



RI Office of Energy Resources

"Lead by Example" Energy Initiative

Executive Order 15-17



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Letter from the Commissioner

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

In accordance with Executive Order 15-17, State Agencies to Lead By Example in Energy Efficiency and Clean Energy, I am pleased to provide you with the Office of Energy Resources' (OER's) third annual report, for the year 2019, evaluating the State's progress toward Lead By Example Executive Order (LBE EO) goals.

Through on-going Lead by Example initiatives, OER and partner State Agencies continue to reduce State Government energy costs while increasing clean energy employment and investment opportunities and shrinking our carbon footprint.



Recent highlights include:

- Reducing energy consumption across State Government facilities by 10.5% compared to a 2014 baseline;
- Supporting the installation and operation of 24 dual-port electric vehicle charging stations on State Government properties;
- Participating in Demand Response Programs to reduce peak energy demand and generate revenues for the State;
- Promoting the State's first voluntary building Stretch Code;
- Supporting the retrofit of 57% (60,500) of all Rhode Island streetlights to high-efficiency, cost-saving LEDs;
- Management of competitive electricity and natural gas supply contracts to serve all State Agencies;
- Management of a centralized utility payment system for State Agencies that delivers administrative and financial efficiencies;
- Implementation of a web-based utility bill management software to track and audit State Government energy expenses.

Under your continued leadership, these on-going efforts serve as a strong foundation to grow our economy and achieve a secure, cost-effective, and sustainable energy future. Over the next year, OER is committed to furthering progress and coordination among State Agencies as we continue to lead by example.

Sincerely,

A handwritten signature in blue ink, which appears to read "NSU".

Nicholas S. Ucci

Commissioner



Executive Summary

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

The Governor tasked the Rhode Island Office of Energy Resources (OER) with overseeing and coordinating efforts across State Government to achieve the following LBE EO goals:

Executive Order 15-17 Goals

- Procure 100% of State Government electricity consumption from renewable sources by 2025
- Achieve an overall 10% reduction in energy consumption below FY2014 levels by FY2019
- Post State energy usage publicly and report progress toward goals on an annual basis
- Ensure a minimum of 25% of new light-duty State fleet purchases/leases be zero-emission vehicles by 2025
- Achieve a high standard of Green Building Operations & Maintenance at all State facilities
- Develop a voluntary Stretch Code based on the International Green Construction Code or equivalent by 2017
- Reduce the use of natural resources at State facilities
- Support the State-wide goal of decreasing overall greenhouse gas emissions by 45% below 1990 levels by 2035
- Agencies shall consider other policies to reduce greenhouse gas emissions, such as purchasing energy-efficient appliances and products and installing electric vehicle charging stations at State facilities
- State Agencies shall consider full life-cycle cost analyses in planning and implementing projects

Pursuant to the LBE EO, OER provides this Annual Report to demonstrate compliance with and progress toward the achievement of the Governor’s clean energy goals for State Agencies. To advance this important work, OER has developed key LBE metrics to measure success across seven comprehensive work categories, including:

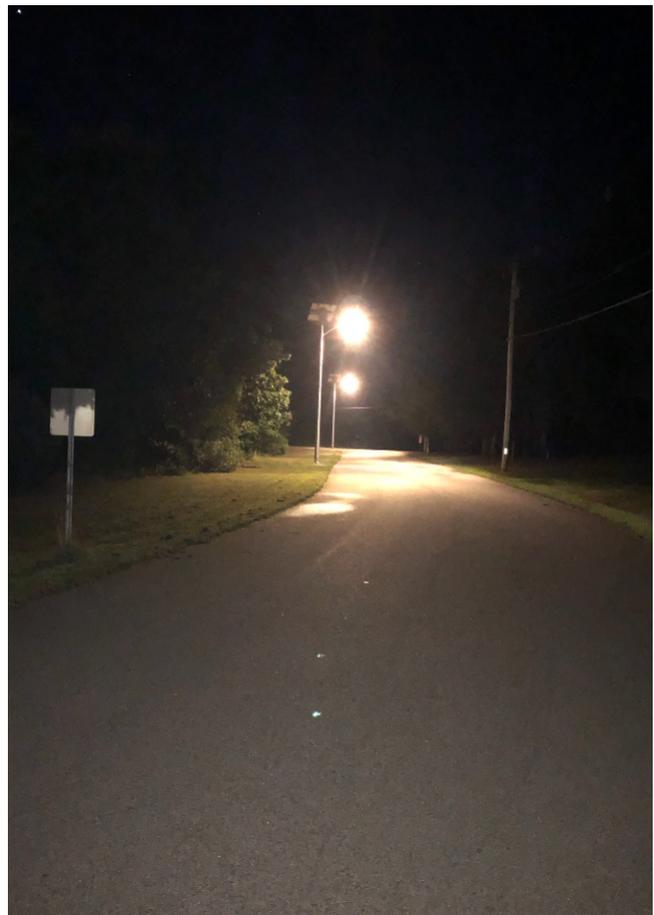
- Energy Data Management
- Purchasing Mechanisms
- Energy Efficiency Projects
- Renewable Energy Installations
- Clean Transportation
- Training and Recognition
- Energy Procurement

OER’s LBE achievements, progress metrics, and on-going efforts within the aforementioned work categories are detailed on the following pages. Appendix C offers a summary of annual energy consumption by State Agencies, 2014-2019.



Achievement Summary

In December 2015, Governor Gina Raimondo issued an Executive Order directing State Agencies to “Lead by Example” by achieving robust clean energy targets and developing clean energy practices. After four years of implementation, Rhode Island State Agencies have reduced their energy consumption by 10.5%. The Lead by Example initiative is also promoting interdepartmental cooperation, unlocking opportunities to invest in comprehensive energy efficiency and renewable measures that can reduce and stabilize public sector energy costs, shrinking Government’s carbon footprint, and supporting Rhode Island’s burgeoning clean energy economy.



OER provides funding of \$140,625 (RGGI) to install solar street lights at the LADD Campus in Exeter, which includes the Rhode Island Fire Academy and Veterans Cemetery. The solar lighting will provide a resilient source of lighting and support the state’s clean energy goals as part of the Lead By Example Initiative.

2019 Lead by Example Progress Metrics

Executive Order Category	Target	Current Status
Overall Energy Consumption Reduction	10% reduction by end of FY2019	10.5% ¹ : percent reduction in overall State facilities' energy consumption
Electricity Consumption from Renewables	100% by 2025	50%: percent of State Government electricity consumption offset by renewables
Zero-Emission Vehicles in State's Light-Duty Fleet	25% of new light-duty State fleet purchases or leases be zero-emission vehicles by 2025	7.2% (43 vehicles): percent of light-duty vehicles (purchased or leased since Dec 2015) that are zero-emission vehicles
2019-B Green Building Operations & Maintenance Plan	Train facility managers in green building management	15: number of facility managers who have completed Building Operator Certification (BOC) training
Stretch Code Development	Complete Stretch Code development by end of 2017	Complete: Commercial and residential Stretch Codes were developed and are available on OER's website
Other Green Policies	Increase electric vehicle infrastructure	97: total number of charging stations installed with support from OER

¹Energy reductions for both electricity and natural gas consumption, averaged for FY2016-2019, is compared to FY2014 data. As OER develops a centralized dataset with more historical data, the reduction will be compared to base year FY2014. This comparison is not normalized for weather fluctuations.



Energy Efficiency Projects

Achieving deep energy savings at existing facilities and implementing above-code new construction projects enabled the State to meet its LBE EO 10% energy consumption reduction target, reaching a reduction of 10.5% in energy usage as of December 2019 compared to a 2014 baseline. OER is working closely with its State Agency partners to advance this work to achieve even deeper energy savings across its portfolio.

Currently, OER provides administrative, technical, and other support resources to public sector entities as they scope, design, procure, finance, and implement cost-effective energy efficiency projects at their facilities. To streamline the availability and leveraging of existing energy efficiency program incentives, OER worked with the Department of Administration and National Grid to negotiate a Strategic Energy Management Plan (SEMP)². The SEMP Memorandum of Understanding (MOU) document describes specific incentive structures for energy efficiency projects completed by the State; supports building energy auditing and retro-commissioning efforts; provides a single point of contact for project coordination and technical assistance; and details other support initiatives, such as facilities management training for applicable State employees. The SEMP also establishes energy reduction goals for existing buildings, totaling 12 million kWh and 470,000 therms

over a period of three years.

Coupled with the establishment of a comprehensive SEMP, OER has allocated over \$9 million (since 2015) in Regional Greenhouse Gas Initiative (RGGI) auction proceeds to support cost-effective energy efficiency and renewable energy projects across State Government. These dollars are being leveraged with available utility-administered incentives and other funding sources, where available, to build a pool of capital that will drive clean energy investments designed to reduce State energy costs, diversify the Government's energy supply portfolio, and reduce the State's carbon footprint.

²For more information on the State's SEMP, please see Appendix A.

Department of Administration

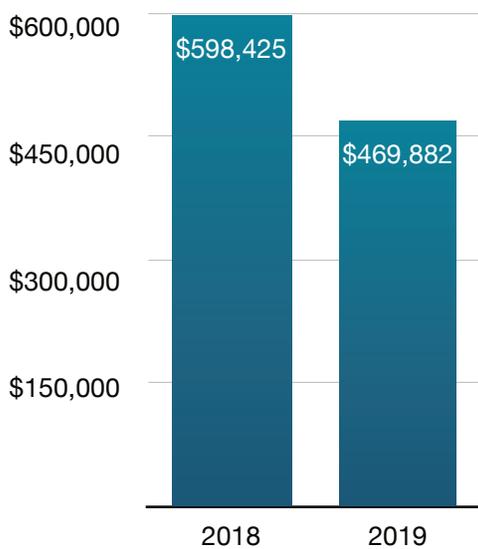
E n e r g y p r o f i l e



RI's largest state-owned office building saves **\$15,000** a month after energy efficiency upgrades

Built in 1989, the William E. Powers Building in Providence, Rhode Island houses over 800 state employees including the Departments of Administration and Revenue. It is the largest state-owned office building in Rhode Island and provides effective oversight, accountability and support of agency operations across state government.

The costs of heating and cooling the 250,000 square-foot building had grown over the years. This was due to an aging HVAC system which lacked adequate temperature and zone controls, requiring manual adjustments several times a day. This system was inefficient and expensive to manage.



Above: Electricity & natural gas costs declined substantially after new HVAC and management systems were installed at the Powers Building.

THE SOLUTION

The Rhode Island Office of Energy Resources, in partnership with the Division of Capital Asset Management & Maintenance, hired Siemens to design and install a modern climate control system.

The new Desigo®CC system provides:

- ▶ Automatic temperature and schedule controls with multiple zones to provide optimum comfort across the building in all seasons.
- ▶ New thermostats which allow individual offices to fine tune temperature adjustments.
- ▶ Computer dashboard which gives building operators the ability to monitor the system in real time and visualize long term energy use trends.

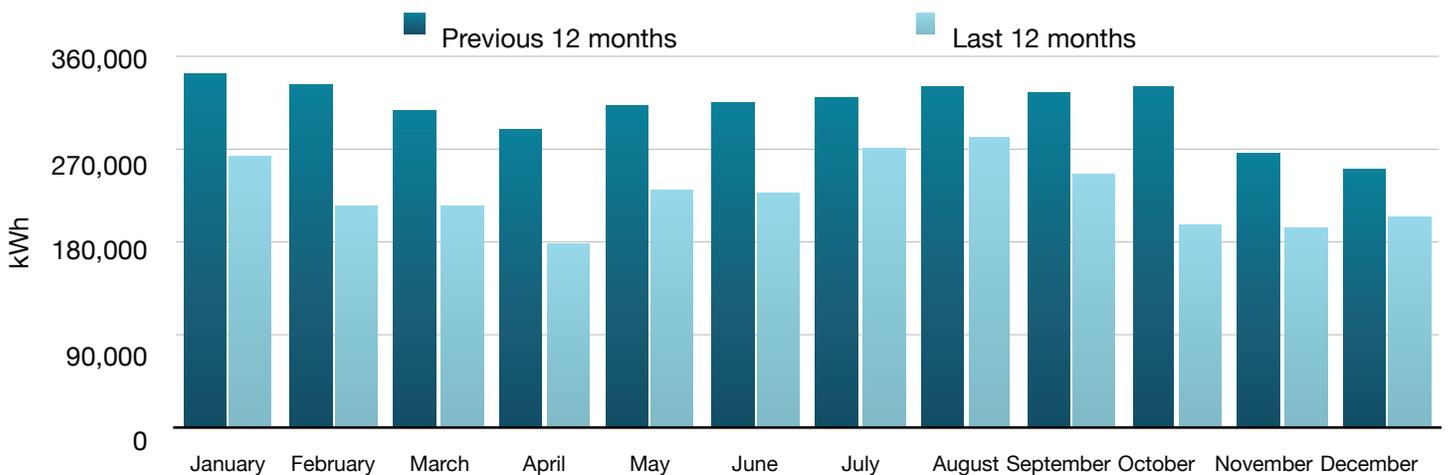
THE RESULTS

Since installing the new system, the Powers Building has saved \$15,000 a month in energy costs, with energy savings that range between 15-27%.

“Not only did we save money, but we improved the comfort of the building which boosts employee productivity.”

Monthly energy savings may be reinvested into continued building improvements such as lighting upgrades and mechanical equipment.

For information about the state’s clean energy programs and financing opportunities for state agencies, visit www.energy.ri.gov.



Powers Building Kilowatt Hours 2018 Compared to 2019



Renewable Energy

Consistent with the Governor’s Lead by Example and 1,000 MW by 2020 clean energy goals, OER is spearheading efforts to increase the adoption of renewable energy resources across State facilities. Investments in both small and large-scale renewables, such as rooftop and 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.

To date, eight solar installations are now operational at State Government facilities: three on the Capitol Hill complex (Providence), one at the Veterans home (Bristol), a PV carport at the Public Utilities Commission (Warwick), two at Rhode Island College (Providence), and one at the new Attorney General building (Cranston). A ninth installation completed construction at the Rhode Island National Guard’s Camp Fogarty Armory (East Greenwich).

Facility	Type	Capacity (kW) - Installed	Est. Annual Savings
Dept. of Admin	Rooftop	180 – June 2017	\$37,627.91
Dept. of Health	Rooftop	40 – May 2017	\$8,406.24
Dept. of Transportation	Rooftop	67 – June 2017	\$14,010.39
PUC	Canopy	56 – August 2018	\$11,571.08
RI National Guard	Rooftop	207 – January 2020	\$43,157.02
Attorney General	Rooftop	101 - 2019	\$20,953.04
RIC (2 Buildings)	Rooftop	111 - 2019	\$23,117.15
Veterans Home	Rooftop	44 - 2018	\$9,106.76

In addition, the State purchases more than half of its energy supply needs from renewable resources thanks to the State’s Renewable Energy Standard (RES) and the use of competitive procurement strategies to exceed mandated renewable energy procurement amounts.

OER will continue to work with its sister agencies to expand the amount of electricity generated by renewables for the State and promote the expansion of clean energy jobs and investments across Rhode Island.



Newport Renewables completed interconnection of the Rhode Island Army National Guard’s (RIARNG) rooftop solar facility on the Armory Building at Camp Fogarty Regional Training Site in East Greenwich. The 207 kW RIARNG solar facility is the ninth solar project contributing towards the State of Rhode Island’s Lead by Example Initiative to date.

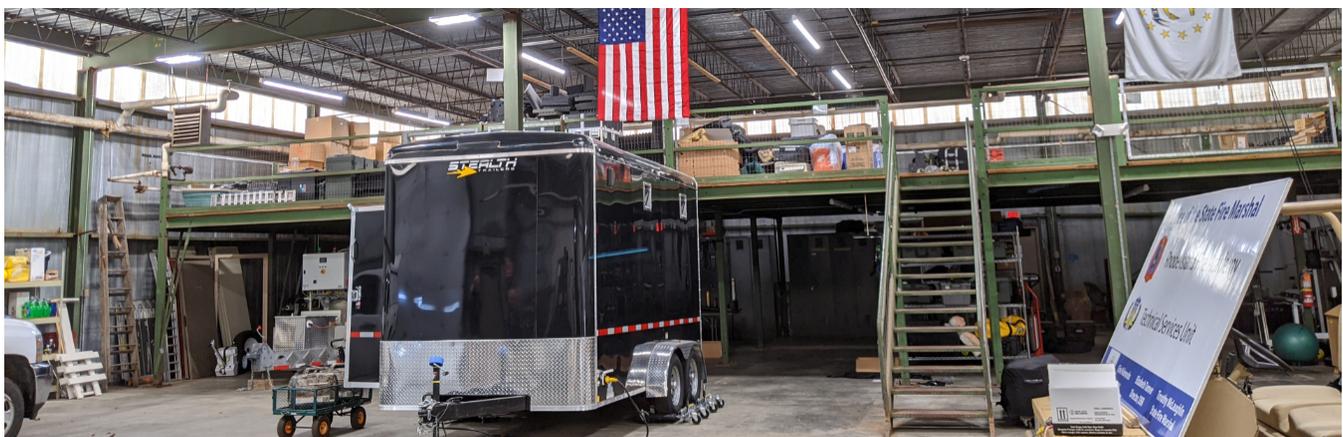
Energy Procurement

In an effort to reduce public sector energy costs, OER – in partnership with the Department of Administration – is supporting competitive energy supply procurement processes for State Agencies. These procurements have also been made available to other public sector entities, such as quasi-state agencies and municipalities. By aggregating demand and leveraging economies of scale through a competitive process, OER and DOA aim to reduce energy supply costs and reduce energy price volatility for all participating public entities.

In May 2017, OER, working in collaboration with other divisions in the Department of Administration, conducted a competitive electricity supply auction for

all Executive Agencies, Judiciary, several public colleges (RIC/CCRI), and the quasi-state agency RIRRC. Four electricity suppliers qualified to enter the auction and competed against each other to give the State the best price for electricity. As a result, the State selected a fixed cost contract at \$0.07738 per kWh for a three-year term. As part of the agreement, 50% of the State’s electricity supply is offset with the procurement of Renewable Energy Certificates (RECs).

Similar competitive procurement efforts have been undertaken for the State’s natural gas supply, which have provided the State with energy price/budget stability and reduced the Government’s exposure to energy price volatility.



OER and DCAMM worked with ENE Systems on an LED lighting retrofit at the Rhode Island State Fire Marshall’s Technical Service Unit (aka “Bomb Squad”) facility in the LADD campus. The projected annual energy savings are 62,324 kWh and \$10,595. The project was completed in December 2019.



Clean Transportation

OER is supporting the installation of electric vehicle charging infrastructure at public locations. Its Charge Up! program, which came to a close in 2019, provided applicants with incentives to support the purchase and installation of electric vehicle charging stations (Level II or higher) at publicly-accessible locations. In addition, applicants that installed at least one charging station through this program could also qualify for incentives to support the purchase or lease of a new electric vehicle as part of their public sector fleet. Through ChargeUp!, OER supported the installation of 49 dual charging stations and the purchase of 9 electric vehicles. In total, OER has supported the installation of 97 charging stations to date (see Appendix B for more information).

On October 31, 2019, OER launched Electrify RI, an electric vehicle (EV) charging station incentive program that seeks to make more charging stations accessible to Rhode Island drivers. This \$1.4 million incentive program has helped fund the installation of new EV charging stations – including Level II and Direct Current Fast Charging (DCFC) – at Rhode Island workplaces, multi-unit dwellings, state and local government properties, and publicly-accessible locations. The funds for Electrify RI come from the Volkswagen Diesel Settlement (VW Settlement) Environmental Mitigation Trust and are being invested according to the State’s Beneficiary Mitigation Plan

(BMP) to achieve significant and sustained reductions in diesel emissions and expedite development and widespread adoption of zero-emission vehicles. Other funds from this settlement are supporting an all-electric bus pilot program at the Rhode Island Public Transit Authority (RIPTA). For more information on the Electrify RI program, please visit:

www.energy.ri.gov/electrifyri.php. For more

information on the VW settlement, please visit:

www.dem.ri.gov/programs/air/vwsettle.php.

In addition to charging infrastructure, OER hopes to increase the number of Zero-Emission Vehicles (ZEVs) within the State fleet. Under the Lead by Example initiative, 25% of the State’s light-duty fleet must be zero-emission by 2025. As of Q2 2020, the State is operating 43 ZEVs in its fleet. State fleet staff continue to collect vehicle inventory and replacement plans from all State Agencies. This data will serve as the foundation for a strategic plan for procuring more electric vehicles as surplus vehicles are sold and replaced. Additionally, the Administration is focused on right-sizing the State fleet by reducing the overall number of vehicles and encouraging the creation and use of pooled vehicles to more efficiently utilize owned vehicles.

Stretch Code



As directed in the Lead by Example Executive Order (EO 15-17), OER and partner stakeholders made the State's first voluntary stretch code available to private and public building construction and renovation projects. In February 2019, OER allocated \$500,000 in RGGI funding to support the early adoption of the stretch code by The Compass School, a public charter school in Kingston, RI.

A stretch code is a building code or compliance pathway that is more aggressive than a base code. Also known as "reach codes," their main purpose is to help buildings achieve higher energy savings and implement advanced building practices.

Rhode Island's first voluntary stretch codes have been made available to private and public building construction and renovation projects. The codes were developed with the assistance of subject matter experts and were vetted through a public comment process.

Rhode Island's stretch codes are meant to be used on a voluntary basis to guide the construction and/or renovation of buildings that use less energy, have less negative impact on the environment, and achieve higher levels of occupant health and comfort. New building construction and large-scale renovation projects are also encouraged to use the stretch codes to help maximize the financial incentives available from National Grid's Energy Efficiency Programs.



The Compass School, a K-8 charter school in Kingston, was awarded a \$500,000 state grant to help improve the energy efficiency of a large building renovation project. With the help of these funds, the project will meet the RI Stretch Code – voluntary green building guidelines that help buildings use less energy, have less negative impact on the environment, and achieve higher levels of occupant health and comfort.



Building Operations

Encouraging and promoting green building management, operation, and maintenance practices are vital to achieving and perpetuating energy savings. For building operators and facility managers, the Northwest Energy Efficiency Council's Building Operator Certification® (BOC) program is one of the preeminent opportunities to master energy efficiency skills and best practices. The BOC training is nationally recognized and includes seventy-four (74) hours of management and maintenance training.

As part of the States' SEMP agreement with National Grid, the utility is providing scholarships for State facility managers to attend Building Operator Certification (BOC) training. Since the signing of the LBE EO, fifteen (15) State employees have followed the training, and an additional five (5) are scheduled to participate this year.

Lighting Upgrades at Pascoag Schools



To assist with the identified program enhancements, OER allocated proceeds from two rounds of funding from the Regional Greenhouse Gas Initiative (RGGI). Funding from the state's 2018-A RGGI Allocation Plan supported cost-effective LED lighting upgrades in three Pascoag schools. This project leveraged RGGI funding, PUD incentives, and funding from Burrillville School Department, and is saving local schools nearly \$28,000 annually.

Energy Management

Energy Data Management

In order to streamline access to, and improve the accuracy of, State energy usage data and expenditures, OER initiated a process to centralize all State Agency utility bills across the electric, natural gas, and delivered fuels sectors. In 2015, OER began receiving, auditing and charging the appropriate accounts for all State Agency electricity bills. Natural gas bills were centralized in a similar manner by August 2016. OER anticipates delivered fuels (propane and oil) billing to be centralized by 2020.

By collating and providing greater oversight over State Agency utility bills, OER has been able to improve energy usage and cost forecasting, decrease payment errors, and analyze progress toward Lead by Example goals. Importantly, OER has been simultaneously working to increase public and inter-governmental transparency into these important data sets.

In 2019, OER completed the implementation of web-based utility bill management software (Energy CAP) to track and audit energy expenses and provide State Agencies with better online data access.

OER enhances agency-level communications and coordination by conducting outreach meetings with State Agencies to identify LBE point of contact(s), connect Agencies to resources/programs/incentives supported by OER, and establish agency-specific goals to support the achievement of overall LBE EO directives.



Siemens provides building automation system training to Rhode Island state employees. There they learn about how to read and manage energy data.

Purchasing Mechanisms

OER, in partnership with the Division of Purchases, has developed purchasing mechanisms (including Master Price Agreements or MPAs) to streamline the procurement and implementation of cost-effective energy efficiency and renewable energy projects.

For example, in September 2015, MPA 508 – *Energy Efficiency Services* was developed to support turnkey energy efficiency projects. In July 2016, *Continuous Recruitment 44 – Solar Photovoltaic and Wind Turbine System Installation Services* was initiated to support public sector entities interested in developing renewable energy systems at their buildings and campuses. *MPA 509 – Electric Vehicle Supply Equipment* was developed to support public sector entity installation of electric vehicle charging infrastructure equipment. These purchasing mechanisms expedite project implementation by defining proposal requisition processes and providing access to a pool of prequalified vendors.

In addition to the aforementioned efforts, existing MPAs have been updated to support clean energy goals more broadly. Specifically, the State’s delivered fuels and heating fuel MPAs were adjusted in May 2016 to 1) ensure that all State-purchased transportation diesel contains at least 5% biofuel; 2) ensure that all State-purchased #2 heating oil contains 5% biofuel and 95% ultra-low sulfur heating oil; 3) establish options for State Agencies and municipalities to purchase 20% biodiesel, 99% biodiesel, and/or 20% biofuel heating oil (B20 BioHeat); and 4) ensure that all State-purchased off-road diesel is ultra-low sulfur (S15).

For more information on the MPAs described above, please visit: www.purchasing.ri.gov.

Demand Response Program

OER’s Demand Response Program for State facilities enables State Agencies to commit to ISO New England, the regional grid operator, that in times of extreme conditions and high demand on the grid, they will be able to curtail their electric demand and, as a result, be paid for making such commitments. In 2019, the sites at the Department of Administration, Rhode Island College, and the University of Rhode Island were enrolled in the program. As a group, they earned \$129,795 of revenues through participation in the demand response program.



The Rhode Island Training School once had dark areas in the far corners of the parking lot and out to Powers Road. The new LED lighting has improved convenience and safety by illuminating those areas. Perimeter lighting in the recreational yard was also upgraded.



Recognition — Annual Lead by Example Awards

In June 2019, Rhode Island Office of Energy Resources (OER) recognized 24 State Government Agencies, quasi-public agencies, municipalities, and State colleges and universities for their renewable energy and energy efficiency achievements at its Third Annual Lead By Example Energy Awards ceremony, held at the Rhode Island State House.

The State's Lead by Example efforts promote the adoption of clean energy measures across public sector facilities and State Agencies. State and municipal employees are helping to reduce energy costs and mitigate greenhouse gas emissions, consistent with Rhode Island's economic, energy, and environmental policy goals. This work frequently goes unheralded but is a critical tool in addressing constrained budgets and carbon footprints across the Government.

Lead by Example Energy Award-Winners:

- **City of Pawtucket:** The city invested \$4.5 million to update heating and lighting equipment in multiple city buildings. The city installed LED streetlights, energy management systems, replaced boilers, and implemented many energy efficiency measures in its municipal buildings. These improvements are expected to improve building comfort and save \$300,000 annually.
- **Warwick Public Schools:** Warwick Schools implemented energy-saving measures throughout 10 schools in 2018, including LED lighting improvements, mechanical systems, energy-efficient motors and variable speed drive installations, and energy management system upgrades. The schools will save about \$215,000 each year.
- **Rhode Island Department of Transportation:** The Department of Transportation has worked continuously to convert 7,700 RI-owned highway streetlights to LED, making DOT a national leader in this endeavor. Wireless controls allow operators to monitor and control the streetlights remotely. The new streetlights improve driving conditions and slash lighting energy consumption by half. DOT also installed three electric charging stations and a new state-of-the-art building automation system.
- **Rhode Island Convention Center:** The RI Convention Center installed a high-efficiency chiller, three cooling towers, condensing boilers, variable frequency drives, and refrigeration controls and converted its neon signs to LED. The Center improved its overall heating and cooling operation, saving up to 25% on its energy bills.
- **Rhode Island College:** Rhode Island College implemented energy efficiency and infrastructure

improvements across 33 campus buildings, totaling \$13 million. The college has demonstrated its commitment to renewable energy by installing a 110-kW solar system on the rooftop of the Donovan Dining Center and the Student Union.

The nominees that received honors included:

- **Municipalities:** City of East Providence, City of Providence, City of Woonsocket, Town of Burrillville, Town of North Kingstown, Town of Smithfield, Town of Warren
- **Public Schools:** Burrillville School Department, East Providence School District, Middletown Public Schools, Narragansett School System, North Smithfield School Department, West

Warwick Public Schools

- **State Agencies:** Division of Capital Asset Management and Maintenance, Division of Public Utilities and Carriers, Rhode Island State Police
- **Quasi-Public Agencies:** Quonset Development Corporation, Rhode Island Public Transit Authority
- **Higher Education:** University of Rhode Island

2019 Lead by Example Clean Energy Award-Winners



MUNICIPALITY:
City of Pawtucket



PUBLIC SCHOOL:
Warwick Public Schools



STATE AGENCY:
RI Department of Transportation



QUASI-PUBLIC AGENCY:
RI Convention Center



HIGHER EDUCATION:
Rhode Island College

Appendix A: Strategic Energy Management Partnership (SEMP)

OER and National Grid are in the fourth year of their collaboration through the Strategic Energy Management Partnership (SEMP), to integrate strategic energy planning across State and Municipal facilities, and leverage utility-administered programs and best practices. State agencies can leverage both OER and National Grid funding, technical assistance, and project support on energy efficiency projects that are designed to meet agency needs and achieve significant energy and cost savings.

The SEMP partnership has delivered significant benefits to the State of Rhode Island. OER and National Grid established energy savings goals for the three-year period between 6/10/2016-6/30/2019. SEMP’s initial energy savings goal during this three-year period was 746k therms and 24.8M kWh across State facilities. Overall, SEMP projects achieved 698k therms (93%), 46.3M kWh (186%), and \$8.0M in annual energy savings in this initial three-year period. The highest volume of projects and greatest quantity of savings achieved was through lighting projects. Cumulatively the 730 energy projects accomplished in the first three-year phase of the SEMP resulted in the reduction of 32,736 metric tons of CO2, equivalent to 6,168 homes’ use of electricity for one year (according to an EPA calculator).

OER and National Grid signed their second three-year MOU in 2020, establishing the goal of achieving cumulative energy savings of 12,000 MWh and 470,000 therms by the end of 2023. Through SEMP, State agencies and quasi-agencies can leverage both OER and National Grid funding, technical assistance, and project support on energy projects that are designed to meet agency needs and achieve significant cost savings.

Electric	Estimated kWh Savings	Estimated Energy Savings (\$)	Estimated MMBtu Savings	Project Count
2017	22,681,148	\$3,357,519	77,388	267
2018	15,481,438	\$2,817,689	52,823	254
2019	8,147,864	\$1,119,631	27,801	101
TOTAL	46,310,450	\$7,294,840	158,011	622

Gas	Estimated Therms Savings	Estimated Energy Savings (\$)	Estimated MMBtu Savings	Project Count
2017	167,097	\$164,239	16,710	42
2018	320,695	\$314,300	32,070	41
2019	209,972	\$205,773	20,997	25
TOTAL	697,765	\$684,312	69,776	108

Measure Type	Estimated Annual MMBtu Savings	Estimated Energy Savings (\$)	Project Count
Comprehensive Design	70,185	\$2,298,419	111
EMS/BAS/RcX	8,255	\$142,507	10
HVAC Equipment & Ducting	16,822	\$510,036	80
Insulation/ Building Shell	1,843	\$30,568	2
Kitchen/Lab Equipment	1,469	\$14,394	1
Lighting	98,623	\$4,319,835	428
Other	2,984	\$64,371	10
Steam Trap & Pipe Insulation	17,424	\$171,240	25
VFDs & Motor Systems	10,184	\$427,781	63
TOTAL	227,788	\$7,979,152	730

Appendix B: Electric Vehicle Charging Station Locations

EV Charging Station Location	Address	City	Program	Type	#
DPUC	89 Jefferson Ave	Warwick	Charge Up!	Level 2	2
Powers Building	1 Capitol Hill	Providence	Charge Up!	Level 2	3
Town of Coventry	1670 Flat River Rd	Coventry	Charge Up!	Level 2	1
DCAMM/Capitol Hill	1 Capitol Hill (2) & Francis St Parking Lot (2)	Providence	Charge Up!	Level 2	4
RI Turnpike & Bridge Authority	33 Ferry Rd	Bristol	Charge Up!	Level 2	1
Providence Water Supply Board	125 Dupont St	Providence	Charge Up!	Level 2	1
Providence Water Supply Board	61 North Rd	Hope	Charge Up!	Level 2	1
DOT Warwick	360 Lincoln Ave	Warwick	Charge Up!	Level 2	3
PUC	89 Jefferson Ave	Warwick	Charge Up!	Level 2	4
Town of Burriville	Main St	Pascoag	Charge Up!	Level 2	4
Town of South Kingston	180 High St Wakefield RI + 394 Main St	Wakefield	Charge Up!	Level 2	4
RI Veterans Home	480 Metacom Ave	Bristol	Charge Up!	Level 2	1
Town of Johnston	345 Cherry Hill Rd	Johnston	Charge Up!	Level 2	4
Town of Middletown	35 East Main Rd + 700 West Main Rd	Middletown	Charge Up!	Level 2	4
Narragansett Bay Commission	2 Earnest St	Providence	Charge Up!	Level 2	1
Narragansett Bay Commission	102 Campbell Ave	Rumford	Charge Up!	Level 2	1
Roger Williams Park Zoo	1000 Elmwood Ave	Providence	Charge Up!	Level 2	2
Rhode Island College	600 6th St Providence RI 02911	Providence	Charge Up!	Level 2	5

EV Charging Station Location	Address	City	Program	Type	#
Town of East Greenwich	111 Pearce St	East Greenwich	Charge Up!	Level 2	3
University of Rhode Island	URI	South Kingstown	Charge Up!	Level 2	1
Powers Building	1 Capitol Hill	Providence	National Grid/ARRA	Level 2	2
Misquamicut State Beach	300-398 Atlantic Ave	Westerly	National Grid/ARRA	Level 2	1
Biltmore/Graduate Hotel	51 Washington St	Providence	National Grid/ARRA	Level 2	1
Blackstone Valley Visitors Center	Blackstone River Bikeway	Lincoln	National Grid/ARRA	Level 2	1
Bradley Hospital	1011 Veterans Memorial Pkwy	East Providence	National Grid/ARRA	Level 2	1
Bryant University - Unistructure Bldg	57 John Mowry Rd	Smithfield	National Grid/ARRA	Level 2	1
Bryant University - Physical Plant	201 John Mowry Rd	Smithfield	National Grid/ARRA	Level 2	1
Burlingame State Park (DEM)	1 Burlingame State Park Rd	Charlestown	National Grid/ARRA	Level 2	1
Chili's East Providence	50 Highland Ave	East Providence	National Grid/ARRA	Level 2	1
Chili's Lincoln	622 George Washington Hwy	Lincoln	National Grid/ARRA	Level 2	1
Chili's Warwick	1276 Bald Hill Rd	Warwick	National Grid/ARRA	Level 2	1
Cilantro - East Providence	430 Newport Ave	East Providence	National Grid/ARRA	Level 2	1
Cilantro - Warwick	1759 Post Rd	Warwick	National Grid/ARRA	Level 2	1
Colt State Park (DEM)	1 Colt Dr	Bristol	National Grid/ARRA	Level 2	1

EV Charging Station Location	Address	City	Program	Type	#
Dan's Place	880 Victory Hwy	West Greenwich	National Grid/ARRA	Level 2	1
Fisherman's Park	1011 Point Judith Rd	Narragansett	National Grid/ARRA	Level 2	1
Fort Adams (DEM)	82-94 Fort Adams Dr	Newport	National Grid/ARRA	Level 2	1
Foundry Building (DEM)	285 Edith St	Providence	National Grid/ARRA	Level 2	1
Garden City Shopping Center	76-98 Midway Rd	Cranston	National Grid/ARRA	Level 2	2
Kohls - North Kingstown	The Shoppes at Quonset	North Kingstown	National Grid/ARRA	Level 2	1
Kohls - Warwick	403-425 RI-113	Warwick	National Grid/ARRA	Level 2	1
Kohls - Smithfield	371 Putnam Pike	Smithfield	National Grid/ARRA	Level 2	1
Matanuck State Beach (DEM)	950 Succotash Rd	South Kingstown	National Grid/ARRA	Level 2	1
Miriam Hospital	175-191 Summit Ave	Providence	National Grid/ARRA	Level 2	1
Newport Hospital	11 Friendship St	Newport	National Grid/ARRA	Level 2	1
Paolino - Newport	21 Brown and Howard Wharf	Newport	National Grid/ARRA	Level 2	1
Pulaski State Park (DEM)	151 Pulaski Rd	Chepachet	National Grid/ARRA	Level 2	1
Rhode Island College	600 6th Street	Providence	National Grid/ARRA	Level 2	1
Rhode Island Hospital	593 Eddy St	Providence	National Grid/ARRA	Level 2	1
National Grid RI Headquarters	270-310 Melrose St	Providence	National Grid/ARRA	Level 2	1
Richmond Garage	222 Richmond St	Providence	National Grid/ARRA	Level 2	1

EV Charging Station Location	Address	City	Program	Type	#
Roger Williams University	1 Ferry Rd	Bristol	National Grid/ARRA	Level 2	1
Roger Williams University	154 Anthony Rd	Portsmouth	National Grid/ARRA	Level 2	1
Salty Brine State Beach (DEM)	250 Sand Hill Cove Rd	Narragansett	National Grid/ARRA	Level 2	1
Shaw's Plaza (Inactive)	180 County Rd	Barrington	National Grid/ARRA	Level 2	1
T.F. Green Airport (Garage A)	700 Jefferson Blvd	Warwick	National Grid/ARRA	Level 2	1
T.F. Green Airport (Lot D)	T.F. Green Airport	Warwick	National Grid/ARRA	Level 2	1
Trattoria Del Mare (Formerly D'Vine)	145 Spruce St	Providence	National Grid/ARRA	Level 2	1
Truth Box	460 Harris Ave	Providence	National Grid/ARRA	Level 2	1
Union Station Garage	5 Memorial Blvd	Providence	National Grid/ARRA	Level 2	1
University of Rhode Island	3 E Alumni Ave	Kingston	National Grid/ARRA	Level 2	1
Utilidata	225 Chapman St	Providence	National Grid/ARRA	Level 2	1
Viking Hotel	1 Bellevue Ave	Newport	National Grid/ARRA	Level 2	1
Warwick Mall	315 Greenwich Ave	Warwick	National Grid/ARRA	Level 2	1
Rhode Island Hospital (Garage C - Willard Garage)	104-160 Blackstone St	Providence	National Grid/ARRA	Level 2	1
Wright's Field (Wright's Farm)	84 Inman Rd	Burrillville	National Grid/ARRA	Level 2	1

Appendix C: Energy Consumption by Year for State Agencies (Actual Billed) Electricity and Natural Gas

Monthly MMBTU Billed						
	CY2014	CY2015	CY2016	CY2017	CY2018	CY2019
January	194,493.16	173,848.33	150,806.80	150,395.89	164,396.40	150,022.52
February	183,676.52	173,812.52	149,678.37	152,718.02	161,098.41	162,787.08
March	176,547.38	170,435.99	136,749.82	139,142.29	142,315.55	148,358.30
April	134,923.79	122,401.14	119,122.31	174,327.11	145,761.34	140,353.23
May	115,935.84	107,961.46	98,825.32	98,861.59	119,221.15	111,572.88
June	110,362.28	106,517.12	107,252.89	90,672.68	98,066.74	96,922.99
July	109,787.74	115,342.88	119,286.82	109,282.19	107,957.78	104,626.13
August	107,923.91	123,492.29	117,358.17	113,052.09	115,180.90	107,096.14
September	110,665.78	114,982.47	103,668.82	114,878.16	117,430.61	96,010.07
October	112,016.25	100,775.27	92,089.76	96,679.46	102,515.08	83,890.89
November	123,896.78	111,450.78	107,451.48	98,071.00	111,669.02	96,690.48
December	152,889.07	124,139.21	123,577.16	130,773.94	134,988.80	135,607.24
Cumulative MMBTU Billed						
	CY2014	CY2015	CY2016	CY2017	CY2018	CY2019
January	194,493.16	173,848.33	150,806.80	150,395.89	164,396.40	150,022.52
February	378,169.69	347,660.85	300,485.17	303,113.91	325,494.81	312,809.60
March	554,717.07	518,096.84	437,234.98	442,256.20	467,810.36	461,167.91
April	689,640.86	640,497.97	556,357.30	616,583.31	613,571.70	601,521.14
May	805,576.70	748,459.43	655,182.61	715,444.91	732,792.85	713,094.02
June	915,938.99	854,976.55	762,435.50	806,117.59	830,859.59	810,017.01
July	1,025,726.72	970,319.42	881,722.32	915,399.77	938,817.37	914,643.13
August	1,133,650.64	1,093,811.72	999,080.50	1,028,451.87	1,053,998.27	1,021,739.27
September	1,244,316.42	1,208,794.19	1,102,749.32	1,143,330.04	1,171,428.88	1,117,749.34
October	1,356,332.67	1,309,569.46	1,194,839.08	1,240,009.48	1,273,943.96	1,201,640.23
November	1,480,229.44	1,421,020.25	1,302,290.57	1,338,080.48	1,385,612.98	1,298,330.71
December	1,633,118.52	1,545,159.45	1,425,867.71	1,468,854.44	1,520,601.78	1,433,937.95
Annual Total	1,633,118.52	1,545,159.45	1,425,867.72	1,468,854.43	1,520,601.78	1,433,937.95

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