

**Title:** Report to the Senate Committee on Institutions and the House Committee on Corrections and Institutions on the expenditure of funds from the State Energy Management Program revolving funds.

**Date:** January 15, 2018

In accordance with Act 178 of 2014, Section 41. 29 V.S.A. § 168, State Energy Management Program; Revolving Funds, (f) Beginning on or before January 15, 2015 and annually thereafter, the Department of Buildings and General Services shall report to the Senate Committee on Institutions and the House Committee on Corrections and Institutions on the expenditure of funds from the State Resource Management Revolving Fund for resource conservation measures and the State Energy Revolving Fund for energy efficiency improvements and the use of renewable resources. For each fiscal year, the report shall include a summary of each project receiving funding and the State's expected savings.

### **State Resource Management Revolving Fund (SRMRF) Project Summary**

In total, forty-three projects have received funding through the SRMRF. Thirty-six projects have been complete, fifteen projects have been paid back in full and twenty-eight projects have an outstanding balance. There were thirteen projects approved for funding in 2017.

2017 Projects:

- The Department of Buildings and General Services and The Agency of Transportation worked together at the Randolph Information Center to replace 20 streetlight heads with new LED fixture and 39 interior T8 bulbs with 14W LED bulbs as well as a seven-day daylight savings programmable timer that will allow for street lights for the rear parking area to be shut off during winter months.

This project is estimated to cost \$15,820 and will save an estimated \$2,394 annually in electricity and maintenance costs, 40 MMBTU's annually, and 5.8 Metric Tons of equivalent Carbon Dioxide emissions (MTCO<sub>2e</sub>) annually.

- The Department of Fish and Wildlife in partnership with the Department of Buildings and General Services is implementing lighting and pump upgrades to ANR's Salisbury and Ed Weed Fish Hatcheries.

This project is estimated to cost \$91,411 and will save an estimated \$36,081 annually in electricity and maintenance costs, 828 MMBTU's annually, and 115.4 MTCO<sub>2E</sub> annually.

- The Department of Buildings and General Services in partnership with the Department of Corrections installed three Ozone retrofits to the washers at three different facilities; the Northeast Regional Correctional Facility, the Northwest State Correctional Facility and the Caledonia County Work Camp. The Ozone method of sanitizing laundry that does not require hot water, reduces washing and drying times, and makes the use of laundry chemicals unnecessary.

Combined, these projects cost \$13,500 and will save an estimated \$22,066 annually in electricity costs, 2,010 MBTUs annually, and 670.7 MTCO<sub>2e</sub> annually.

- The Department of Forest Parks and Recreation in Partnership with the Department of Buildings and General Services installed a 39.44 kW solar photovoltaic system on the roofs of two buildings at their Essex, VT offices.

This project cost \$75,487 and will save an estimated \$8,000 annually in electricity costs, 146 MMBTU's annually, and 21.1 MTCO<sub>2e</sub> annually.

- The Department of Buildings and General Services upgraded all interior and exterior lighting to high efficiency LED lighting at the Sharon Welcome Center.

This project cost \$28,775 and will save an estimated \$5,712 annually in electricity costs, 133 MMBTU's annually, and 19.1 MTCO<sub>2e</sub> annually.

- The Agency of Transportation in partnership with the Department of Buildings and General Services updated all existing mercury vapor and high pressure sodium parking lot lighting to high efficiency LED lighting at eight (8) park and ride locations throughout the State of Vermont.

This project cost \$35,218 and will save an estimated \$6,719 annually in electricity and maintenance costs, 71 MMBTU's annually, and 10.2 MTCO<sub>2E</sub> annually.

- The Department of Building and General Services implemented a series of efficiency measures at the Williston Information Center Southbound facility including but not limited to; insulation and air-sealing, replaced circulating pumps with high efficiency smart pumps, damper upgrades and upgrades to the building automated control system.

This project cost \$60,169 and will save an estimated \$11,700 in fuel and operating costs annually, 513 MMBTU's annually, and 45 MTCO<sub>2e</sub> annually.

- The Department of Buildings and General Services is in the process of implementing several energy savings measures at the Middlesex Central Services building including upgrading the old oil fired boiler system that was at its end of life to a new pellet boiler system. Other efficiency measures include upgrading the existing steam distribution system to a high efficiency hot water system and insulation and air-sealing measures to the buildings envelope. The new pellet boiler system came online in October of 2017.

This project is estimated to cost \$835,975 and save and estimated \$33,448 annually in fuel and operating costs, 2,020 MMBTU's annually, and 151.8 MTCO<sub>2e</sub> annually.

State government has invested \$916,124 from the fund in energy projects that have resulted in over \$1,732,586 in avoided energy costs to the State. The SRMRF currently has \$88,729 available for funding future resource conservation projects.

These projects have helped to conserve over 99,749 MMBTU of energy and roughly 8,825 metric tons of carbon dioxide equivalent emissions.

### **State Energy Revolving Fund (SERF) Project Summary**

Two projects have been completed and two more have been approved and are in progress.

- At the Springfield State Office Building, The Department of Buildings and General Services will replace existing fluorescent lighting with an energy efficient LED lighting and controls system. The LED controls package will be seamlessly incorporated onto the existing building energy management controls system to provide additional energy saving features. The controls upgrade will also implement demand control ventilation and automated dehumidification modifications to the chiller including floating head pressure and the addition of variable speed drives on the main chiller pumps.

This project is estimated to cost \$380,000 and will save an estimated \$56,048 annually in electricity, maintenance and heating/cooling costs, 973 MMBTU's annually, and 140.3 MTCO<sub>2e</sub> annually.

- At the State Police Barracks in Derby, the Department of Buildings and General Services will add insulation and air sealing to the building envelope to reduce heat loss, replace lighting with high efficiency LED lighting, add VFD's to the AHU fans and the boiler pumps, and replace the exhaust and return fans with newer high efficiency motors. The buildings automated control system will also be updated for improved efficiency in the mechanical equipment.

This project is estimated to cost \$149,000 and will save an estimated \$18,208 annually in electricity, maintenance and heating/cooling costs, 657 MMBTU's annually, and 68.6 MTCO<sub>2e</sub> annually.

State government has invested \$1,419,433 from the fund in energy projects that have resulted in over \$100,727 in avoided energy costs to the State. The SERF currently has \$6,304,194 available for funding future resource conservation projects.

These projects have helped to conserve over 2,658 MMBTU of energy and roughly 344 metric tons of carbon dioxide equivalent emissions (MTCO<sub>2e</sub>).