STATE OF RHODE ISLAND

OFFICE OF ENERGY RESOURCES

2017 Annual Report

www.energy.ri.gov

TABLE OF CONTENTS

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 2017 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. Since our last agency report, Rhode Island's elected officials have worked together to strengthen the state's commitment to our clean energy future. Some highlights include:

- Extension 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;
- Expansion of **Virtual Net Metering** eligibility, allowing non-profits, private academic institutions, the Federal Government and hospitals to enjoy the economic and environmental benefits of off-site renewable energy generation;
- Establishment of a **statewide solar permit** (building and electrical) application that will go into effect January 1, 2018 for use by all municipalities and solar companies in the state;
- Improvements to **farm land value taxation rules** to allow farmers to use up to twenty percent of their total acreage for a renewable energy system without reclassification of their entire farm out of a farm land taxation value by local tax assessors. However, the site where the renewable system is built and associated acreage can be reclassified at a higher land value taxation by local tax assessors; and
- Updates to the **renewable energy interconnection standard** law to include specific deadlines for the completion of interconnection studies by the utility.

The results of your continued efforts 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 15,300 jobs strong. Since 2014, clean energy employment in the Ocean State has increased by an impressive 66 percent, with an 11 percent increase just this past year. 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.

OER has also made a concerted effort to address public sector energy costs throughout State agencies and municipalities. Under the Governor's 2015 "Lead by Example" Executive Order, OER is actively working to achieve a series of ambitious goals, including reducing energy consumption by ten percent by FY19 and shifting the State's energy supply portfolio to 100 percent renewables by 2025. These efforts are already bearing fruit: as of October 2016, the State had achieved an 8.3 percent reduction in State energy consumption and sourced 20 percent of electricity from renewables. Importantly, the efficiency and renewable investments made across the public sector support jobs and industry, reduce public sector energy burdens, and mitigate greenhouse gas emissions throughout our communities.

The importance of a modernized electric grid to achieving a low-cost, reliable, and clean energy future is increasingly clear. In order to control the long-term costs of our electric system, give consumers

more energy choices, and build a flexible grid to integrate more clean energy, OER has partnered with the Public Utilities Commission (PUC) and Division of Public Utilities and Carriers (DPUC) to launch the Power Sector Transformation Initiative. This initiative will develop proposals for a more dynamic utility regulatory framework in order to achieve what our citizens and communities want — affordable, reliable, and clean energy.

While state-level initiatives are critical to Rhode Island's achievement of its economic, energy, and environmental goals, OER recognizes that the state's economy and energy system are intricately linked to those of the entire New England region. Our agency continues to play a leadership role in regional engagement on numerous energy issues. In particular, OER looks forward to advancing your vision and improving the state's economic competitiveness by working with our New England counterparts to identify cost-effective energy infrastructure projects that offer the potential to reduce long-term energy costs; diversify our energy supply portfolio; enhance system reliability; achieve important environmental goals; and position Rhode Island to attract new investment and job growth opportunities for local businesses and our workforce.

These on-going efforts – which take a balanced view of our energy system and leverage a combination of local and regional strategies – 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

Two thousand and sixteen 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 April 2017, OER released its third annual ***Clean Energy Jobs Report***, which found that clean energy employment in the Ocean State has increased by an impressive 66 percent since 2014 and 11 percent in just the past year. Clean energy jobs now support about 15,300 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 2016, OER continued to advance Rhode Island as a national energy efficiency leader and innovator. The state's ***nationally-recognized energy efficiency programs*** achieved savings of 2.8% of electricity consumption and 1.2% of natural gas consumption, respectively, producing $355.9 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 is designed to provide financial assistance to local governmental units for deep energy-saving projects. In the first round of financing, the fund provided over $17 million to six communities, funding projects expected to save their communities almost $19 million after debt service through energy savings and the production of renewable energy.

The past year also marked major milestones for the state's renewable energy sector. Governor Gina M. Raimondo's announcement of a strategic goal to achieve ***1,000 megawatts of clean energy by 2020*** sets us on pace to realize new and dynamic economic and clean energy growth opportunities. Progress toward this goal is already evident in the completion of the ***nation's first Offshore Wind Farm*** off the coast of Block Island, which commenced commercial operation in December 2016. 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 1,700 small solar projects to homeowners across the state; over twenty medium, commercial, and large solar projects; and five 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 479 signed contracts for 3.4 MW of solar capacity since the inception of the program three years ago.

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 second such yearly summary is presented in Appendix C of this Annual Report.

The past year also saw a continuation of OER's 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. Among the Governor's directives, OER oversees and coordinates activities across State government to reduce electric consumption by at least 10 percent below FY14 levels by the end of FY19, support a full transition toward renewable energy sources by 2025, integrate clean transportation solutions in the State's fleet, and establish a stretch building code for use in all State construction and renovation projects. Beyond the public sector, OER continues to advance and extend the multitude of economic, energy and environmental benefits associated with energy efficiency to previously underserved sectors and communities throughout Rhode Island, as evidenced by its ***Farm Energy Efficiency Program*** and the ***Block Island Saves Energy Efficiency Program***.

Also in 2016, 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 laid the groundwork in partnership with the PUC and DPUC to launch the ***Power Sector Transformation Initiative***, an effort to develop a more dynamic utility regulatory framework that will enable Rhode Island to achieve key policy objectives. OER continued the implementation of a ***System Reliability Procurement Solar Pilot*** in Tiverton and Little Compton, and completed a federally-funded ***Resilient Microgrids for Critical Services*** study to examine the potential for localized autonomous microgrids in Rhode Island.

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. As of January 1, 2017, DRIVE issued or reserved 157 rebates to Rhode Island EV drivers, totaling $349,500. In addition, OER launched 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.

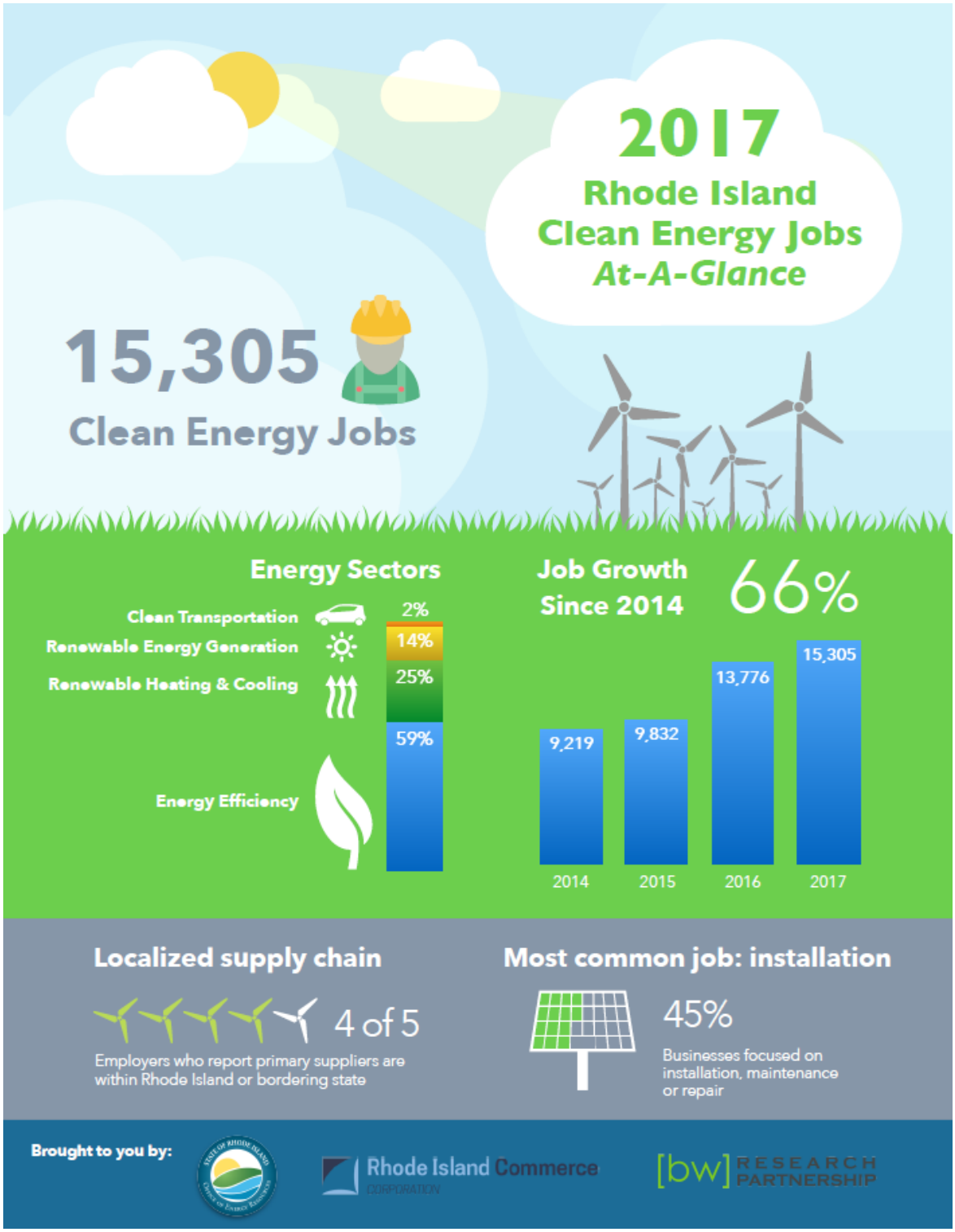
The aforementioned successes and initiatives demonstrate OER's commitment to advancing the state's interests through local actions, however, achievement of Rhode Island's short- and long-term energy, economic, and environmental goals is intricately linked to those of the New England region as a whole. Therefore, in 2016, OER continued to strengthen its collaboration with other New England states on a series of regional energy issues. For example, OER supported Rhode Island's participation in the issuance of the region's first ***Multi-State Clean Energy Request for Proposals (RFP)***, intended to identify clean energy and/or clean energy transmission projects to meet the participating states' shared clean energy goals in a cost-effective manner.

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 2017 Rhode Island Clean Energy Jobs Report. Now more than 15,300 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 66 percent. Just this past year, it increased by 11 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 fourth most energy-efficient state in the country in 2016 (the state has ranked in the top ten for nine years in a row). The state's commitment to energy efficiency not only saves customers money, but drives significant job growth—in 2016, 923 companies were involved with delivering energy efficiency, with 82 percent of those companies located in Rhode Island. In 2016, OER continued efforts to advance the state's leadership in energy efficiency, with a particular focus on promoting access to energy efficiency in underserved sectors and communities.

LEAST-COST PROCUREMENT ENERGY EFFICIENCY PROGRAMS

OER supports the development and implementation of the state's electric and natural gas energy efficiency programs for residents and businesses. First, OER's 2016 Regional Greenhouse Gas Initiative (RGGI) Allocation Plans earmarked $2 million for the energy efficiency programs delivered by National Grid, as well as $1 million to provide energy efficiency incentives for residential delivered fuels (heating oil and propane) customers. Support for these programs is consistent with Least-Cost Procurement mandates; helps achieve lowest-cost, carbon-free energy savings; and supports local economic investment and job growth. As important, these dollars were leveraged with System Benefits Charge (SBC) funds to help ratepayers save 214,329 megawatt -hours (MWh) of electricity (2.8% of electric consumption) and 417,820 million Btu (MMBtu) of natural gas (1.2% of natural gas consumption), producing $355.9 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.

In the first round of financing, the fund provided over $17 million to six communities. These projects are expected to save their communities almost $19 million after debt service through energy savings and the production of renewable energy. Currently, OER and RIIB are working together to finalize project eligibility and complete another financing round in October 2017. For more information on the EBF, please visit: www.energy.ri.gov/RIEBF.

BUILDING LABELING WORKING GROUPS

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. OER began leading two Building Labeling working groups in 2015, focused on the residential building sector and the commercial/industrial/ municipal building sector, respectively. The working groups are keeping OER abreast of building labeling efforts across the nation while helping OER explore both voluntary and pilot program options for building labeling in Rhode Island. For more information on Building Labeling, please contact Becca Trietch at Becca.Trietch@energy.ri.gov.

ZERO ENERGY BUILDINGS

In 2016, National Grid led the Rhode Island Zero Energy Building (ZEB) taskforce consisting of key stakeholders from the State, associations, architects, engineers, and developers. Over the

course of the year, the Task Force developed and issued a whitepaper report. The report outlines a 20-year roadmap for zero energy buildings to contribute to the state's goal of reducing greenhouse gas emissions by 45% by 2035. Opportunities including stakeholder collaborations, incentives, education, financing, and policies that will help foster the growth of the residential and commercial Zero Energy Building market in Rhode Island were also identified. After the release of the report at the end of 2016, OER assumed the lead role in the state for implementing the report's recommendations. For more information on Zero Energy Buildings, please contact Becca Trietch at Becca.Trietch@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 April 2016, the program was opened to all Rhode Island farmers on a first-come-first-served basis, offering free energy assessments and access to incentive programs. 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 ENERGY EFFICIENCY PROGRAM

In 2015, OER began an initiative to help New Shoreham (Block Island) residents and small businesses improve their energy efficiency and reduce energy costs. During recent years, Block Islanders have paid some of the highest energy prices in the nation. Despite this fact, New Shoreham did not have access to a comprehensive suite of energy efficiency programs, services, or educational tools. Therefore, OER developed and implemented a pilot energy efficiency program to fill this void in statewide energy efficiency services. The Block Island Saves program is designed to reduce New Shoreham small business and year-round resident energy consumption and costs, support the State's clean energy economy, and shrink the island's carbon footprint. The program has leveraged the best practices and supply chains of the state's highly-successful and innovative mainland energy efficiency programs.

Working in partnership with National Grid, OER launched the program in late 2015 to provide year-round residents and commercial establishments with free, no-obligation energy audits that identify energy efficiency opportunities; provide access to incentives and rebates; and educate consumers on additional actions that can be taken to reduce their utility bills. As of April 2017, over 225 MMBtu and 180,000 kWh of annual savings have been achieved on the Island. For more information on the Block Island Saves Energy Efficiency Program, please contact Carrie Gill at Carrie.Gill@energy.ri.gov.

Since 2008, Rhode Island has realized $2.3 billion in economic benefits from energy efficiency — or $4 in benefits for every $1 of ratepayer-supported investment in energy efficiency.

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 2016 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. The students and teachers from eight 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 five in 2016.

* North Scituate Elementary; Western Coventry Elementary; Tiogue Elementary (Coventry); Deering Middle (West Warwick); Park View Middle (Cranston); Calcutt Middle (Central Falls); Nathan Bishop Middle (Providence); and Scituate High.

Pictured above: Students from Calcutt Middle School in Central Falls 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 2016, 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. 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.

BLOCK ISLAND OFFSHORE WIND PROJECT

In December 2016, the 30 megawatt (MW) Block Island Offshore Wind project became the first

In March 2017, Governor Gina M. Raimondo announced a strategic goal to increase the amount of clean energy in the state by 10 times by the end of 2020.

offshore wind project in the country. The project, which started construction in July 2015, is capable of powering about 17,000 homes, or about 1% of the state's electricity. Over 300 local workers were involved in building the project, and Deepwater Wind, the developer, used four Rhode Island ports—Block Island, Galilee, Quonset Point, and ProvPort—to complete construction and staging. The new wind farm allowed Block Island to shut down the diesel-fired power plant that had previously provided power to the island, saving nearly 1 million gallons of fuel per year. For more information on the Block Island Offshore Wind project, please visit: www.energy.ri.gov/renewable-energy/wind/offshore-wind.php.

SOLARIZE RHODE ISLAND

In 2016, OER continued its partnership with the Renewable Energy Fund at Commerce RI and non-profit SmartPower to implement the state's third 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.

The municipalities of Providence, Warren, and Bristol were chosen for the Spring 2016 campaign. A campaign in Warwick took place in the Fall 2016. To date, the three program years have accumulated 479 signed contracts for 3.4 MW of solar capacity. Additionally, hundreds 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 fifth Solarize Rhode Island campaign kicked off in June 2017. For more information on Solarize Rhode Island, please visit: www.energy.ri.gov/policies-programs/programs-incentives/solarize-ri.php.

Solarize Rhode Island, a partnership between the Rhode Island Office of Energy Resources, Commerce RI, and SmartPower, has helped hundreds of residents and businesses sign up for solar systems.

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 three years of program implementation, tariff payments were approved for more than 1,700 small solar projects to homeowners across the state; over twenty medium, commercial, and large solar projects; and five commercial-scale wind turbines. For more information on the REG Program, please visit: www.energy.ri.gov/policies-programs/programs-incentives/reg-program.php.

LAND-BASED, LARGE-SCALE WIND SITING GUIDELINES

In 2015, OER undertook a review of Rhode Island's current large-scale, land-based wind siting guidelines. The review resulted in the drafting of a new document with updated information and recommendations to assist municipalities interested in wind development as they develop their own wind siting ordinances. The guidance document includes information on safety setbacks, noise, shadow flicker, and wind-specific environmental impacts. The document was finalized in January 2017 after a public comment period. In addition to the guidance document, OER continues to offer technical assistance to municipalities interested in crafting large-scale, land-based wind siting ordinances. For more information on wind siting guidelines, please visit: www.energy.ri.gov/renewable-energy/wind/wind-siting.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.

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. The Office is actively working to establish a web-based platform in 2017 to provide State agencies with better online data access.

ENERGY EFFICIENCY PURCHASING MECHANISMS

OER, in partnership with the Division of Purchases, has developed two purchasing mechanisms to support energy efficiency and renewable energy projects. Master Price Agreement (MPA) 508 provides state agencies and other public entities with access to vendors that can deliver turnkey energy efficiency projects. Continuous Recruitment (CR) 44 gives access to renewable energy installers that can provide small to medium-scale solar and/or wind installations. Both 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. 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 leveraging 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 projects, conduct building energy audits, and streamline the use of utility incentive and rebate programs.

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 re-

newable 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, three solar installations are under construction on the Capitol Hill complex and plans for other 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 2017, the Office of Energy Resources recognized eleven (11) state government agencies, quasi-public agencies and municipalities for their renewable energy and energy efficiency achievements at its inaugural 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/.

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.

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 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 launched the Power Sector Transformation (PST) Initiative, an effort focused on four work streams:

1. utility business model;
2. grid connectivity and functionality;
3. distribution system planning; and
4. beneficial electrification of heating and transportation.

Through the PST Initiative, the three agencies are bringing together Rhode Island stakeholders, industry experts, and decision makers to identify

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.

solutions in these four areas and craft proposals for near-term implementation. 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 2017, OER will continue to monitor and evaluate Pilot results. Preliminary estimates indicate that the Pilot solar resources could provide enough peak load reduction to defer the proposed feeder by two to four years. For more information on the SRP Solar DG Pilot, please visit: www.energy.ri.gov/electric-gas/future-grid/oer-system-reliability-solar.php.

RESILIENT MICROGRIDS FOR CRITICAL SERVICES

In Fall 2014, OER was awarded Hurricane Sandy Community Development Block Grant Disaster Recovery (CDBG-DR) funds to implement a proposed "Energy Resilience Project" centered on the use of resilient microgrids for critical services. Microgrids are localized grids that can disconnect from the traditional grid to operate autonomously and help mitigate grid disturbances to strengthen grid resilience. In 2015, OER issued a Request for Proposals for a vendor with expertise in microgrid marketplace and policy to help develop a list of potential host sites for microgrid implementation. The selected vendor evaluated policy and program options to promote microgrids in the state, completing a final report with recommendations in 2016. For more information on the Resilient Microgrids for Critical Services Project, please: www.energy.ri.gov/reports-publications/past-projects/resilient-microgrids-for-critical-services.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 $1.1 billion of energy costs and 3.9 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 2016, 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.

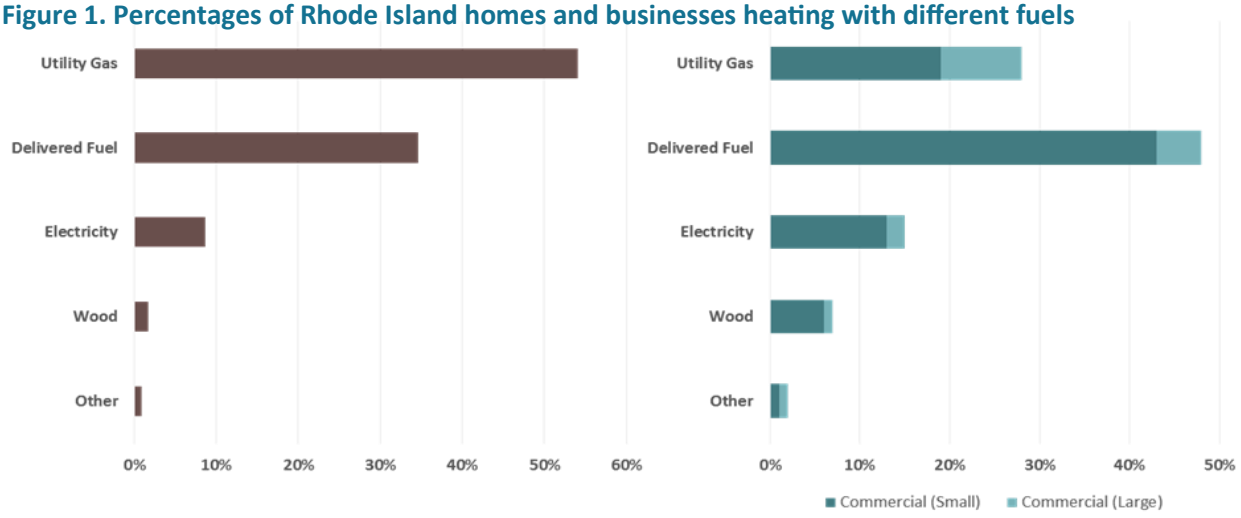
RENEWABLE THERMAL MARKET DEVELOPMENT STRATEGY

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 2016, 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. For more information on the Fuel Dealer Clean Energy Action Plan, please contact Danny Musher at Danny.Musher@energy.ri.gov.

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 nearly 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 $1.4 billion is spent on transportation-related energy costs, and the sector releases 4.5 million tons of CO_2 into the atmosphere. Throughout 2016, 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

In 2016, OER successfully completed its first year of the DRIVE electric vehicle (EV) rebate program. DRIVE provided up to $2,500 off the purchase or lease of a new electric vehicle, based upon battery capacity. As of January 1, 2017, DRIVE had issued or reserved 157 rebates to Rhode Island EV drivers, totaling $349,500. Eleven models of EVs have been funded through the program, with 15 different dealerships participating. DRIVE is successfully contributing to the increased adoption of cleaner transportation alternatives by Ocean State drivers – since the program commenced, EV adoption is up 32 percent across state roadways. As of July 10, 2017, DRIVE has been suspended due to unavailability of program funding. For more information on DRIVE, please visit: www.drive.ri.gov.

CHARGE UP!

OER launched the Rhode Island Charge Up! Public Sector Vehicle Electrification Incentive Program in July 2016. Charge Up! offers incentives to state agencies and municipalities interested in installing electric vehicle supply equipment (EVSE or charging stations) and supports the purchase or lease of electric vehicles (EVs) for integration into public sector fleets. Qualified public sector applicants are eligible to receive a total award of up to $75,000 to support their adoption of clean transportation solutions. As of January 1, 2017, six charging stations have been installed along with one electric vehicle purchase. The program has issued or reserved $142,500 in incentives to four applicants: the Rhode Island Public Utilities Commission, the Rhode Island Department of Administration, and the Towns of Coventry and West Warwick. For more information on Charge Up!, please visit: www.energy.ri.gov/transportation/ev/charge-up.php.

NATIONAL DRIVE ELECTRIC WEEK

In September 2017, OER – in partnership with the Rhode Island Department of Environmental Management (DEM) and Ocean State Clean Cities – held the third annual National Drive Electric Week (NDEW) event at Garden City Center, Cranston. The NDEW event was again one of the largest held in New England, with over 35 electric vehicles and 130 registered attendees. The event highlighted the benefits of driving an electric vehicle, offered sales pitch-free ride-and-drive opportunities, and showcased seven different models of electric cars that are available for sale in Rhode Island. New to 2016 was an "ask an expert" panel discussion, where charging station providers and dealerships were able to talk about their products and field questions from the public. For more information on National Drive Electric Week, please contact Ryan Cote at Ryan.Cote@energy.ri.gov.

DRIVE CLEAN RHODE ISLAND CAMPAIGN

In 2016, OER, in partnership with the Rhode Island Department of Environmental Management (DEM), Ocean State Clean Cities, and Plug-In America, launched DRIVE Clean Rhode Island, a campaign to raise awareness for zero emission vehicles (ZEVs). The coalition hosted two free ride-and-drive events that saw over 160 people experience ZEVs, either through driving or riding along. Pre and post surveys indicated 100% of participants had a positive test drive experience, with 70% saying they are more likely to purchase an EV. For more information on the DRIVE Clean Rhode Island Campaign, 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

Electric vehicle registrations increased by 41% in 2016, with total registered EV's growing from 538 to 757. *(Source: Rhode Island Department of Motor Vehicles)*

Electric vehicle charging stations in the Department of Administration parking garage, installed as part of the State's ongoing efforts to Lead by Example in clean energy.

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 economic, energy and environmental goals is also intricately linked to those of the New England region as a whole. Rhode Island is part of a highly-integrated energy system with significant implications for state and regional economic competitiveness, investment and job growth opportunities, retail-level energy costs, and fulfillment of carbon reduction targets. 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

Throughout 2016, OER 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 is leveraging state and regional strategies to advance Rhode Island's policy goals.

Bid evaluation concluded in October 2016. The three states collectively selected projects that represent approximately 460 MW of clean energy for the New England market. In Rhode Island, applicable clean energy contracts are anticipated to be filed with the Public Utilities Commission for regulatory review and approval in 2017.

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 2016 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 regional/national entities on numerous electric wholesale market issues; and
- Improving clarity, consistency, and transparency in regional electric transmission planning processes.

For more information on OER's regional work, please contact Nicholas Ucci at Nicholas.Ucci@energy.ri.gov.

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 $1,016,965 from the SBC in 2016 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, 2017, OER is staffed with twelve (12) full time state employees, and the SBC funding provides approximately 60 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 third 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 Working Groups, the Zero Energy Buildings Initiative, 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 the Block Island Offshore Wind Project;
- 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 2017.

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 six 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 2016, 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 fourth in nation in energy efficiency, the ninth year in a row that Rhode Island has scored in the top ten. Rhode Island's 2016 program achieved savings of 2.8% of electricity consumption and 1.2% of natural gas consumption, respectively, producing $355.9 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

Rhode Island has moved to reduce VMTs by strengthening transit in the state. Between 2014 and 2016, the State received two Transportation Investment Generating Economic Recovery (TIGER) grants totaling $13.8 million from the U.S. Department of Transportation for two transit-related projects: planning funds for an expanded transit hub at Providence Station and the development of a commuter rail station in Pawtucket and Central Falls, along with the associated Transit Oriented Development (TOD) being championed by the cities. The State is also working to reduce VMT through efforts to better coordinate existing transit service by co-locating park-n-rides with commuter rail stations, improving commuter rail schedules to better accommodate commuters, and honoring commuter rail passes on RIPTA buses. In addition, the State is seeking to collocate appropriate functions at or near commuter rail facilities statewide and providing free in-state train travel along the Providence-Warwick -Wickford commuter rail line from July through December 2017.

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 whitepaper 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. In addition, OER staff are currently meeting monthly with National Grid, the Green Building Advisory Council, the State Building Commissioner, and other key stakeholders to develop a voluntary stretch code for 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 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. Also 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.

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 has been suspended due to unavailability of program funding.

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 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 launched the Power Sector Transformation (PST) Initiative, an effort focused on four work streams: utility business model, grid functionality, distribution system planning, and beneficial electrification of heating and transportation.

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 2016, 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 2016 to further efforts to reduce the soft costs of renewable energy. In January 2017, OER finalized an updated guidance document on land-based wind siting, which provides Rhode Island cities and towns with the latest and best information as they consider establishing wind siting ordinances. Finally, in 2017, the General Assembly passed bills establishing a statewide solar permit (building and electrical) application; improvements to farm land value taxation rules; and updates to the renewable energy interconnection standard law to include specific deadlines for the completion of interconnection studies by the utility.

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 2016 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 offers the potential for the procuring states to meet their shared clean energy goals in a cost-effective manner. 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 2016, 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 2016-2017, 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. Achievements to date include procuring 20% of State facility electricity from renewable energy resources; reducing energy consumption across State facilities through energy efficiency projects; procuring alternative fuel vehicles for the light-duty State fleet; driving procurement of rooftop solar arrays for Capitol Hill facilities; overseeing the development of the State's first stretch building code; converting State-owned highway streetlights to cost-effective LEDs with control technology; and saving the State over $2.3 million in energy supply costs via competitive electricity and natural gas supply auctions.

Appendix D:

Regional Greenhouse Gas Initiative Annual Report

2016 Regional Greenhouse Gas Initiative Proceeds Investments Annual Report

2016 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 (CO_2) 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 2016-A and 2016-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 CO_2 pollution that power plants can emit by issuing a limited number of tradable CO_2 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 CO_2. Individual CO_2 budget trading programs in each RGGI state effectively create a regional market for the allowances, and leverage market forces to determine the most cost-effective means of reducing emissions while fostering market certainty to help drive long-term investment in cleaner energy sources. RGGI consists of nine participating states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

In Rhode Island, RGGI auction proceeds are allocated by the state's Office of Energy Resources (OER) to drive investment in – and expansion of – clean energy resources, including cost-effective energy efficiency and renewables. In doing so, OER seeks to support investment and job growth in Rhode Island's burgeoning clean energy sector; reduce barriers to consumer adoption of clean energy solutions; place downward pressure on long-term energy costs; and shrink carbon footprints. Through the periodic adoption of RGGI Allocation Plans, OER has leveraged auction proceeds with utility ratepayer-derived capital to drive wide-scale deployment of energy efficiency measures consistent with the state's least cost procurement mandate. Moreover, in recent years, OER has also focused on extending the many economic and environmental benefits of clean energy to underserved sectors of our local economy.

As indicated by the program summaries 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 CO_2 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) days notice of the public hearing. At the conclusion of the public hearing, OER allows an additional ten (10) day period for interested persons to submit data, views or arguments in writing. At the conclusion of the public comment period, OER provides a written response to each substantive public comment. OER maintains a record of all the public comments raised during the public participation process; finalizes the allocation plan; and posts a copy of the finalized plan 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 2016-A & 2016-B Allocation Plans

Plan	Finalized	# of Auctions	Auctions Held	Gross Proceeds
2016-A Plan	March 2016	2	September 2015 & December 2015	$7,232,876.62
2016-B Plan	September 2016	2	March 2016 & June 2016	$4,496,881.80

As shown in the chart above, OER issued two RGGI allocation plans in 2016, 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 $37,741.29, as indicated in the 2016-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 $1,172,975.84 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 of $10,519,041.29 was invested in the following clean energy programs and initiatives:

Electric Energy Efficiency Programs and Least Cost Procurement

Consistent with the state's Least Cost Procurement (LCP) mandate, approximately $2 million of auction proceeds in the 2016-B Allocation Plan were dedicated to support the deployment of cost-effective energy efficiency programs and incentives across Rhode Island's consumer base. Importantly, these dollars have been leveraged with ratepayer funds collected by National Grid through a Systems Benefit Charge (SBC) to deliver innovative energy efficiency programs that have made Rhode Island a national leader in this field. Rhode Island's LCP mandate requires that electric and natural gas distribution companies invest in all energy efficiency resources that have a lower cost of acquisition than traditional supply. Without energy efficiency measures installed between 2009 and 2017, Rhode Island customers would have had to purchase 14% more energy at a much higher cost.

The energy efficiency programs supported by SBC and RGGI dollars help bring clean energy solutions to Rhode Island's Residential, Income Eligible, Commercial and Industrial sectors; achieve lowest-cost, carbon-free energy savings; and support local investment and job growth. Energy efficiency plays a vital role in reducing energy costs for Rhode Island residents and businesses. The Rhode Island State Energy Plan (SEP) identifies energy efficiency as the states "first fuel" and the centerpiece strategy for achieving the Rhode Island Energy 2035 Vision. The SEP identifies energy efficiency as the lowest risk, lowest cost, and arguably, the most sustainable energy resource available for Rhode Island. For every $1M invested in the energy efficiency sector 45 job-years of employment are created. Likewise, every $1 invested is estimated to boost Gross State Product by $4.20.

RGGI allocations provided to utility-administered energy efficiency programs have had the direct effect of reducing the SBC charge on customer utility bills, supporting Rhode Island's position as an innovative national energy efficiency leader, and growing clean energy jobs throughout the state. Rhode Island has ranked in the top ten states in the nation for eight years in a row and was scored 4th in 2016 by the American Council for an Energy Efficient Economy (ACEEE). This top-tier ranking clearly indicates that Rhode Island's energy efficiency programs are national models.

For more information on the state's energy efficiency programs, please visit: www.energy.ri.gov/efficiency.

For more information on energy efficiency programs and incentives offered through National Grid, please visit: www.nationalgridus.com/RI-Home/Energy-Saving-Programs/.

Program Title	Description	kWh Savings (ann. est.)
Energy Efficiency Programs/ Least Cost Procurement	Funding provided to National Grid for 2017 EE Programs and reduce SBC	4,027,000

Rhode Island Infrastructure Bank – Efficient Buildings Fund

Established under RIGL §46-12.2-4.2, the Efficient Buildings Fund (EBF) is a revolving loan fund administered by the Rhode Island Infrastructure Bank (RIIB) to finance energy efficiency and renewable energy projects for municipal buildings and school facilities, as well as quasi-governmental agencies. The purpose of this program is to provide financial assistance to local governmental units for deep energy savings projects where the energy savings achieved by the project exceed the debt service.

In the state's 2016-B RGGI allocation plan, OER committed $2 million to help capitalize two rounds of funding through the EBF, ultimately supporting $16 million in clean energy loans to seven municipalities. The clean energy projects supported by these investments included cost-effective LED street-

lights, programmable thermostats, high efficiency indoor lighting, heating and cooling systems and boiler replacements.

Round 1 of the EBF was capitalized with $1.8 million in SBC-derived dollars and $3.0 million in previously-allocated RGGI funds. These funds supported $9.8 million in energy efficiency project transactions with an average energy reduction of 35 percent for the portfolio of improvements, totaling 5,988 annual MWh and 3,147 MMBtu. Comprehensive efficiency projects were implemented in four communities and one school district. Measures included LED streetlights with controls, boilers and furnaces, energy management systems, insulation and air sealing, hot water heaters, Wi-Fi programmable thermostats, motors and drives, and indoor LED lighting. In total, EBF closed $17.2 million in attractive long-term financing for both efficiency and renewable energy projects in six communities that reduced public sector energy and maintenance costs and resulted in cash flow positive projects that also support clean energy jobs here in Rhode Island.

Lead by Example – Supporting Clean Energy Investments Across the Public Sector

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

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

To support achievement of these important clean energy goals across state government, OER allocated approximately $4.7 million in the 2016-A Plan to support and implement energy efficiency and renewable energy projects at Rhode Island state facilities. Energy efficiency improvements and renewable energy installations at buildings and facilities owned and operated by the State offer the potential to significantly reduce short- and long-term energy consumption and costs, while supporting local economic growth and job creation. Consequently, these projects will benefit taxpayers in Rhode Island and advance Rhode Island's energy and environmental goals. This program will seek to leverage other existing incentives, funding streams, and programs, where appropriate.

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

Project Title	Project Description	kWh Savings (ann. est.)	Nameplate kW Generation (est.)
Capitol Hill Solar Project	Solar PV design/construction at Powers, DOT, Canon buildings	NA	287.84 kW
Pastore Building #61	Energy Efficiency Improvements	169,461	NA

Powers Building, Capitol Hill Complex — 180 kW Solar PV Installation

Residential Delivered Fuels Program

OER allocated $1.0 million of RGGI funds in the 2016-A Plan to support energy efficiency incentives for residential customers with homes heated by delivered fuels (oil, kerosene, and propane). These funds were administered by National Grid, in collaboration with OER, and has allowed the utility to continue offering incentives for homes heated by delivered fuels, all of whom are also electricity customers. Such investments capture electricity savings, including savings from oil-heated homes with air conditioners; achieve reductions in carbon emissions associated with more efficient use of delivered fuels; and prevent market disruptions for installation contractors, thus supporting local businesses.

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

In recent years, OER's RGGI allocations have helped fill part of the funding gap as it applies to address-

ing delivered fuels efficiency. However, these funds are not sufficient in the short- or long-term to address market demand and consumer needs in this sector. OER is working with its stakeholder partners to identify new and innovative ways to reduce consumer costs and carbon emissions across Rhode Island's delivered fuels sector.

Project Title	Participants	kWh Savings (ann. est.)	MMBtu Savings (ann. est.)
Residential Delivered Fuels Program	1,558 participants received weatherization assistance	231,294	17,305

Solarize Rhode Island

Solarize Rhode Island is a targeted marketing and education campaign aimed at increasing the adoption of small-scale solar across Rhode Island communities. Administered by OER, the program received $300,000 of RGGI funds from the 2016-A allocation plan.

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

The municipalities selected for the Spring 2017 program are Charlestown and Cranston. As of August 30, 2017, thirty-nine (39) contracts have been signed in these two communities with a contracted capacity of 250.97 kW of new solar energy. Past Solarize communities include North Smithfield, Tiverton, Little Compton, Foster, Barrington, South Kingstown, Providence, Warwick, Bristol, and the Aquidneck Island communities of Middletown, Newport and Portsmouth.

Kick-off Meeting of Solarize Rhode Island in Charlestown, June 2017

Microgrid Development

OER allocated $500,000 of RGGI funds in the 2016-A Plan to support microgrids in Rhode Island, including, but not limited to, the design and development of a microgrid demonstration project to strategically deploy energy efficiency and distributed resources (renewable, storage, etc.) for resilient energy surety at critical State facilities. Moreover, the availability of RGGI dollars to support microgrid work will facilitate OER's ability to seek and leverage current/future external funding sources on microgrid development and deployment. This program remains under development as of the date of this report, but builds on in-depth research conducted by OER on how resilient microgrids can be deployed to support critical services in the state. A report on this work, including descriptions of microgrid technologies, procurement strategies, and polices that can contribute to microgrid development, can be found at: www.energy.ri.gov/reports-publications/.

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