



STATE OF RHODE ISLAND  
**OFFICE OF  
ENERGY RESOURCES**

# 2016 Annual Report



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# LETTER FROM THE COMMISSIONER

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

Honorable M. Teresa Paiva Weed, 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 2016 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:



- Establishment of the Rhode Island Infrastructure Bank, which is already fostering the implementation of cost-effective efficiency and other clean energy investments throughout our public sector and deploying Property-Assessed Clean Energy (PACE) programs for our commercial sector (with a residential program in development);
- Extension of the state's Least Cost Procurement mandate until 2024, which serves as a critical foundation to Rhode Island's energy policy portfolio and is driving energy and cost savings across all sectors while growing local jobs;
- Expansion of the state's Renewable Energy Standard, creating a goal of supplying 38.5% of all electricity retail sales in Rhode Island from renewable energy resources by 2035;
- Extension of the Renewable Energy Fund until 2022, which provides critical financial and technical support to the state's rapidly growing clean energy economy; and
- Improvements to the state's policies on third-party financing, virtual net metering, shared solar, community remote distributed generation, and taxation of renewable energy projects.

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 now employs nearly 14,000 workers throughout the state and grew by a staggering 40 percent between 2015 and 2016. The report also found that energy efficiency employment represents six in ten clean energy workers, and renewable energy jobs increased by 84 percent. The clean energy sector is also becoming increasingly diverse, with new employment opportunities across a range of industries, job classifications, and skill levels. With new developments just over the horizon, such as the nation's first offshore wind farm, and sustained support for clean energy policies, Rhode Island's clean energy sector will continue to accelerate job and investment growth.

OER has also made a concerted effort to address public sector energy costs throughout State agencies and municipalities. Between 2013 and 2015, our agency partnered with Rhode Island cities and towns and National Grid to drive substantial energy reductions across municipal, school, and state facilities through the Rhode Island Public Energy Partnership. Energy data baseline inventories were established for all public facilities, and energy efficiency projects were implemented in 123 buildings for total energy savings of 28.6 percent.

Under the Governor's "Lead by Example" Executive Order, OER is embarking on a similar process for State agencies, with a goal of reducing energy costs by ten percent by FY19 and shifting the State's

energy supply portfolio to 100 percent renewables by 2025. Importantly, the efficiency and renewable investments being made across the public sector are supporting jobs and industry, reducing public sector energy burdens, and mitigating greenhouse gas emissions throughout our communities.

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.

On a final note, I would like to acknowledge and thank former Commissioner Dr. Marion S. Gold for her leadership at OER over the past several years. Many of the accomplishments documented in this Annual Report would not have been possible without her vision and hard work.

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 municipalities

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 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](http://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 fifteen marked a year of incredible 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 new, growing clean energy sector. In April 2016, OER released its second annual **Clean Energy Jobs Report**, which found that employment in Rhode Island's clean economy increased by a staggering 40 percent over 2015, far exceeding the projected growth rate of 17 percent. Clean energy jobs now support about 14,000 workers across the state, representing three percent of statewide employment. 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 2015, OER continued to advance Rhode Island as a national energy efficiency leader and innovator. The state's **nationally-recognized energy efficiency programs** achieved unprecedented savings of 2.91% of electricity consumption and 1.18% of natural gas consumption, producing \$386.4 in economic benefits to Rhode Island. The past year also marked the conclusion of OER's highly-successful three-year municipal energy efficiency initiative –

the **Rhode Island Public Energy Partnership (RIPEP)**. RIPEP, which was supported by an award issued through the U.S. Department of Energy, developed energy data baseline inventories for all public facilities in the state, and implemented projects that achieved total energy savings of 28.6 percent. Finally, thanks to the leadership demonstrated by Governor Raimondo, Treasurer Magaziner, and the General Assembly in establishing the Rhode Island Infrastructure Bank (RIIB), OER worked in collaboration with other key agencies to launch the first round of the **Efficient Buildings Fund (EBF)**. The EBF, which is designed to provide financial assistance to local governmental units for deep energy-saving

projects, received 27 applications for a total of \$60 million.

The past year also marked major milestones for the state's renewable energy sector. With construction now underway on the **nation's first Offshore Wind Farm** off the coast of Block Island – slated to commence operation in late 2016 – Rhode Island is at the precipice of realizing new and dynamic economic and clean energy growth opportunities. Moreover, the successful launch of the new **Renewable Energy Growth Program**,

enacted by the General Assembly in 2014, resulted in over 150 solar projects awarded to homeowners, as well as a dozen larger commercial-scale projects and three commercial-scale wind turbines. Finally, the successful **Solarize Rhode Island** program, which is administered by OER, engaged hundreds of residents throughout nine municipalities, with a total of 389 home and business owners signing contracts for almost 3 MWs of solar capacity.

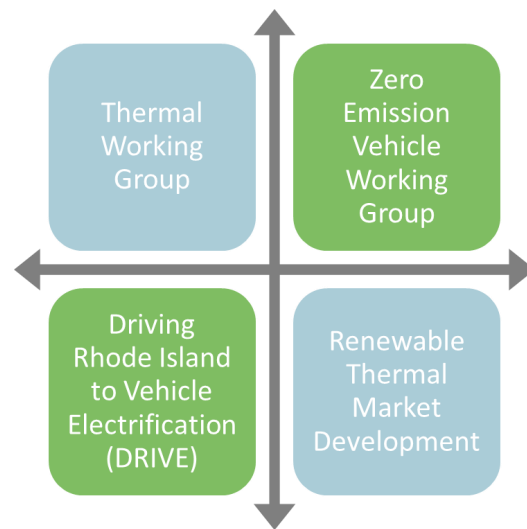
In 2015, the State Planning Council voted to formally adopt **Energy 2035** – the state's first data-driven long-term energy planning and policy document – as an element of the State Guide Plan. Energy 2035 found that Rhode Island can increase sector fuel diversity, produce net economic benefits, and 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 first such yearly summary is presented in Appendix C of this Annual Report.



During 2015, OER also supported several important research and stakeholder initiatives to build the foundation for future clean energy programs in the state’s heating and transportation sectors. In 2015, OER’s **Thermal Working Group** released a comprehensive report with recommendations to extend the full benefits of energy efficiency to heating customers using delivered fuels, such as oil and propane. OER is also spearheading the development of a stakeholder-informed **Renewable Thermal Market Development Strategy** report on stimulating the state’s clean heating sector. On the transportation side, OER convened a **Zero Emission Vehicle Working Group** that developed strategies to grow the market for ZEVs in Rhode Island. OER also launched the state’s first electric vehicle rebate program to support adoption of electric vehicles by Ocean State drivers: **Driving Rhode Island to Vehicle Electrification (DRIVE)**.

In addition, 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 led a **Systems Integration Rhode Island (SIRI)** working group, which issued a white paper on key issues related to the future of the state’s electric distribution system. OER continued the implementation of a **System Reliability Procurement Solar Pilot** in Tiverton and Little Compton, and initiated a federally-funded **Resilient Microgrids for Critical Services** project to examine the potential for localized autonomous microgrids in Rhode Island.

The past year also saw an extension of OER’s work to reduce public sector energy costs beyond the municipal sector to State government. 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. 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 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**, the **Block Island Saves Energy Efficiency Program**, and investments in LED lighting across the **Pascoag Utility District**.

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 2015, OER continued to strengthen its collaboration with other New England states on a series of regional energy issues. For example, OER led Rhode Island’s active 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's clean energy economy is becoming a powerful engine for job creation and business development. Strong state support for energy efficiency and renewable energy policies have stimulated a robust market for clean energy goods and services, making Rhode Island home to a new, growing clean energy industry. In April 2016, OER released the second annual Clean Energy Jobs Report, which found that employment in Rhode Island's clean economy increased by a staggering 40 percent over 2015, far exceeding last year's projected growth of 17 percent.*

Clean energy jobs now support about 14,000 workers across the state, representing 3 percent of statewide employment.

The Clean Energy Jobs Report highlighted several key takeaways regarding Rhode Island's burgeoning clean energy economy. First, the state's clean energy economy is primarily composed of energy efficiency workers. Energy efficiency technologies currently represent six in ten clean energy workers; these firms increased employment by 57 percent during the past year. Growth in this sector stems in part from changes in the way traditional building trades are operating – for instance, expanding their product lines and increasingly offering energy efficiency services and technologies. Despite employment gains, this sector still is experiencing barriers to growth, notably hiring difficulty due to lack of industry-specific knowledge, training, and technical skills.

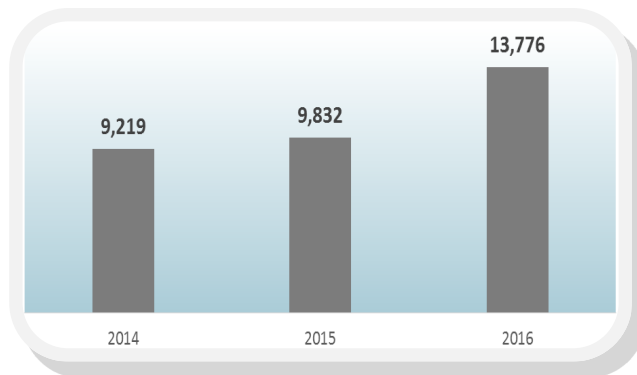
Second, although renewable generation firms represent a smaller portion of the Rhode Island's clean energy economy, this sector showed remarkable growth in 2015, with employment increasing by 84 percent and supporting an additional 907 workers. While it remains a smaller portion of the clean economy, optimism regarding the state's current offshore wind energy project as well as third-party ownership

and financing of solar projects may signal that renewable generation is on pace to continue this growth in the short term.

Third, Rhode Island's clean energy economy saw impressive growth across all value chain activities. Installation services continue to account for the majority of statewide clean energy work. In 2015, clean energy firms focused on installation and maintenance (46 percent) and trade and distribution (45 percent) experienced the highest growth, followed by engineering, research, and professional services (28 percent). Additionally, the state's clean energy economy is still largely comprised of small businesses. About seven in ten firms employ one to five employees; this is up 61 percent from 2014. Also, clean energy establishments have seen growth among their in-state customer base, however, fewer firms are sourcing their supplies from in-state vendors. Finally, clean energy has become a main source of revenue for more firms across the state: only a quarter of firms reported that all their revenue was derived from clean energy work in 2014; in 2015, this increased to four in ten firms that now attribute all their revenue to clean activities.

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

**Figure 1. Clean Energy Jobs in Rhode Island**



Clean energy jobs grew by 40 percent last year in Rhode Island. (Source: Clean Energy Jobs Report)

## 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 2015 (the state has ranked in the top ten for eight years in a row). The state's commitment to energy efficiency not only saves customers money, but drives significant job growth—in 2015, 1,009 companies were involved with delivering energy efficiency, with 79 percent of those companies located in Rhode Island. In 2015, 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.*

Since 2008, Rhode Island has realized \$2.67 billion in economic benefits derived from \$489 million in ratepayer-supported investment.

### 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 2015 Regional Greenhouse Gas Initiative (RGGI) Allocation Plan earmarked \$3.42 million for the residential, income eligible, and commercial and industrial energy efficiency programs managed and delivered by National Grid. 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 funds derived from ratepayers through the System Benefits Charge (SBC) to help ratepayers save 222,822 megawatt-hours (MWh) of electricity (2.91% of electric consumption) and 419,778 million Btu (MMBtu) of natural gas (1.18% of natural gas consumption), producing \$386.4 in economic benefits to Rhode Island. For

more information on the state's energy efficiency programs, please visit: [www.energy.ri.gov/efficiency](http://www.energy.ri.gov/efficiency).

### RHODE ISLAND PUBLIC ENERGY PARTNERSHIP

In 2012, OER was awarded a 3-year competitive grant from the U.S. Department of Energy to establish the Rhode Island Public Energy Partnership (RIPEP), a precedent-setting collaboration to achieve deep energy savings in municipal, school, and state facilities. Partners included OER, National Grid, the University of Rhode Island Outreach Center, Narragansett Bay Commission, the Energy Efficiency and Resource Management Council, and other key public and private sector representatives. At the completion of the project in September 2015, RIPEP achieved the following results:

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

Barriers to implementing energy efficiency in the public sector were identified and addressed through solutions including master price agreements, expanded and enhancing financing and incentive options, and extensive technical assistance. For more information on RIPEP, please visit: [www.energy.ri.gov/pep](http://www.energy.ri.gov/pep).

## EFFICIENT BUILDINGS FUND

Established under Rhode Island General Laws, Chapter 46-12.2-4.2, the Efficient Buildings Fund (EBF) is a revolving loan fund administered by the Rhode Island Infrastructure Bank (RIIB) (formerly the Rhode Island Clean Water Finance Agency) to finance energy efficiency and renewable energy projects for municipal buildings and school facilities as well as quasi-governmental agency buildings. The purpose of this program is to provide financial assistance to local governmental units for deep energy savings projects where the annual energy savings achieved by the project exceed the annual debt service. OER is responsible for soliciting, scoring and ranking applications to create a Project Priority List. In the first round of funding, OER scored and ranked 27 applications for a total of \$60 million – 20 for energy efficiency projects and 7 for renewable energy projects – from 19 municipalities and 8 school districts. RIIB made available approximately \$17 million in financing to selected applicants in July of 2016. For more information on the EBF, please visit: [www.energy.ri.gov/RIEBF](http://www.energy.ri.gov/RIEBF).

## BUILDING LABELING WORKING GROUPS

Building labeling tools produce a simple metric or label to summarize a building's overall energy efficiency, which allows 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](mailto:Becca.Trietch@energy.ri.gov).

## FARM ENERGY EFFICIENCY PROGRAM

Recognizing that farmers play a vital role in the economy, environment and sustainability of

Rhode Island, OER is working with National Grid to improve farm energy efficiency. Because farmers often rely heavily on delivered fuels and represent a hard-to-reach sector for standard energy efficiency programs, OER dedicated funds to jump-start a farm-specific energy efficiency program. Starting in 2014, OER supported comprehensive energy audits for eight pilot farms ranging from dairy to greenhouse operations. Findings from these audits were used to create auditing tools and to train two RISE Engineering auditors – National Grid's Small Business/Direct Install vendor – to provide energy assessments on Rhode Island farms. In April 2016, the program was opened to all Rhode Island farmers on a first-come-first-served basis, offering free energy assessments and access to incentive programs. For more information on the Farm Energy Efficiency Program, please visit: [www.energy.ri.gov/efficiency/farmenergy/](http://www.energy.ri.gov/efficiency/farmenergy/).

## BLOCK ISLAND SAVES ENERGY EFFICIENCY PROGRAM

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

Working in partnership with National Grid, OER allocated RGGI funds to launch a pre-pilot program in 2015 to provide 15 year-round residents and commercial establishments with free, no-obligation energy audits and incentive opportunities. The pre-pilot results indicated large potential for savings and high customer interest, with over 91,000 kWh and 280 MMBtus of annual savings achieved. Based on the success of the pre-pilot, the program's design and incentive offerings will remain the same for the rest of 2016, when Block Island Saves will be

open to all New Shoreham businesses and year-round residents on a first-come, first-served basis. For more information on the Block Island Saves Energy Efficiency Program, please visit: [www.energy.ri.gov/efficiency/BI/](http://www.energy.ri.gov/efficiency/BI/).

## PASCOAG UTILITY DISTRICT LIGHTING PROJECT

OER worked with the Pascoag Utility District (PUD) to accelerate the replacement of High Pressure Sodium (HPS) street lights with high efficiency LED lights. OER first offered funding assistance to PUD in 2014 using Regional Greenhouse Gas Initiative (RGGI) auction proceeds. Supplemented by PUD Demand Side Management (DSM) funds and capital funds, this grant enabled PUD to purchase and install 250 LED streetlights, for an annual cost savings of \$5,577 per year. In 2016, OER provided PUD with additional funding assistance to convert 610 more streetlights to LEDs. Per PUD's calculations, this



project will have an estimated payback period of approximately six years, while generating annual energy savings of 191,059 kWh and reducing annual rates by nearly \$15,500. Once completed, this LED conversion will reduce the community's



overall streetlight costs and its carbon footprint; improve the quality of roadway lighting and enhance public safety; and decrease utility maintenance and other operational costs. Importantly, with these 610 installations, approximately 86 percent of PUD's total streetlight assets will be powered by LEDs by the end of 2016. For more information on the Pascoag Utility District Lighting Project, please contact George Sfinarolakis at [George.Sfinarolakis@energy.ri.gov](mailto:George.Sfinarolakis@energy.ri.gov).



## RENEWABLE ENERGY

*Thanks to the leadership of policymakers in recent years, Rhode Island is home to a blossoming 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 2015, OER led efforts to expand customer access to renewable energy, bolster industry and job growth, and support the market through targeted guidance and engagement.*

### BLOCK ISLAND OFFSHORE WIND PROJECT

The 30 megawatt (MW) Block Island Offshore Wind project will be the first offshore wind project in the country. The project started construction in July 2015 with the installation of the jacket system foundations, which will support the 6 MW direct drive wind turbine installations. The five jacket system foundations were completed in October 2015, and the wind turbine towers arrived at the Port of Providence in November 2015. Installation of the cable that will connect the project to both Block Island and Narragansett at Scarborough State Beach began in January 2016. The wind turbine blades arrived at the Port of Providence in June 2016. The



installation of the wind turbine towers, nacelles and blades is expected to begin in August 2016, with the system becoming commercially operational by the end of 2016. For more information on the Block Island Offshore Wind project, please contact Chris Kearns at [Christopher.Kearns@energy.ri.gov](mailto:Christopher.Kearns@energy.ri.gov).

### SOLARIZE RHODE ISLAND

In Fall 2015, OER continued its partnership



with the Renewable Energy Fund at Commerce RI and non-profit SmartPower to implement the state's third round of Solarize Rhode Island campaigns across selected municipalities. Solarize is a targeted marketing and education campaign aimed at increasing the adoption of small-scale solar. Solarize initiatives educate residents and small businesses about solar and use a four-pronged strategy to reduce prices and drive participation: partnership with individual municipalities and community-driven outreach; limited time offer; competitively-selected solar installer; and a tiered pricing structure that lowers the price as participation increases. Two pilot rounds of the program were completed in North Smithfield, Tiverton, and Little Compton in 2014 and early 2015. The municipalities selected for the Fall 2015 program were Foster, Barrington, South Kingstown, as well as the Aquidneck Island communities of Middletown, Newport and Portsmouth.

During Spring 2015, the Solarize Little Compton and Tiverton program had 67 contracts signed for 485 kW of solar capacity, and more than 250 homeowner and business

owners learned more about solar PV. The Fall 2015 program results indicated that 250 customers signed contracts for more than 1.7 MW of solar PV capacity. A fourth Solarize Rhode Island campaign is being implemented in the first half of 2016. For more information on Solarize Rhode Island, please visit: [www.energy.ri.gov/renewable/solarize/](http://www.energy.ri.gov/renewable/solarize/).

## 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 throughout our energy system. In the first seven months of program

implementation, tariff payments were approved for more than 150 small solar projects; a dozen medium, commercial, and large solar projects; and three commercial-scale wind turbines. For more information on the REG Program, please visit: [www9.nationalgridus.com/narragansett/business/energyeff/4\\_dist\\_gen.asp](http://www9.nationalgridus.com/narragansett/business/energyeff/4_dist_gen.asp).

## 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 in order to support municipalities interested in wind development with the latest, up-to-date information on siting issues. The review resulted in the drafting of a new document with updated information and recommendations to assist municipalities 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 final document will be finalized in Fall 2016 after a public comment period. For more information on wind siting guidelines, please visit: [www.energy.ri.gov/renewable/landwind](http://www.energy.ri.gov/renewable/landwind).

**Figure 2. Installed Renewable Distributed Generation in Rhode Island**

Technology	Capacity (kW)	# of Systems
<b>Small Hydro</b>		
>25 kW	6,656	7
<b>Solar Photovoltaic</b>		
25 kW & under	4,208	734
>25 kW	19,183	56
	<b>23,391</b>	<b>790</b>
<b>Wind</b>		
<100 kW	105	14
100 kW and greater	9,060	11
	<b>9,165</b>	<b>25</b>
<b>Grand Total</b>	<b>39,212</b>	<b>822</b>

As of December 31, 2015, Rhode Island was home to over 820 distributed generation projects (systems under 5 MW) comprising nearly 40 MW of installed renewable energy capacity. (Source: National Grid, Federal Energy Regulatory Commission)

## 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. 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. In 2015, OER advanced a number of initiatives under Lead by Example, including its work with the Department of Transportation to convert all State-owned highway streetlights to energy efficient LEDs by the end of 2016. This project has the potential to save hundreds of thousands of dollars in energy and equipment and maintenance costs annually, while enhancing the quality of and control over state roadway lighting.*

### ENERGY MANAGEMENT

OER is supporting State agencies by making energy consumption and cost data accessible online. OER is also working to centralize State agency energy data and billing for electric, natural gas, and delivered fuels 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.

### ENERGY EFFICIENCY PURCHASING MECHANISMS

OER, in partnership with the Division of Purchases, has developed a Master Price Agreement (MPA 508) for turnkey energy efficiency projects. This purchasing mechanism

expedites energy efficiency implementation by clearly defining proposal requisition processes and providing access to a pool of prequalified vendors.

### ENERGY PROCUREMENT

OER, working in collaboration with other divisions in the Department of Administration, recently conducted a competitive electric supply auction/procurement for all Executive agencies, Judicial, RIC/CCRI, and the quasi-state Resource Recovery Corporation. Similar efforts are now underway for the state's natural gas supply. OER is exploring options for further aggregating demand and leveraging public sector economies of scale to reduce utility supply costs in future procurement efforts.

### 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. Specifically, OER has partnered with National Grid to identify priority projects and streamline the use of utility incentive and rebate programs.



Governor Raimondo signs the "Lead by Example" Executive Order.

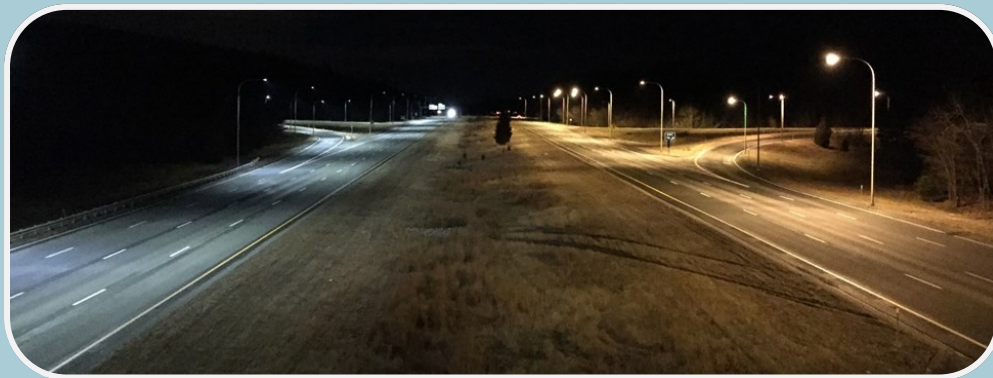


## RENEWABLE ENERGY PROJECTS

Consistent with the Governor's Lead by Example goals, OER is spearheading efforts to increase the adoption of renewable energy resources across State facilities. Investments in small-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. OER is providing administrative, technical, and other support resources to help State facilities move forward with renewables, with solar installations planned for the Capitol Hill complex in 2016. OER is also creating a Master Price Agreement for solar PV and small wind, which will establish a state-recognized list of pre-approved installers that can be utilized by state agencies and municipalities

alike. For more information on Lead by Example, please contact Becca Trietch at [Becca.Trietch@energy.ri.gov](mailto:Becca.Trietch@energy.ri.gov) or George Sfinarolakis at [George.Sfinarolakis@energy.ri.gov](mailto:George.Sfinarolakis@energy.ri.gov).

### **PROJECT HIGHLIGHT: STATE-OWNED HIGHWAY STREETLIGHTS CONVERTED TO LED TECHNOLOGY**



The RI Department of Transportation (RIDOT) is replacing approximately 7,000 high pressure sodium lighting fixtures (HPS) with LED luminaries and wireless lighting controllers statewide. OER allocated \$3 million in RGGI auction proceeds towards this goal. At the end of 2015 and continuing into early March 2016, RIDOT Maintenance crews installed a total of 700 LED lights and controllers on Routes 4 and 403 in Warwick, East Greenwich and North Kingstown, followed by Route 1, from Hampton Way to the William C. O'Neill Bike Path, in Wakefield. All state-owned highway lights will be replaced with LED technology by late Fall 2016.

Through this initiative, Rhode Island is poised to become the first state to shift all state-owned streetlights to new LED technology and to share best practices with municipalities interested in making a similar transition. The annual energy savings after the completion of this retrofit are projected to exceed \$1 million.

# 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. In 2015, OER spearheaded several planning and research initiatives designed to improve our understanding of the challenges and opportunities posed by our evolving electric grid.*

## SYSTEMS INTEGRATION RHODE ISLAND

During 2015, OER convened a "Systems Integration Rhode Island" (SIRI) working group to take a first step at mapping out key issues related to the future of Rhode Island's electric grid. The SIRI group brought together a collaborative group of representatives from OER, the Energy Efficiency and Resource Management Council, the Distributed Generation Board, and National Grid. The purpose of the SIRI group was to offer early stage recommendations for building upon existing processes to achieve objectives for an improved grid. The SIRI group issued a white paper in early 2016, which presents a vision and work plan to advance Rhode Island's energy goals by addressing opportunities and filling gaps in processes for grid planning, investment, and operation. For more information on Systems Integration Rhode Island (SIRI), please visit: [www.energy.ri.gov/siri](http://www.energy.ri.gov/siri).

## SYSTEM RELIABILITY PROCUREMENT SOLAR DISTRIBUTED GENERATION PILOT

OER's SRP Solar DG Pilot is an ongoing pilot to explore how distributed solar photovoltaics can provide value to Rhode Island's electric grid. The

Pilot's goal is to better understand the costs and benefits of solar distributed generation and its ability to reduce peak loads on the distribution system, possibly helping to defer traditional utility capital investments. The Pilot focuses on the towns of Tiverton and Little Compton, where National Grid projects the need for a new substation feeder estimated to cost \$2.9 million. In 2015, OER managed a successful Solarize campaign in these towns as well as an open market solicitation for projects, resulting in a total solar enrollment that exceeded original goals for adoption in the Pilot area. 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/reliability](http://www.energy.ri.gov/reliability).

## 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 will evaluate policy and program options to promote microgrids in the state, with a final report and recommendations to be issued by the end of 2016. For more information on the Resilient Microgrids for Critical Services Project, please contact Shauna Beland at [Shauna.Beland@energy.ri.gov](mailto:Shauna.Beland@energy.ri.gov).

## HEATING

*Heating and thermal energy use accounts for one-third of Rhode Island's statewide energy consumption. Annually, approximately \$1.1 billion is spent on thermal-related energy costs, and the sector releases 3.9 million tons of CO<sub>2</sub> into the atmosphere each year. Natural gas and petroleum-based delivered fuels (primarily heating oil and propane) supply nearly one-hundred percent of fuel use in this sector. Throughout 2015, 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.*

### THERMAL WORKING GROUP

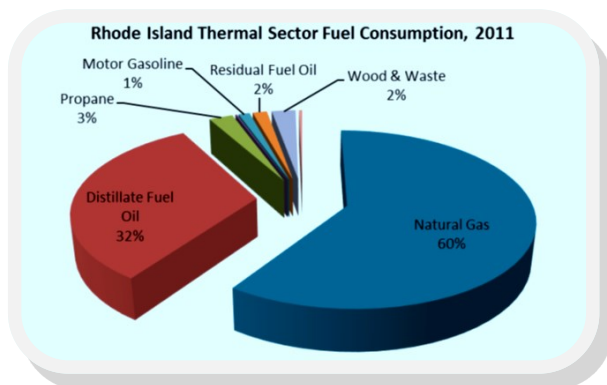
OER formed a Thermal Working Group in 2014 to evaluate how the state can better extend the full benefits of energy efficiency to heating customers using delivered fuels such as heating oil and propane. OER brought together industry, advocacy, utility, and state agency stakeholders to provide input into delivered fuels market assessment, energy efficiency potential, and

policy option analyses. The Working Group's research culminated in a report released in 2015 with recommendations for securing sustainable funding sources to support delivered fuels energy efficiency in the Ocean State. For more information on the Thermal Working Group, please visit: [www.energy.ri.gov/efficiency/thermal](http://www.energy.ri.gov/efficiency/thermal).

### RENEWABLE THERMAL MARKET DEVELOPMENT STRATEGY

In 2015, OER issued a Request for Proposals for a vendor to assist in the development of a strategy to strengthen the market for renewable thermal (heating and cooling) technologies in Rhode Island. Renewable thermal fuels—biomass, solar hot water, ground- and air-source heat pumps, advanced biofuels, and biogas—provide customers with cleaner and potentially more affordable options to meet their heating needs. In 2016, OER is working with a consultant team and a stakeholder-based task force to assess the potential for renewable thermal market growth in the state; calculate anticipated costs and benefits of a large-scale renewable thermal initiative; and identify key policies that will strengthen the market infrastructure for renewable thermal technologies. For more information on the Renewable Thermal Market Development Strategy, please contact Danny Musher at [Danny.Musher@energy.ri.gov](mailto:Danny.Musher@energy.ri.gov).

**Figure 3. Rhode Island Thermal Fuel Consumption**



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<sub>2</sub> into the atmosphere. Throughout 2015, 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 early 2016, OER launched the state's first electric vehicle rebate program to support adoption of electric vehicles by Ocean State drivers: Driving Rhode Island to Vehicle Electrification (DRIVE). Through DRIVE, qualified Rhode Island residents interested in purchasing or leasing an electric vehicle (EV) can apply for a



financial rebate of up to \$2,500, based upon vehicle battery capacity. Modeled closely on existing rebate programs offered in other states, DRIVE offers the potential to increase the total number of EVs on Rhode Island roadways by 20 to 35 percent. As of July 1, 2016, OER had issued or reserved 70 DRIVE rebates. For more information on DRIVE, please visit: [www.drive.ri.gov](http://www.drive.ri.gov).



### ZERO EMISSION VEHICLE WORKING GROUP

In December 2014, OER launched a stakeholder-based Zero Emission Vehicle (ZEV) Working Group. The ZEV Working Group was formed to discuss the actions necessary to promote the responsible growth of the ZEV market in Rhode Island. The Working Group held meetings in 2015 to finalize action items the state can take to promote ZEVs, leading to the release of the Rhode Island Zero Emission Vehicle Draft Action Plan. The draft plan identifies state-specific strategies to grow the ZEV market in Rhode Island in a manner that is consistent with state climate and energy goals, ZEV program requirements, and the commitments in the multi-state ZEV Memorandum of Understanding. For more information on the ZEV Working Group, please visit: [www.energy.ri.gov/transportation](http://www.energy.ri.gov/transportation).

### NATIONAL DRIVE ELECTRIC WEEK

In September 2015, OER – in partnership with the Department of Environmental Management (DEM) and Ocean State Clean Cities – held its annual National Drive Electric Week (NDEW) event at Garden City Center, Cranston. For the second year in a row, this event was the largest of its kind held in New England, with over 23 electric vehicles and 100 registered attendees. The event highlighted the benefits of driving an electric vehicle, offered ride-and-drive opportunities, and showcased a variety of electric vehicle makes and models now available for sale in Rhode Island. For more information on National Drive Electric Week, please contact Ryan Cote at [Ryan.Cote@energy.ri.gov](mailto:Ryan.Cote@energy.ri.gov).

## MASTER PRICE AGREEMENT FOR TURNKEY ELECTRIC VEHICLE SUPPLY EQUIPMENT

Continuing the state's commitment to building out electric vehicle charging infrastructure, OER collaborated with the Division of Purchases to create Master Price Agreement (MPA) 509, which establishes a list of prequalified vendors that can provide turnkey equipment purchases and installation for state, quasi-state, and municipalities. MPA 509 was awarded on February 4, 2016, providing agencies with more options and better access to information when installing EV charging infrastructure. For more information on the Master Price Agreement for Turnkey Electric Vehicle Supply Equipment (EVSE), please contact Ryan Cote at [Ryan.Cote@energy.ri.gov](mailto:Ryan.Cote@energy.ri.gov).

Figure 4. Electric Vehicles Registered in Rhode Island

Year	# of Registered Electric Vehicles
Pre-August 2014	347
August 2014 – December 2014	51
2015	140
<b>Total</b>	<b>538</b>

Electric vehicle registrations increased by 35% in 2015, with total registered EV's growing from 398 to 538. (Source: Rhode Island Department of Motor Vehicles)



## 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 2015, OER helped lead efforts to support Rhode Island's active 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.

### 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 undertaken with and advanced through NESCOE in 2015 included:

- Supporting the New England Governors' Energy Infrastructure Initiative and its goal of facilitating the identification of cost-effective energy infrastructure projects (natural gas capacity and electric transmission for no-to-low carbon resources) that can mitigate the high and volatile energy prices impacting state and regional economic competitiveness;
- 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 the Federal Energy Regulatory Commission, the United States Department of Energy, and other regional/national entities on numerous electric wholesale market issues; and
- Improving clarity, consistency, and transparency in regional electric transmission planning processes.

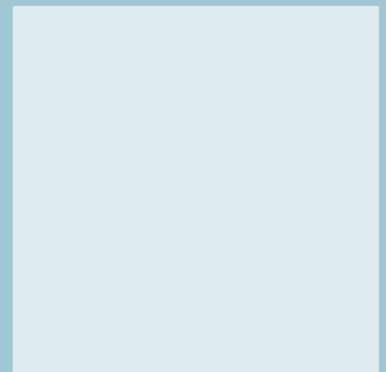
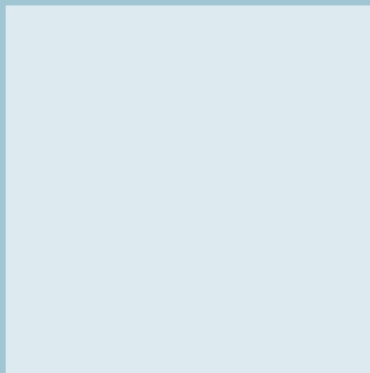
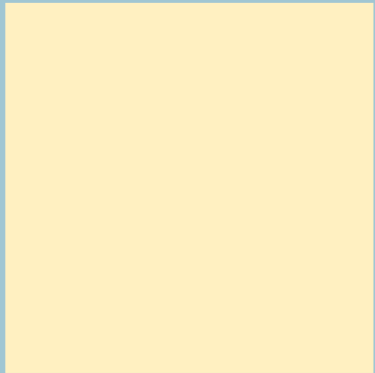
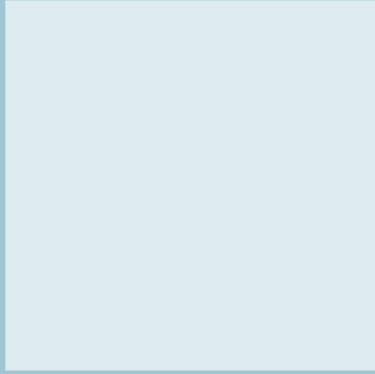
For more information on OER's regional work, please contact Nicholas Ucci at [Nicholas.Ucci@energy.ri.gov](mailto:Nicholas.Ucci@energy.ri.gov).





# 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.]

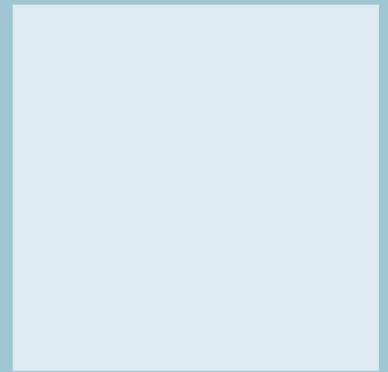
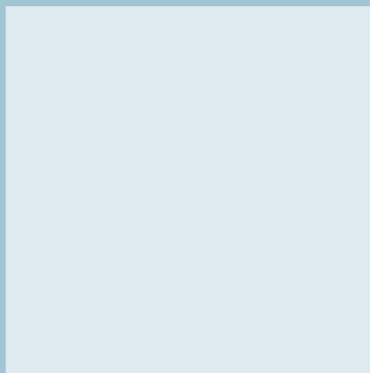
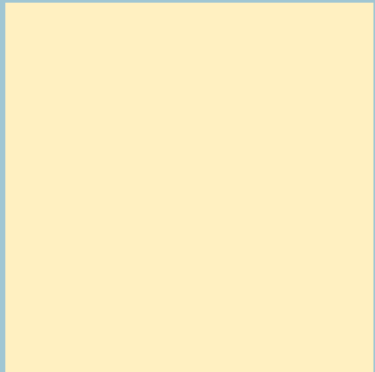
(16) Advise the economic development corporation in the development of standards and rules for the solicitation and award of renewable energy program investment funds in accordance with § 42-64-13.2;

(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 \$934,833.27 from the SBC in 2015 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, 2016, OER is staffed with twelve (12) full time state employees, and the SBC funding provides 52 percent of annual salaries, 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:

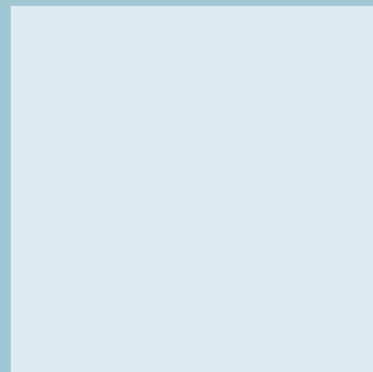
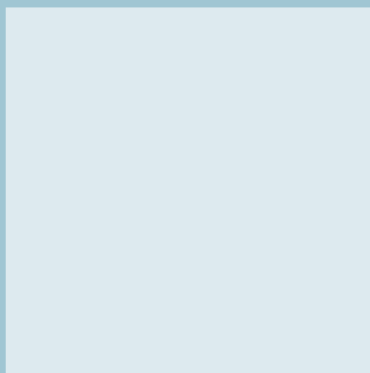
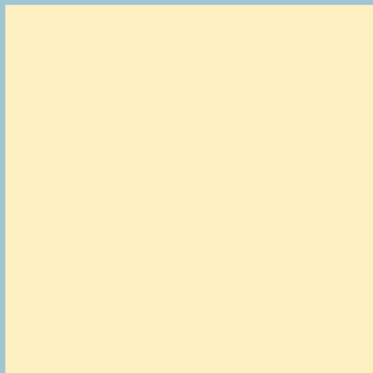
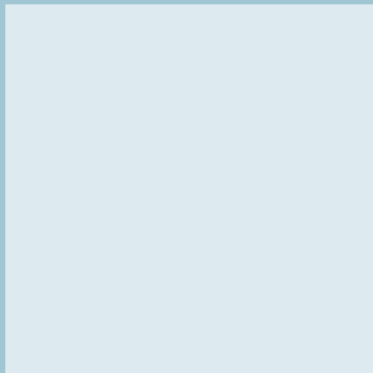
- Development and implementation of the new Rhode Island State Energy Plan;
- Oversight and development of the state's second annual Clean Energy Jobs Report;
- Program, technical, and administrative support for the state's nation-leading energy efficiency programs;
- Coordination and implementation of additional energy efficiency initiatives, including the Rhode Island Public Energy Partnership, the Efficient Buildings Fund Project Priority List, Building Labeling Working Groups, 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 planning 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, through pilot, planning, and research initiatives;
- 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 2015.

### 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 2015:

### 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, OER successfully spearheaded a legislative effort to extend 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 2015, 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 eighth year in a row that Rhode Island has scored in the top ten. Rhode Island’s 2015 program achieved savings of 2.91% of electricity consumption and 1.18% of natural gas consumption, respectively, producing \$386.4 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 2015, OER staff—in partnership with stakeholder collaborators—completed a Thermal Working Group Report that evaluated how the state can better extend the full benefits of energy efficiency to delivered fuels heating customers. The Report concluded that significant energy efficiency potential exists in Rhode Island's delivered fuels sector and that several viable options could be pursued to secure sustainable funding for delivered fuels energy efficiency programs. During 2015, OER initiated conversations with industry and stakeholder partners to determine actionable next steps based on the recommendations of the Report, which remain ongoing.

## **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. In 2014 and 2015, the state received three Transportation Investment Generating Economic Recovery (TIGER) grants totaling \$22.6 million from the U.S. Department of Transportation for three transit projects: an expanded transit hub at Providence Station, enhanced bus operations in downtown Providence, and a travel plaza and transit hub along Interstate 95 in Hopkinton. 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.

## **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 2015, 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 2015, OER staff participated in a Zero Net Energy (ZNE) Task Force coordinated by National Grid to draft a Rhode Island ZNE white paper. This white paper, scheduled to be released later in 2016, will provide recommendations for supporting ZNE renovations and construction throughout Rhode Island. 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 stretch code for State facilities.

## **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 2014, the General Assembly enacted the Renewable Energy Growth (REG) Program, which built on the state's 40 MW pilot Distributed Generation Standard Contracts Program, setting a goal of an additional 160 MW of local projects by 2019. In 2016, the Rhode Island General Assembly considered a bill to further expand the REG Program to a total of 560 MW by 2029. In addition to the REG Program, Rhode Island is forging ahead with additional renewable and clean energy procurement opportunities. The first offshore wind project in the nation off the coast of Block Island will be operational by the end of 2016. The state also partnered with Massachusetts and Connecticut to issue a competitive 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 2015, OER staff issued a solicitation to retain consultant services for evaluating strategies to grow the state's nascent market for renewable thermal technologies. OER also partnered with National Grid to support an evaluation study to gather critical field performance data on efficient cold-climate air-source heat pumps, which could play a key role in the state's future renewable thermal portfolio.

## **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 will consider the future role that biofuels could play in Rhode Island's energy system. These include: (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 will evaluate 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; 538 electric vehicles were registered in Rhode Island as of December 2015. 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 2015, OER coordinated the development of a Rhode Island Zero Emission Vehicle (ZEV) Draft Action Plan, which identifies state-specific actions and strategies to grow the ZEV market in Rhode Island. In early 2016, OER launched the state's first rebate incentive program to support the adoption of electric vehicles: Driving Rhode Island to Vehicle Electrification (DRIVE). DRIVE offers the potential to increase the total number of electric vehicles on Rhode Island roadways by 20-35 percent.

## **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**

In 2015, OER assisted the Rhode Island Emergency Management Agency (EMA) with the development of a Rhode Island state-specific Critical Infrastructure Protection Plan. OER led 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, OER retained a consultant to initiate a study that will identify 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 2015, OER staff worked with key stakeholders to take Rhode Island's first step at mapping out key issues related to the future of Rhode Island's electric grid. The group completed a "Systems Integration Rhode Island" (SIRI) report, which offered early stage recommendations to achieve objectives for an improved grid. Implementation of the SIRI recommendations will be ongoing in 2016, complemented by Public Utilities Commission Docket 4600, initiated in early 2016 to investigate the changing electric distribution system.

## **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 2015, 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 will expand 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 2015 to further efforts to reduce the soft costs of renewable energy. OER continued its ongoing participation in the New England Solar Cost-Reduction Partnership, a DOE-funded effort to tackle a range of barriers to solar deployment and increase coordination throughout the region. Some of OER's state-specific achievements to date under this collaborative effort included seven solar stakeholder meetings, the successful completion of nine Solarize campaigns, and two trainings to the solar industry regarding quality assurance and the National Electric Code as it relates to solar PV. Additionally, in 2016, OER will finalize an updated guidance document on land-based wind siting, which will provide Rhode Island cities and towns with the latest and best information as they consider establishing wind siting ordinances. Finally, in 2016, the General Assembly passed a bill that exempts residential and manufacturing properties with renewable energy systems from tangible property taxes on systems, and charges OER with developing a single statewide tangible tax rate for commercial renewable energy systems by November 30, 2016.

## **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 2015 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 2015, 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 the RGGI Annual Report, available at [www.energy.ri.gov/rggi](http://www.energy.ri.gov/rggi).

## **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 2015, the Executive Climate Change Coordinating Council (EC4) charged OER, DEM, DOT, and Planning with managing the selection of an expert consultant team to assist in the development of a Rhode Island Greenhouse Gas Emissions Reduction Study. The study will be completed in 2016, and will combine 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.

## **20. Lead by example**

### **Strategy Summary**

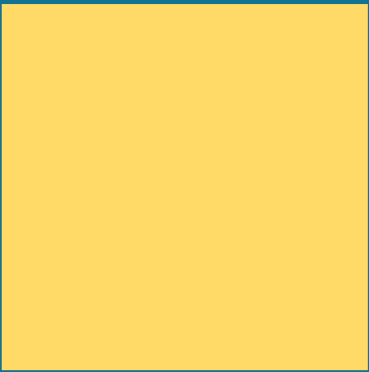
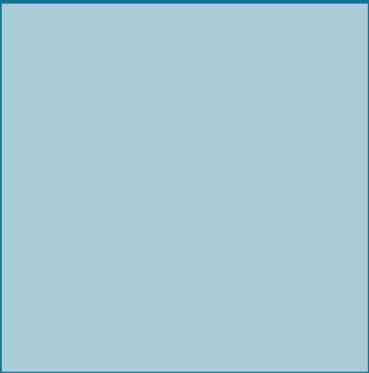
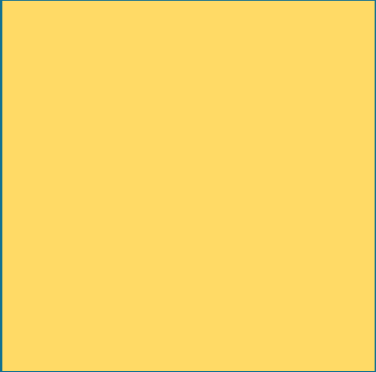
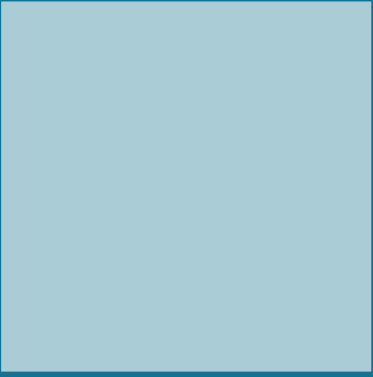
The Plan calls for Rhode Island to implement a tailored and comprehensive public sector "Lead by Example" initiative. State and local governments each have a key role to play in helping Rhode Island achieve its energy goals, both through direct investments in cost-effective clean energy solutions, as 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 December 2015, Governor Raimondo signed Executive Order 15-17, requiring State agencies 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 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 in the State’s fleet, and establish a stretch building code for use in all State construction and renovation projects.





[www.energy.ri.gov](http://www.energy.ri.gov)

