities with scoping, procuring, financing, and implementing cost-effective energy efficiency projects at their facilities. To do this, OER has partnered with National Grid to identify priority

Under Governor Gina M. Raimondo's Executive Order 15-17, the State's Lead by Example initiative is promoting the adoption of clean energy measures across public sector facilities and state agencies.

projects, conduct building energy audits, and streamline the use of utility incentive and rebate programs. In 2017, 22 energy audits and 3 retro-commissioning studies were provided to state agencies to assist the process of developing the scope of work for deep energy efficiency retrofits.

RENEWABLE ENERGY PROJECTS

Consistent with the Governor's Lead by Example and 1,000 MW clean energy goals, OER is spearheading efforts to increase the adoption of renewable energy resources across State facilities. Investments in both small and large-scale renewables, such as rooftop or ground-mounted solar, offer the potential to reduce long-term energy costs and exposure to price volatility, support local clean energy jobs, and "green-up" state agencies/facilities. Starting in 2016, OER began providing administrative, technical, and other support resources to help State facilities move forward with renewables. To date, five solar installations are operational: three on the Capitol Hill complex, one in the new Veterans home in Bristol and one in the new Attorney General building in Cranston. Additional installations, including PV carports and a large-scale ground-mounted solar array are being reviewed for other state-owned locations.

LEAD BY EXAMPLE AWARDS

In April 2018, the Office of Energy Resources recognized twelve (12) state government agencies, quasi-public agencies and municipalities for their renewable energy and energy efficiency achievements at its second Lead by Example Energy Awards ceremony at the Rhode Island State House. OER looks forward to recognizing other Lead by Example projects next year.

For more information on Lead by Example, please visit: www.energy.ri.gov/policies-programs/lead-by-example/.

The State unveiled 900 new solar panels on Capitol Hill rooftops as part of the Lead by Example initiative. The solar arrays will reduce the State's carbon footprint by the equivalent of taking 56 cars off the road each year.

Above: Workers from Newport Renewables install solar panels on the roof of the Powers building.
Below: Aerial photo of the completed solar project on Powers, Cannon and Department of Transportation.

GRID OF THE FUTURE

Rhode Island's energy system is at the cusp of a fundamental long-term transformation. Our electric grid is becoming increasingly more complex as consumers adopt distributed energy resources, including energy efficiency, demand response, renewable energy, and energy storage, among others. The changing nature and growth of customer resources holds significant implications for the state's electric distribution system, grid planners and operators, and utility regulators.

Governor Gina M. Raimondo directed OER to collaborate with partner agencies to develop recommendations for an updated utility regulatory framework. Accordingly, OER undertook several initiatives in 2016 to propose recommendations and policies to address the challenges and opportunities posed by our evolving electric grid.

POWER SECTOR TRANSFORMATION INITIATIVE

In November 2017, OER, the Division of Public Utilities and Carriers (DPUC), and the Public Utilities Commission (PUC), submitted an inter-agency "Rhode Island Power Sector Transformation (PST) Phase One Report" to Governor Gina M. Raimondo, in response to her March 2017 request to collaborate in the development of a more dynamic utility regulatory framework that will enable Rhode Island to achieve key policy objectives. The PST report capped off an eight-month long process bringing together Rhode Island stakeholders, industry experts, and decision makers to discuss key issues and craft proposals for near-term implementation. The PST report provided principles and recommendations relative to the four key areas of: utility business model; grid connectivity and functionality; distribution system planning; and beneficial electrification of heating and transportation.

Governor Gina M. Raimondo has challenged state agencies to design a new regulatory framework for Rhode Island's electric system, engaging hundreds of stakeholders in the process.

Following the submission of the PST report, National Grid filed an electric distribution rate case with the PUC to request the first change to electricity delivery rates since 2012. National Grid's filing addressed many of the topics identified in the PST report, including electric transport, electric heat, energy storage, grid modernization, advanced metering, and performance incentive mechanisms.

In May 2018, National Grid, the DPUC, OER, and a number of other parties submitted a settlement agreement relative to National Grid's rate case at the PUC, which will be reviewed and ruled on by September 2018.

For more information on the Power Sector Transformation Initiative, please visit: www.ripuc.ri.gov/utilityinfo/electric/PST_home.html.

SYSTEM RELIABILITY PROCUREMENT SOLAR DISTRIBUTED GENERATION PILOT

OER's System Reliability Procurement (SRP) Solar Distributed Generation (DG) Pilot is an ongoing initiative to explore how distributed solar photovoltaics can provide value to Rhode Island's electric grid by reducing peak loads on the distribution system. Through the pilot, OER managed a Solarize campaign and an open market solicitation to accelerate solar deployment in the towns of Tiverton and Little Compton, helping to defer the need for a new substation feeder estimated by National Grid to cost $2.9 million. In 2016, OER received a "State Leadership in Clean Energy" award from the Clean Energy States Alliance for the Pilot. In 2018, OER completed an evaluation of the pilot, which showed that orienting solar arrays to the west successfully increased solar production during periods of high electricity demand on the local distribution system. However, despite these overall savings, maximum summer peaks still occurred late in the day relative to solar system output. For more information on the SRP Solar DG Pilot, please visit: www.energy.ri.gov/electric-gas/future-grid/oer-system-reliability-solar.php.

HEATING

Heating and thermal energy use accounts for one-third of Rhode Island's statewide energy consumption. Rhode Island's thermal sector accounts for approximately $740 million of energy costs and 3.4 million tons of CO_2 emissions 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. In 2017, OER spearheaded efforts to develop strategies for expanding access to energy efficient and clean energy solutions in the heating sector. 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.

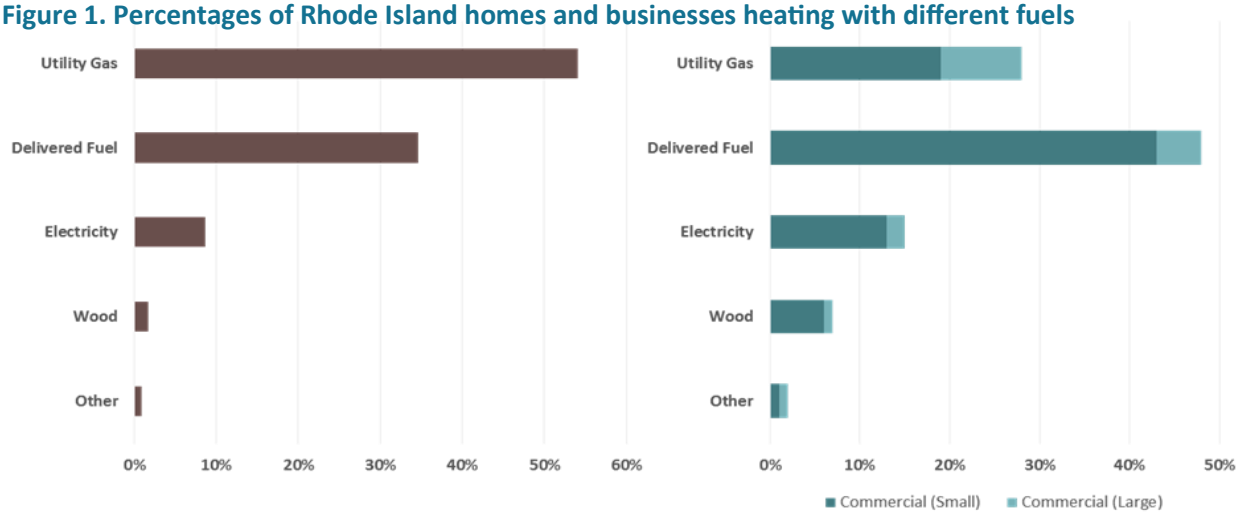
RENEWABLE THERMAL MARKET DEVELOPMENT STRATEGY

In January 2017, OER released the Rhode Island Renewable Thermal Market Development Strategy. The Strategy was developed in 2016 with input from a stakeholder-based task force, and assesses how Rhode Island can promote renewable thermal fuels—biomass, solar hot water, ground- and air-source heat pumps, advanced biofuels, and biogas. The Strategy demonstrates that deployment of renewable thermal technologies can provide net economic and environmental benefits to the state, and provides a suite of recommendations for encouraging broader market adoption. For more information on the Renewable Thermal Market Development Strategy, please visit: www.energy.ri.gov/reports-publications/past-projects/ri-renewable-thermal-market-development-strategy.php.

FUEL DEALER CLEAN ENERGY ACTION PLAN

In 2017, OER worked with the Oil Heat Institute of Rhode Island and representatives from 26 local delivered fuels (heating oil and propane) companies to identify opportunities for these energy providers to participate in the state's growing clean energy economy. Fuel dealers face an increasingly challenging business environment, however, these companies are also uniquely positioned to diversify into the clean energy sector given their industry knowledge, technical skills, and customer relationships. The Fuel Dealer Clean Energy Action Plan developed by OER and OHI identifies a series of priority recommendations to address opportunities for delivered fuels providers in clean energy marketing, workforce development, and market access.

Figure 1. Percentages of Rhode Island homes and businesses heating with different fuels



Rhode Island's thermal sector fuel consumption profile is dominated by natural gas and delivered fuels. *(Source: Energy Information Administration)*

TRANSPORTATION

Transportation is the costliest energy sector in Rhode Island, accounting for about 40 percent of statewide energy expenditures. The sector also remains heavily dependent on petroleum-based fuels such as gasoline and diesel, with major implications for long-term environmental sustainability. Annually, approximately $970 million is spent on transportation-related energy costs, and the sector releases 4 million tons of CO_2 into the atmosphere. Throughout 2017, OER undertook new efforts to promote the use of alternative and clean transportation solutions that can reduce overall energy consumption and long-term consumer costs; mitigate the transportation sector's impact on our environment; and create new opportunities for industry growth.

DRIVING RHODE ISLAND TO VEHICLE ELECTRIFICATION

OER successfully completed the DRIVE program on July 10th, 2017. This first come, first serve rebate program was designed to help kick start sales of electric vehicles (EVs) within Rhode Island. Originally launched as a $200,000 pilot program, the program was expanded due to high demand. Ultimately, the program issued rebates for 254 EVs in RI, expending a total of $575,000 in the year and a half the program was active. The incentive program helped increase the sale of EVs at 15 different RI dealerships, generating over $300,000 in new sales tax revenue for the state. It also increased EV adoption by over 50%. For more information on DRIVE, please visit: www.drive.ri.gov.

Tony Arujo, Sr. Manager at Providence Water Authority, standing with one of the three Chevrolet Bolt EVs the agency purchased through Charge Up!

Issued or reserved rebates for **254** new vehicles

Increased RI electric vehicle adoption by **55%**

Helped generate over **$300,000** in new sales tax revenue

Vehicles purchased from **15** different RI dealerships

CHARGE UP!

Charge Up! is a public-sector vehicle electrification program run by OER that incentivizes state and municipal agencies to go zero emission within their fleets. The program began in July 2016 under the direction of Governor Raimondo's Lead by Example Executive Order. Charge Up! offers up to $75,000 for the purchase and installation of electric vehicle supply equipment (EVSE) and the procurement of EVs. As of December 31st, 2017, six projects were completed with a total investment of $263,199.11. The program has added 13 new electric vehicle charging stations, serving up to 24 vehicles. Applicants have included the Town of Coventry, the Division of Public Utilities and Carriers (DPUC), Providence Water Authority, and RI Bridge and Turnpike Authority, among others.

In addition to the charging infrastructure, 5 new EVs have been purchased as part of the program, replacing conventional internal combustion engine vehicles. Approximately $460,000 in funding remains, with strong interest for additional infrastructure from the University of Rhode Island, the Department of Transportation, and Town of South Kingstown. To learn more about Charge Up!, please visit: www.energy.ri.gov/transportation/ev/charge-up.php.

ELECTRIC VEHICLE RIDE AND DRIVE EVENTS

OER partnered with Ocean State Clean Cities (OSCC), Plug-In America, the Department of Environmental Management, Department of Transportation, and Department of Health to host two EV ride and drive events for Rhode Islanders. The first took place on August 30, 2017 at the Capitol Hill Complex. During the lunch hour, state employees were exposed to multiple makes and models of EVs, with static displays and test drives. The event was aimed at increasing the exposure of zero-emission vehicles at the workplace, and was a big success. Over 100 ride-and-drives were given throughout the day, reaching many people who had never experienced driving an EV before. Separately, OER and the partner agencies listed above held the fourth annual Drive Electric Week event at the Misquamicut Fall Festival in Westerly, RI. Over 4,000 attendees were treated to an electric vehicle showcase, allowing people to get a hands-on experience with various makes of electric cars. Thirty people signed up for test drives . For more information, please contact Ryan Cote at Ryan.Cote@energy.ri.gov.

Figure 2. Electric Vehicles Registered in Rhode Island

Year	Total Number of Registered Electric Vehicles
2014	398
2015	538
2016	757
2017	1,249

Electric vehicle registrations increased by 65% in 2016, with total registered EV's growing from 757 to 1,249. *(Source: Rhode Island Department of Motor Vehicles)*

Public charging stations installed at Coventry's public library are one of the projects funded through the Charge Up! Program, which helps state and municipal agencies to go zero emission within their fleets.

REGIONAL WORK

OER advances Rhode Island's energy policy interests through local actions that leverage best practices, foster innovation, and drive success throughout the state's portfolio of clean energy initiatives and programs. However, achievement of Rhode Island's short- and long-term energy and environmental goals are also intricately linked to its place within the New England region. Rhode Island is part of a highly-integrated energy system with significant implications for state and regional economic competitiveness, investment and job growth opportunities, wholesale- and retail-level energy costs, and greenhouse gas reduction goals. The New England states have a long history of fruitful collaboration and coordination on energy issues to achieve shared policy goals, and OER continues to represent Rhode Island's interests in that regard.

MULTI-STATE CLEAN ENERGY REQUEST FOR PROPOSALS

OER has actively supported Rhode Island's participation in the issuance of the region's first Multi-State Clean Energy Request for Proposals (RFP). Released to the marketplace in November 2015, OER worked in collaboration with National Grid, Connecticut and Massachusetts state agencies, and other regional utilities to develop an RFP that could identify clean energy and/or clean energy transmission projects that offer the potential for the procuring states to meet their shared clean energy goals in a cost-effective manner consistent with individual, state-specific procurement statutes. The soliciting parties in the three states decided to act jointly to open the possibility of procuring large-scale projects that no state could procure if it acted unilaterally. This driving of economies of scale to meet shared economic, energy, and environmental interests is just one example of how OER leverages state and regional strategies to advance state policy goals.

The three states collectively selected projects that represent approximately 460 MW of clean energy for the New England market. In February 2018, the Rhode Island Public Utilities Commission approved eight long-term contracts for approximately 44 MW of new renewable capacity, advancing Governor Raimondo's goal of a ten-fold increase in the state's clean energy portfolio by 2020. Importantly, these renewable projects are forecasted to save local consumers $70 million in energy costs over the next twenty years.

REGIONAL COLLABORATION THROUGH THE NEW ENGLAND STATES COMMITTEE ON ELECTRICITY

Rhode Island works closely with its sister states through the New England States Committee on Electricity (NESCOE). NESCOE fosters regular communication among the six New England states on a variety of dynamic, electricity-related initiatives. This entity exemplifies the many benefits of regional coordination and cooperation, allowing the states to share ideas and technical resources on matters of significant consequence to New England citizens. Through this collaboration, the states often speak with one voice as the region seeks to fulfill common energy goals and policy mandates. Some of the key issues advanced through NESCOE in 2017 included:

- Engagement with ISO-New England, NEPOOL, and other stakeholders to determine how public policy goals can best be integrated into wholesale energy markets (IMAPP);
- Working to ensure that state-level investments in clean energy solutions, such as energy efficiency and renewable distributed generation, are properly accounted for in New England's wholesale markets and regional system planning processes;
- Representing the policy and economic interests of state and regional consumers before ISO New England, the Federal Energy Regulatory Commission (FERC), the United States Department of Energy (DOE), and other entities on electric wholesale market issues; and
- Improving clarity, consistency, and transparency in regional electric transmission planning processes planning processes.

Appendix A:

Rhode Island Energy Resources Act

Appendix A: Rhode Island Energy Resources Act

OER's purposes under the Rhode Island Energy Resources Act are to:

(1) Develop and put into effect plans and programs to promote, encourage, and assist the provision of energy resources for Rhode Island in a manner that enhances economic well-being, social equity, and environmental quality;

(2) Monitor, forecast, and report on energy use, energy prices, and energy demand and supply forecasts, and make findings and recommendations with regard to energy supply diversity, reliability, and procurement, including least-cost procurement;

(3) Develop and to put into effect plans and programs to promote, encourage and assist the efficient and productive use of energy resources in Rhode Island, and to coordinate energy programs for natural gas, electricity, and heating oil to maximize the aggregate benefits of conservation and efficiency of investments;

(4) Monitor and report technological developments that may result in new and/or improved sources of energy supply, increased energy efficiency, and reduced environmental impacts from energy supply, transmission and distribution;

(5) Administer the programs, duties, and responsibilities heretofore exercised by the state energy office, except as these may be assigned by executive order or the general laws to other departments and agencies of state government;

(6) Develop, recommend and, as appropriate, implement integrated and/or comprehensive strategies, including at regional and federal levels, to secure Rhode Island's interest in energy resources, their supply and efficient use, and as necessary to interact with persons, private sector, non-profit, regional, federal entities and departments and agencies of other states to effectuate this purpose;

(7) Cooperate with agencies, departments, corporations, and entities of the state and of political subdivisions of the state in achieving its purposes;

(8) Cooperate with and assist the state planning council and the division of state planning in developing, maintaining, and implementing state guide plan elements pertaining to energy and renewable energy;

(9) Coordinate the energy efficiency, renewable energy, least cost procurement, and systems reliability plans and programs with the energy efficiency resource management council and the renewable energy coordinating board;

(10) Participate in, monitor implementation of, and provide technical assistance for the low-income home energy assistance program enhancement plan established pursuant to § 39-1-27.12;

(11) Participate in and monitor the distributed generation standard contracts program pursuant to chapter 39-26-2;

(12) Coordinate opportunities with and enter into contracts and/or agreements with the economic development corporation associated with the energy efficiency, least-cost procurement, system reliability, and renewable energy fund programs;

(13) Provide support and information to the division of planning and the state planning council in development of a ten (10) year Rhode Island Energy Guide Plan, which shall be reviewed and amended if necessary every five (5) years;

(14) Provide funding support if necessary to the renewable energy coordinating board and/or the advisory council to carry out the objectives pursuant to chapter 42-140-3;

(15) Advise and provide technical assistance to state and federally funded energy program to support:

(i) The federal low-income home energy assistance program which provides heating assistance to eligible low-income persons and any state funded or privately funded heating assistance

program of a similar nature assigned to it for administration;

(ii) The weatherization assistance program which offers home weatherization grants and heating system upgrades to eligible persons of low-income;

(iii) The emergency fuel program which provides oil deliveries to families experiencing a heating emergency;

(iv) The energy conservation program, which offers service and programs to all sectors; and

(v) [Deleted by P.L. 2008, ch. 228, § 2, and P.L. 2008, ch. 422, § 2.]

(16) Advise the economic development corporation in the development of standards and rules for the solicitation and award of renewable energy program investment funds in accordance with § 42-64-13.2;

(17) Develop, recommend, and evaluate energy programs for state facilities and operations in order to achieve and demonstrate the benefits of energy-efficiency, diversification of energy supplies, energy conservation, and demand management; and

(18) Advise the governor and the general assembly with regard to energy resources and all matters relevant to achieving the purposes of the office.

Appendix B:

System Benefits Charge

Appendix B: System Benefits Charge

OER receives the majority of its funding for staffing through the System Benefits Charge (SBC). OER received $1,126,000 from the SBC in 2017 for staffing activities associated with the development, implementation, and evaluation of energy efficiency and clean energy programs; system reliability; energy security; and regional energy system activities. In addition, these funds support OER's engagement in regulatory proceedings and other actions pertaining to the purposes, powers, and duties enumerated in the Rhode Island Energy Resources Act.

As of June 1, 2018, OER is staffed with twelve (12) full time state employees, and the SBC funding provides approximately 45 percent of annual salaries and fringe, with the balance contributed from other limited restricted receipt and federal funds.

The invaluable funding resources provided through the SBC have supported the numerous activities and accomplishments detailed throughout this Annual Report, including, but not limited to:

- Development and implementation of the new Rhode Island State Energy Plan;
- Oversight and development of the state's fourth annual Clean Energy Jobs Report;
- Program, technical, and administrative support for the state's nation-leading energy efficiency programs;
- Coordination and implementation of additional energy efficiency initiatives, including the Efficient Buildings Fund Project Priority List, Building Labeling , Zero Energy and High Performance Buildings, the Farm Energy Efficiency Program, and the Block Island Saves Energy Efficiency Program;
- Direct implementation and/or programmatic support for renewable energy programs that grow our local clean energy economy, including the Renewable Energy Growth Program, Solarize Rhode Island, and clean energy procurements;
- Design and implementation of program initiatives and market development strategies for promoting alternative, clean heating and transportation solutions;
- Coordination of grid of the future efforts to transition the state to a distributed energy system;
- Implementation of the state's "Lead by Example" initiative to reduce energy consumption, lower GHG emissions, and promote renewable energy in state facilities;
- Active participation in important regulatory proceedings necessary to implement state mandates and policy goals, such as least-cost procurement activities (system reliability and energy efficiency), renewable distributed generation programs, rate design and electric distribution system planning;
- Engagement on regional energy infrastructure issues, working in collaboration with the New England states, ISO-NE, and other stakeholders; and
- Staffing the Emergency Operation Center during severe weather related events at the Rhode Island Emergency Management Agency.

Appendix C:

State Energy Plan Implementation Update

Appendix C: State Energy Plan Implementation Update

In 2013 and 2014, OER staff led efforts to develop a ten-year update to the Rhode Island State Energy Plan ("Energy 2035", or "the Plan"). On October 8, 2015, the State Planning Council voted to adopt Energy 2035 as an element of the State Guide Plan, codifying the Plan as the state's formal long-term, comprehensive energy strategy.

The Plan represents Rhode Island's first data-driven energy planning and policy document. The vision of the Plan is to provide energy services across all sectors—electricity, thermal, and transportation—using a secure, cost-effective, and sustainable energy system. The Plan sets bold and ambitious goals and strategies for transforming Rhode Island's energy system.

The Plan charges OER with providing a yearly status update on Plan implementation in the OER Annual Report. The status update provides information on progress toward implementing each of the Plan's 20 recommended strategies.

This appendix provides a summary of State Energy Plan implementation as of 2018.

Energy 2035 Policies & Strategies

The State Energy Plan recommended an "all-of-the-above" clean energy framework to achieve the Plan goals and performance measure targets. The Plan presented 20 strategies in seven major policy areas, plus a cross-cutting policy encouraging state and municipal governments to "Lead by Example":

- Maximize energy efficiency in all sectors;
- Promote local and regional renewable energy;
- Develop markets for alternative thermal and transportation fuels;
- Make strategic investments in energy infrastructure;
- Mobilize capital and reduce costs;
- Reduce greenhouse gas emissions; and
- Lead by example.

Below is a summary of implementation progress on the 20 strategies recommended by Energy 2035, as of 2017:

1. Continue electric and natural gas Least-Cost Procurement

Strategy Summary

The Plan called for Rhode Island to renew the state's commitment to leadership in energy efficiency by extending the Least-Cost Procurement mandate, originally set to sunset in 2018. Least-Cost Procurement requires electric and gas distribution companies to invest in all cost-effective energy efficiency before procuring more expensive, conventional supply resources. The Plan identified a continuation of Least-Cost Procurement as one of the most cost-effective methods to achieve Rhode Island's long-term energy, economic, and environmental goals.

Implementation Progress

In 2015, the General Assembly passed and Governor Gina M. Raimondo signed an extension of Least-Cost Procurement to 2024. The extension of the law ensures that Rhode Island electric and natural gas customers will continue to enjoy access to the state's nationally-recognized energy efficiency programs for the near future.

In 2017, Rhode Island continued to offer customers energy-saving opportunities, deliver value, and sustain high levels of investment through its state-of-the-art energy efficiency programs. The American Council for an Energy Efficient Economy (ACEEE) ranked the Ocean State third in nation in energy efficiency, the tenth year in a row that Rhode Island has scored in the top ten. In 2017, Rhode Island's energy efficiency programs helped ratepayers save 232,023 megawatt-hours (MWh) of electricity (3.00% of 2012 electric consumption) and 468,211 million Btu (MMBtu) of natural gas (1.24% of 2012 natural gas consumption), producing over $320 million in economic benefits to Rhode Island.

2. Expand Least-Cost Procurement to unregulated fuels

Strategy Summary

The Plan called for Rhode Island to develop a long-term strategy for sustainably funding energy efficiency programs for delivered fuels customers. Over one-third of Rhode Island homes use delivered fuels such as oil and propane for heating, yet little dedicated energy efficiency program funding exists to serve these customers. The Plan identified delivered fuels use as one of the largest as-of-yet untapped sources of cost-effective savings in the state's energy economy.

Implementation Progress

In 2016, OER staff led conversations with industry and stakeholder partners on strategies to better extend the full benefits of energy efficiency to delivered fuels heating customers. OER helped negotiate a proposal to place a "systems benefit charge" on delivered fuels in order to provide a dedicated pool of energy efficiency funding for heating oil and propane customers. Although the proposal did not ultimately advance, OER and partners successfully advocated to maintain existing funding support for these customers in the energy efficiency program through the use of electric systems benefit charge funding.

3. Reduce vehicle miles traveled

Strategy Summary

The Plan called for Rhode Island to invest in alternative modes of transportation; promote sustainable development and land use practices; and pilot programs incentivizing reduced discretionary driving. Rhode Island's transportation sector, which is dominated by imported, petroleum-based fuels such as gasoline and diesel, represents Rhode Island's costliest and most environmentally damaging energy sector. As in other sectors, the least-cost way to reduce impacts of transportation energy use is by reducing demand—traditionally measured in terms of vehicle miles traveled (VMT). The Plan recommends implementing a suite of strategies to reduce VMT; many of them already proposed in multiple existing Rhode Island transportation, transit, and land use plans.

Implementation Progress

In 2018, RIDOT has expanded its ferry season by several weeks, alleviating congestion caused by those trying to reach Newport from urban locations. RIDOT staff is examining the viability of additional ferry stops and routes. RIDOT continues to develop the Providence Intermodal Transit Center and the Pawtucket/Central Falls station, while providing technical assistance and working to partner with communities seeking Transit Oriented Development opportunities. Trains to Planes entered its third year, an example of a RIDOT initiative to remove congestion from state roads for large-scale events. In 2017 and 2018, RIDOT also kicked off its Transportation Innovation Partnership (TRIP) Mobility Challenge. This initiative, in partnership with the City of Providence and RIPTA, will be focused on testing and deploying innovative transportation technology (e.g. electric autonomous shuttle buses) to connect Providence's Downtown to the Woonasquatucket River Corridor, filling a transportation gap in an area of burgeoning development.

4. Improve fuel efficiency and reduce vehicle emissions

Strategy Summary

The Plan called for Rhode Island to continue to adopt the increasingly stringent vehicle emissions standards set by California until 2025 and thereafter. Although authority to set standards for fuel efficiency and motor vehicle emissions falls under the purview of the federal government, Section 177 of the Clean Air Act allows California to request a waiver to adopt stricter standards. States may establish stricter regulations by adopting California's standards, and Rhode Island is one of 15 states that has done so, to date. Although federal standards (Corporate Average Fuel Economy, or CAFE) are currently essentially aligned with California's greenhouse gas standards, the Plan recommends that Rhode Island continue to adopt the increasingly stringent vehicle emissions standards set by California,

should federal standards be relaxed.

Implementation Progress

In July 2013, the Rhode Island Department of Environmental Management (DEM) amended Air Pollution Control Regulation No. 37, Rhode Island's Low-Emission Vehicle Program, to reflect the most recent CARB Low Emission Vehicle (LEV) III standards and Zero Emission Vehicle (ZEV) requirements. As of 2016, this regulation continues to be in place, keeping Rhode Island's vehicle emissions standards in line with California's.

5. Innovate with state energy efficiency codes and standards

Strategy Summary

The Plan called for Rhode Island to strengthen appliance minimum standards, and develop an integrated, long-term strategy to transition to zero net energy buildings. The Plan identified codes and standards as one of the most simple and cost-effective policy tools for promoting energy efficiency in appliances and buildings.

Implementation Progress

In 2016, the Rhode Island Zero Energy Building (ZEB) taskforce issued a white paper outlining a 20-year roadmap for zero energy buildings to contribute to the state's goal of reducing greenhouse gas emissions by 45% by 2035. OER has assumed the lead role in the state for implementing the report's recommendations and coordinates a working group of interested stakeholders. With the input of National Grid, the Green Building Advisory Council, the State Building Commissioner, and other key stakeholders, in 2018 OER released a voluntary stretch code for residential and commercial new construction and large renovations.

6. Improve combined heat and power market

Strategy Summary

The Plan called for Rhode Island to evaluate additional methods to speed the diffusion of combined heat and power (CHP) technologies into the Rhode Island marketplace. CHP, also called co-generation, refers to systems that generate both electricity and useful heat, thereby increasing the efficiency of on-site energy use. The Plan identified the opportunity to deploy potentially significant amounts of additional CHP in Rhode Island, with the possibility of achieving 400 MW of in-state CHP by 2035.

Implementation Progress

Since 2012, Rhode Island law has required National Grid to document the support for the installation and investment in clean and efficient CHP annually in its energy efficiency program plan by including a plan for identifying and recruiting qualified CHP projects, incentive levels, contract terms and guidelines, and achievable megawatt targets. In recent years, National Grid has identified several key strategies to promote additional uptake of CHP, including development of a CHP user's guide, hiring of a dedicated CHP program manager, and broadened rules for program eligibility.

7. Expand the Renewable Energy Standard

Strategy Summary

The Plan called for Rhode Island to increase the Renewable Energy Standard (RES) beyond 16 percent by 2019 (In 2013, the Public Utilities Commission issued a ruling in Docket 4404 that established a new maximum RES target of 14.5 percent in 2019). The RES requires retail electricity providers to supply an increasing percentage of their sales from renewable energy resources such as solar, wind, wave, geothermal, small hydropower, biomass, and fuel cells. The Plan demonstrated that achieving the state's greenhouse gas reduction goals will likely require a 40 percent RES by 2035 at a minimum.

Implementation Progress

In 2016, the General Assembly passed a bill expanding the Renewable Energy Standard beyond 2019 by

Since the publication of the 2015 State Energy Plan, Rhode Island has made significant positive progress toward reducing overall energy consumption, expenditure and emissions.

Sector	GWh	Consumption (Billion BTUs)	Expenditure (Million $)	CO2 Emissions (Metric Tons)
Electricity	7,524	60,192	$ 1,227	2,424,752
Thermal		56,878	$ 739	3,411,652
Transportation		57,885	$ 973	4,046,729
Total	**7,524**	**174,955**	**$ 2,939**	**9,883,134**

*Electric Sector BTU's derived from reported GWh converted using an assumed average ~8,000 BTU/kWh heat rate

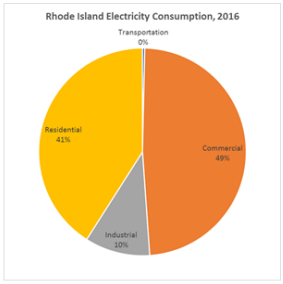
The following infographics update the 2010 datasets used in the State Energy Plan with the most recent data provided by the U.S. Energy Information Administration (EIA) State Energy Data System (SEDS).

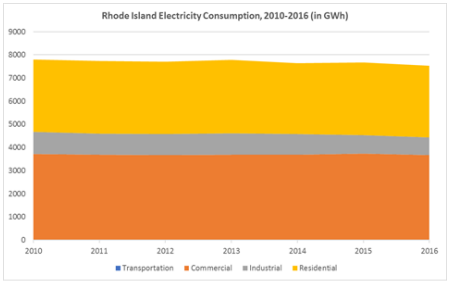
Energy Consumption Data

Electricity Sector

7.5 Terawatt-hrs in 2016

3.5% decrease between 2010 and 2016

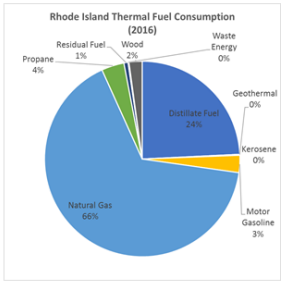


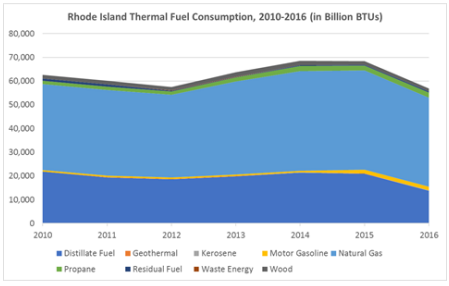


Thermal Sector

57 Trillion BTUs in 2016

9% decrease between 2010 and 2016

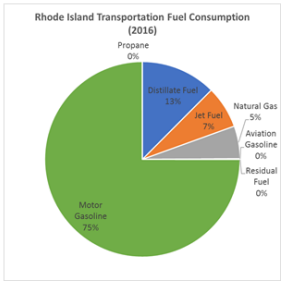


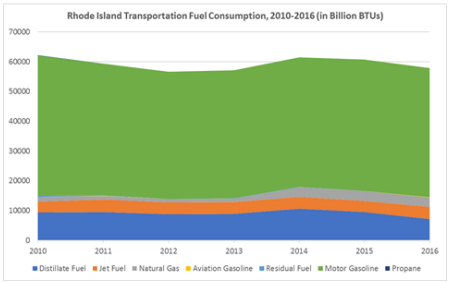


Transportation Sector

58 Trillion BTUs in 2016

7% decrease between 2010 and 2016



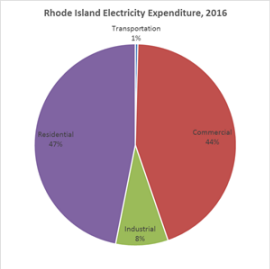


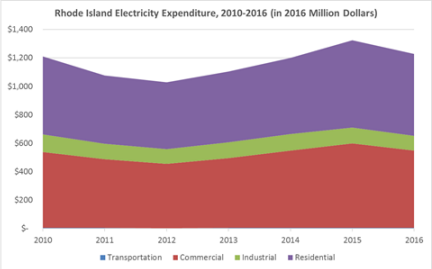
Energy Expenditure Data

Electricity Sector

$1.23 billion in 2016

1.5 % increase between 2010 and 2016

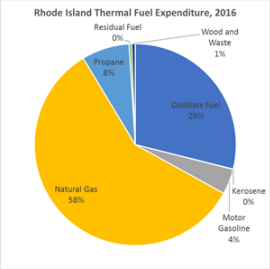


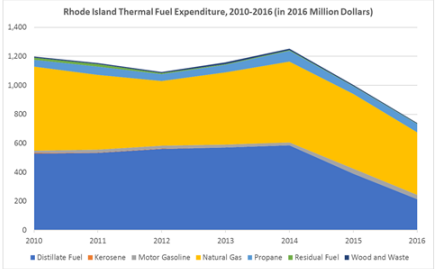


Thermal Sector

$739 million in 2016

38% decrease between 2010 and 2016

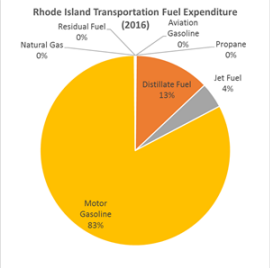


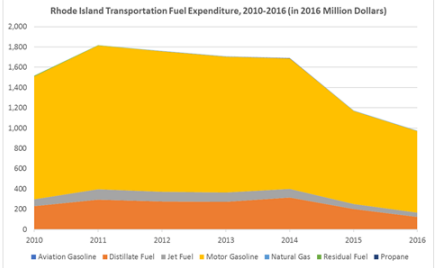


Transportation Sector

$973 million in 2016

36% decrease between 2010 and 2016



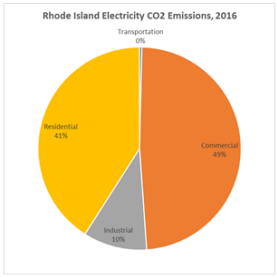


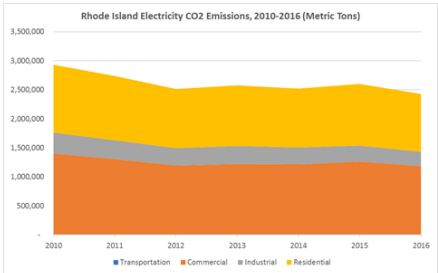
Energy Emissions Data

Electricity Sector

2.4 million metric tons in 2016

17% decrease between 2010 and 2016

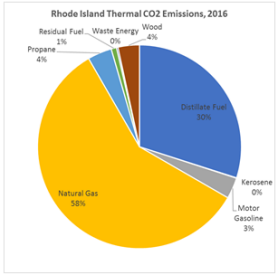


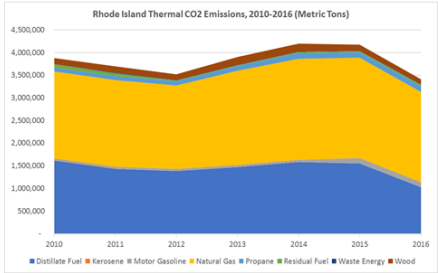


Thermal Sector

3.4 million metric tons in 2016

12% decrease between 2010 and 2016

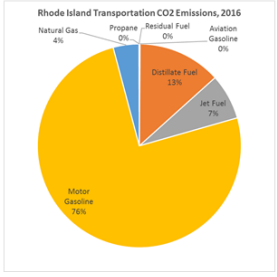


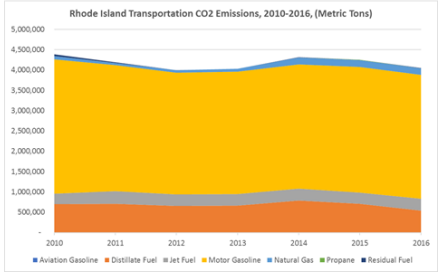


Transportation Sector

4 million metric tons in 2016

8% decrease between 2010 and 2016





an additional 1.5 percent each year until 2035, for an ultimate RES of 38.5 percent in 2035.

8. Expand renewable energy procurement

Strategy Summary

The Plan called for Rhode Island to increase the share of renewable energy in Rhode Island's electricity supply portfolio through a mix of clean energy imports, distributed renewable generation, and utility-scale in-state projects. Supporting the growth of in-state renewable energy generation will bring economic development, system reliability, and job creation benefits to the state. The Plan estimated the need for over 500 MW of local renewable energy projects by 2035.

Implementation Progress

In March 2017, Governor Gina M. Raimondo announced a strategic goal to achieve 1,000 megawatts of clean energy by the end of 2020, increasing the amount of clean energy in the state by ten times. OER is charged with tracking progress towards meeting the 2020 goal, which will include energy from a broad portfolio of clean energy resources, including offshore and onshore wind and solar. In 2018, the Raimondo Administration announced a 400 MW procurement of clean energy planned for the summer of 2018, as well as the selection of Deepwater Wind to develop a 400 MW offshore wind farm. In 2017, the General Assembly passed an extension and expansion of the Renewable Energy Growth (REG) Program until 2029, which will enable the development of an additional 400 megawatts of local wind, solar, hydropower, and anaerobic digestion projects between 2020 and 2029. In December 2016, the 30 megawatt (MW) Block Island Offshore Wind project became the first operational offshore wind project in the nation. Finally, the state supported a collaborative effort with Massachusetts and Connecticut to issue the region's first Multi-State Clean Energy Request for Proposals (RFP) for clean energy projects.

9. Mature the renewable thermal market

Strategy Summary

The Plan called for Rhode Island to implement a market development strategy to stimulate increased adoption of renewable thermal fuels. Renewable thermal fuels and clean heating technologies include biomass, solar hot water, ground- and air-source heat pumps, advanced biofuels, and biogas. Although the thermal sector accounts for approximately one-third of Rhode Island energy consumption, virtually no renewable thermal market yet exists in the state.

Implementation Progress

In 2016, OER worked with a consultant team and stakeholder task force to evaluate strategies to grow renewable thermal markets in Rhode Island. The resulting white paper "Rhode Island Renewable Thermal Market Development Strategy," issued in 2017, examines the benefits and impacts to scaling renewable thermal adoption, identifies key market barriers to deployment, and proposes a series of policy recommendations to promote renewable thermal technologies in Rhode Island. National Grid's 2018 rate case settlement agreement proposes to create an "electric heat" program, which if approved will provide funding for air- and ground-source heat pumps financial incentives for customers.

10. Expand use of biofuels

Strategy Summary

The Plan called for Rhode Island to increase the biodiesel content of distillate fuel blends used by Rhode Island's thermal and transportation sectors. Distillate fuels such as heating oil and diesel play a significant role in Rhode Island's energy system; increasing the biodiesel content of these fuels will help the state achieve its energy, economic, and environmental goals. The Plan recommends an evaluation of the suitability of increasing the state's existing 5 percent biofuel blending mandate to a 20 percent standard by 2035.

Implementation Progress

In 2016, two state-sponsored studies considered the future role that biofuels could play in Rhode Island's energy system. These included: (1) an OER-led study to evaluate strategies to grow the state's nascent market for renewable thermal technologies, including biofuels; and (2) the EC4's Greenhouse Gas Emissions Reduction Study, which evaluated biofuel blending as one potential resource pathway toward achieving the state's long-term greenhouse gas emissions reduction goals.

11. Promote alternative fuel and electric vehicles

Strategy Summary

The Plan called for Rhode Island to mature the market for alternative fuel and electric vehicles through ongoing efforts to expand fueling infrastructure, ease upfront costs for consumers, and address other barriers to adoption. Almost all currently registered vehicles in the state use gasoline or diesel; 757 electric vehicles were registered in Rhode Island as of December 2016. Increasing the market share of alternative fuel and electric vehicles is a key strategy to meeting the Plan's energy security, economic, and environmental goals.

Implementation Progress

In 2016, OER launched the state's first rebate incentive program to support the adoption of electric vehicles: Driving Rhode Island to Vehicle Electrification (DRIVE). As of January 1, 2017, DRIVE had issued or reserved 157 rebates to Rhode Island EV drivers, totaling $349,500. Since the program commenced, EV adoption is up 32 percent across state roadways. As of July 10, 2017, DRIVE was suspended due to unavailability of program funding. National Grid's 2018 rate case settlement agreement proposes to create an "electric transport" program, which if approved will provide funding for a variety of programs to promote electric vehicles, including charging station deployment.

12. Enhance energy emergency preparedness

Strategy Summary

The Plan called for Rhode Island to develop a short- and long-term strategy for mitigating critical infrastructure energy security risks and investing in power resiliency solutions. Extreme weather events in recent years have highlighted the need for updated energy emergency plans and resiliency improvements to infrastructure and critical facilities. The Plan recommends that Rhode Island build on past and current inter-agency efforts to develop a comprehensive energy emergency preparedness strategy, as well as explore the innovative use of microgrids and backup generation to keep critical infrastructure online during severe weather events.

Implementation Progress

The Rhode Island Emergency Management Agency (EMA) completed the development of a Rhode Island state-specific Critical Infrastructure Protection Plan (CIPP) in 2017. OER contributed to the development of the CIPP by leading the development of screening criteria for prioritizing critical energy infrastructure as well as identification of priority critical energy assets based on application of the criteria. Additionally, in 2017, OER completed a study identifying opportunities and recommendations for deploying resilient microgrids for critical services in Rhode Island.

13. Modernize the grid

Strategy Summary

The Plan called for Rhode Island to develop recommendations for electric grid, rate, and regulatory modernization. Rhode Island's energy system is at the cusp of a fundamental long-term transformation as consumers increasingly adopt energy efficiency, renewable energy, and other "distributed energy resources". The Plan envisions a cooperative effort among grid operators, planners, and regulators to identify solutions for transitioning the electric system transitions from a centralized model to distributed future.

Implementation Progress

In March 2017, Governor Raimondo issued a letter to OER, the Division of Public Utilities and Carriers (DPUC), and the Public Utilities Commission (PUC), asking the three agencies to collaborate in the development of a more dynamic utility regulatory framework that will enable Rhode Island to achieve key policy objectives. In response, the three agencies submitted a Power Sector Transformation (PST) Phase One Report in November 2017, with principles and recommendations in the following areas: utility business model, grid functionality, distribution system planning, and beneficial electrification of heating and transportation. National Grid's 2018 rate case settlement agreement, if approved, will advance many of the topics identified in the PST report, including electric transport, electric heat, energy storage, grid modernization, advanced metering, and performance incentive mechanisms.

14. Address natural gas leaks

Strategy Summary

The Plan calls for Rhode Island to review the progress of gas infrastructure repair and replacement in Rhode Island. Not only do leaks in the natural gas distribution system pose safety and reliability concerns, but they also represent the seventh largest source of greenhouse gas emissions in the state, as of 2012. National Grid currently has an aggressive leak repair and pipe replacement program through their annual Gas Infrastructure, Safety, and Reliability (ISR) Plan.

Implementation Progress

In 2017, National Grid continued their leak-prone pipe replacement program through the Gas ISR, which will eliminate all cast iron, wrought iron and unprotected steel main, and services within the next 20 years.

15. Expand financing and investment tools

Strategy Summary

The Plan calls for Rhode Island to bring energy efficiency, renewable energy, and alternative transportation programs to scale by deploying new sources of capital. Although Rhode Island ranks among the national leaders in clean energy investment, the pace and magnitude of investment is not commensurate with levels required to achieve long-term energy goals. The Plan recommends examining how financing opportunities can best be used to expand the reach of clean energy initiatives, lower their overall costs, and otherwise support the wider and hastened adoption of efficient and clean technologies.

Implementation Progress

Governor Gina M. Raimondo's FY2016 State Budget established the Rhode Island Infrastructure Bank, and placed the agency in charge of administering residential and commercial Property Assessed Clean Energy (PACE) programs and the Efficient Building Fund (EBF) for municipal projects. Through the PACE and EBF programs, the Infrastructure Bank is expanding the availability of low-cost financing for energy efficiency and renewable energy projects, thereby addressing key gaps in capital availability for clean energy upgrades in the residential, commercial, and municipal sectors.

16. Reduce the soft costs of renewable energy

Strategy Summary

The Plan calls for Rhode Island to provide guidance at the state and municipal levels for uniform, standardized clean energy permitting processes to streamline development and mitigate regulatory hurdles to renewable deployment. Clear standards and regulations provide the private sector with a simplified environment for doing business and can help companies offer clean energy products to consumers at a lower cost.

Implementation Progress

OER undertook numerous activities in 2017 to further efforts to reduce the soft costs of renewable energy. The Statewide Solar Building and Electric Permit Application (enacted in the 2017 legislative

session) went into effect on January 1, 2018. All municipalities are now required to only use this state permit application for all scales of solar projects submitted to a municipality. There are no longer 39 building and electric permitting application/processes. Additionally, OER and the Division of Statewide Planning are currently working on a Solar Guidance Information and Model Ordinance that will be completed in October 2018.

17. Address high and volatile regional energy costs

Strategy Summary

The Plan calls for Rhode Island to continue to partner closely with other New England states to address regional energy supply challenges and identify cost-effective strategies to mitigate the impacts of rising energy costs. In recent years, the region has experienced energy price volatility due to the growing use of natural gas for power generation combined with limited pipeline capacity delivering gas into New England. The Plan recommends that Rhode Island work with neighboring states to pursue the full range of available options, from energy efficiency investments to infrastructure solutions.

Implementation Progress

In addition to the suite of energy efficiency and renewable energy initiatives listed above, OER worked with regional partners throughout 2017 to advance shared energy, economic, and environmental interests through strategic solutions that benefit from economies of scale. For example, OER supported Rhode Island's active participation in the issuance of the region's first Multi-State Clean Energy Request for Proposals (RFP), which resulted in Rhode Island's selection of 44 MW of new renewable capacity, forecasted to save local consumers $70 million in energy costs over the next twenty years. OER also collaborated closely with sister states through the New England States Committee on Electricity (NESCOE) on a number of key areas with the potential to mitigate high and volatile energy prices, including the New England Governors' Energy Infrastructure Initiative and improvements to regional electric transmission planning processes.

18. Continue participating in RGGI

Strategy Summary

The Plan calls for Rhode Island to continue participating in the Regional Greenhouse Gas Initiative (RGGI). RGGI is the first market-based cap and trade program in the United States designed to reduce electric power sector greenhouse gas emissions. The Plan envisions ongoing involvement in RGGI as a cost-effective mechanism to cap and reduce emissions in the electric power sector, a major source of greenhouse gas emissions in the region.

Implementation Progress

In 2017, Rhode Island continued its participation in RGGI and its track record of committing auction proceeds to cost-effective energy efficiency and renewable energy projects. For more information on the use of Rhode Island's RGGI funds, please see Appendix D of this Annual Report, or visit: http://www.energy.ri.gov/policies-programs/programs-incentives/rggi.php.

19. Develop a carbon reduction strategy

Strategy Summary

The Plan calls for Rhode Island to evaluate a cost-effective portfolio of policies to meet statutory near- and long-term greenhouse gas emissions reduction targets. The passage of the 2014 Resilient Rhode Island Act institutionalized clear greenhouse gas emissions reduction goals in state law. The next step for the state is to develop an implementation strategy to achieve the ambitious reduction targets.

Implementation Progress

In December 2016, the Executive Climate Change Coordinating Council (EC4) completed the Rhode Island Greenhouse Gas Emissions Reduction Study. The study combined data analysis, policy research, and scenario modeling to provide the state with insight into viable pathways to achieve long-term

greenhouse gas emissions reduction goals set forth in the Resilient Rhode Island Act.

20. Lead by example

Strategy Summary

The Plan calls for Rhode Island to implement a tailored and comprehensive public sector "Lead by Example" initiative. State and local governments each have a key role to play in helping Rhode Island achieve its energy goals, both through direct investments in cost-effective clean energy solutions, as well as through the creation of favorable, streamlined regulatory environments for businesses in the clean energy sector. The Plan provides recommendations for both the State and municipalities to lead by example in energy efficiency, renewable energy, and alternative transportation.

Implementation Progress

In 2017-2018, OER continued to lead implementation of Governor Gina M. Raimondo's Executive Order 15-17, which requires State agencies to "Lead by Example" and transition energy supply portfolios and consumption practices toward lower-cost, cleaner, low-carbon solutions. Notable achievements in 2017 included: reducing energy consumption across State facilities by 10.1% compared to 2014 baseline; supporting the installation of 7 new dual port electric vehicle charging stations across the state; launching a Demand Response Program for the State; developing the State's first voluntary building Stretch Code; ensuring that 50% of electricity consumed by State facilities comes from renewable energy resources; and converting State-owned highway streetlights to LED technology.

Appendix D:

Regional Greenhouse Gas Initiative Annual Report

2017 Regional Greenhouse Gas Initiative Proceeds Investments Annual Report

2017 Plans for the Allocation and Distribution of RGGI Auction Proceeds

Introduction

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 state's 2017-A and 2017-B 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.

As indicated by the program summaries 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.

RGGI Proceeds Allocation Process

Per statute, OER is authorized to allocate state 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;
- Cost-effective direct rate relief for consumers;
- Direct rate relief for low-income consumers;
- Reasonable compensation to RGGI, Inc.; and
- Reasonable costs of OER and the Department of Environmental Management (DEM) in administering the RGGI program.

Pursuant to RIGL §23-82-5, RGGI, Inc. 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 OER. OER then distributes and allocates the proceeds of the auctions or sales in accordance with §23-82-6.

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) day notice of the public hearing. After the public hearing, OER allows an additional ten (10) day period for interested persons to submit data, views or arguments in writing. OER maintains a record of all public comments and responds to each substantive issue raised. It is then that OER finalizes the allocation plan and posts a copy on its website.

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.

For more information, please visit OER's RGGI website at: www.energy.ri.gov/policies-programs/programs-incentives/rggi.php.

Summary of RGGI Auction Proceeds Allocated in the 2017-A & 2017-B Allocation Plans

Plan	Finalized	# of Auctions	Auctions Held	Gross Proceeds
2017-A Plan	June 2017	2	September 2016 & December 2016	$3,636,527.81
2017-B Plan	January 2018	2	March 2017 & June 2017	$1,427,601.26

As shown in the chart above, OER issued two RGGI allocation plans in 2017, each one allocating state proceeds generated from two emission allowance auctions.

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 $35,326.49, as indicated in the 2017-B Allocation Plan.

RIGL §23-82-6(a)(6) authorizes the reasonable costs of OER and DEM in administering the RGGI program. The total reimbursement to both entities shall not in any year exceed $300,000 or ten percent (10%) of the proceeds, whichever is greater. A total of $506,413 was allocated to OER and DEM across these two plans.

After deducting the compensation for RGGI Inc. and state agency administrative expense reimbursement, the balance, including accrued interest and reallocation of funds from previous plans, a total of $5,434,785.53 was invested in the following clean energy programs and initiatives:

Expanding Solar Adoption through the Renewable Energy Fund ($3,974,785.63)

The Renewable Energy Fund (REF), which is housed at the state's Commerce Corporation, is dedicated to increasing the role of renewable energy throughout the state. REF provides grants for renewable energy projects with the potential to make electricity in a cleaner, more sustainable manner, while stimulating job growth in the green technology and energy sectors of Rhode Island's economy. Eighty-

six projects were awarded in 2017, spurring approximately 4.5 MW of new clean energy resources across the state.

For more information on the Renewable Energy Fund, please visit: http://commerceri.com/finance-business/renewable-energy-fund/

RIDEM Energy-Saving Trees Program ($110,000)
This program helps Rhode Island homeowners conserve energy and reduce their utility costs. Trees play an important role in cooling streets and homes, filtering air, and reducing stormwater pollution. DEM's program is operated in coordination with Arbor Day Foundation and the Rhode Island Tree Council. The Spring 2017 program distributed 1,000 trees. It is estimated that the annual energy savings (in year 20) for these trees will be greater than 136,000 kWh.

Agricultural Energy Grant Program ($250,000)
A collaborative project of DEM, OER, and the Rhode Island Resource Conservation & Development Area Council, this grant program helps local farmers "green" their operations and benefit from the related energy and cost savings achieved through energy efficiency and renewable energy projects. Six projects were awarded totaling 149.48 kW.

In January 2018, DEM announced $120,000 in grants to help farmers "green' their operations and save energy and money. "These grants are a win for Rhode Island farmers and for our state," said Governor Gina Raimondo. Funded projects include: Bedrock Tree Farm, Wakefield; Carpenter's Farm, Wakefield' Cottrell Homestead, West Kingston; Little Grange Farm, Little Compton; Pat's Pastured, East Greenwich; and Stoney Acres Farm, Wakefield.

For more information on the Agricultural Grant Program, please visit: http://www.rifarmenergy.org/ri-ag-ep.htm.

Fostering Clean Energy Adoption by Low- and Moderate-Income Consumers ($100,000)
These funds have been allocated for a new pilot (Zero Energy for Ocean State Demonstration Project or ZEOS) designed to help provide energy savings to low and moderate income (LMI) customers, expand access to energy efficiency, renewable thermal and solar PV technologies to under-served sectors, and provide a direct economic benefit to those households. OER will be seeking proposals from qualified vendors to design and construct affordable energy efficient Zero Energy Building housing unit(s) to serve LMI residents in Rhode Island. The housing units must employ solar PV and air-source heat pump technologies to achieve ZEB status.

Supporting Clean Energy Investments throughout Rhode Island Municipalities ($500,000)
Funds have been allocated to support residential, commercial and/or public-sector energy efficiency and/or renewable energy financing transactions made available through the Rhode Island Infrastructure Bank (RIIB).

Through RIIB's Efficient Buildings Fund (EBF), low-interest-rate loans are made available to help finance energy efficiency and renewable energy projects at 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.

Previously-allocated RGGI funds helped to capitalize two rounds of project financing. The second round of financing included $10.4 million in energy efficiency and renewable projects in five Rhode Island communities, while also creating or supporting 170 clean energy jobs. Combined, the energy efficiency projects are projected to produce energy savings greater than 25%, and annual energy and

maintenance cost savings of over a $1 million. The five communities will realize approximately $10 million in net cash flow savings over the useful life of the improvements.

To date, RIIB's Efficient Buildings Fund, has supported $27.6 million in clean energy loans to 10 communities.

For more information on the Rhode Island Infrastructure Bank, please visit: https://www.riib.org/.

Incentivizing Use of Rhode Island's First Stretch Building Code ($500,000)

In February 2018, consistent with Governor Gina Raimondo's Lead by Example Executive Order (15-17), Rhode Island's first voluntary Stretch Codes were made available to private and public building construction and renovation projects. The codes were developed with the assistance of subject matter experts and were vetted through a public comment process. A stretch code is a building code or compliance pathway that is more aggressive than base code. Also known as "reach codes", stretch codes can be either voluntary or mandatory. Their main purpose is to help buildings achieve higher energy savings and implement advanced building practices.

In the 2017-B RGGI Allocation Plan, OER allocated $500,000 to support municipal energy efficiency and/or renewable energy investments implemented as part of new construction or large-scale renovation project(s) that meet or exceed the state's stretch building code.

For more information on the state's stretch code, please visit:
http://www.energy.ri.gov/policies-programs/lead-by-example/rhode-island-stretch-codes.php

For more information on Rhode Island's participation in RGGI and to view the state's past RGGI Auction Proceed Allocation Plans, please visit:

www.energy.ri.gov/policies-programs/programs-incentives/rggi.php

www.energy.ri.gov