

# ANNUAL REPORT 2017



Annual Report on the Implementation of  
State Government Energy Conservation

# Annual Report on the Implementation of State Government Energy Conservation

December 2017

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South Carolina Office of Regulatory Staff

## Energy Office

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**ENERGY.SC.GOV** 

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# Background

The South Carolina Energy Efficiency Act of 1992 (Act) established the State Energy Office (Energy Office) within the State Budget and Control Board in order to address energy issues in a consistent and professional manner. The Energy Office carries out the state policy and program mandates of this Act and also administers the State Energy Program funded by the United States Department of Energy. The mission of the Energy Office is to increase energy efficiency, enhance environmental quality, and save energy dollars for South Carolina.

The South Carolina Restructuring Act of 2014 dissolved the Budget and Control Board and created the Energy Office within the Office of Regulatory Staff (ORS). This reorganization has not altered the legislatively mandated duties of the Energy Office.

Section 48-52-620 of the South Carolina Code of Laws requires affected state agencies, public school districts, and public colleges and universities (public entities) to develop energy conservation plans and work to reduce their energy consumption by 20 percent by 2020, as compared to 2000 levels. These public entities are required to submit annual energy conservation reports to the Energy Office. The reports consist of data showing energy cost and use per square foot (energy intensity) and a narrative that outlines actions taken to implement the public entity's energy conservation plan; it also chronicles progress made in achieving the entity's energy-use goals (see Section III for more detail). Section 48-52-620(E) requires the Energy Office to compile this information and report it to the General Assembly by December 31 of each year.

To ensure the development of a fair and equitable methodology for implementing this legislative requirement, the Energy Office established an advisory group in 2008. The group consisted of representatives from a variety of state agencies, school districts, and public colleges and universities – all of which were affected by the new legislative mandate. The composition of this group reflected the diversity of public entities affected by this legislation, both in size and type of institution.

Based on the advisory group's suggestions, the Energy Office offered four energy-plan development workshops around the state. A total of 147 people participated in these workshops; participants represented 20 state agencies, 49 school districts, and 17 public colleges and universities. After concluding the workshops, Energy Office staff developed a sample energy conservation plan template that was provided to all public entities and remains available on the Energy Office website.

## Activities in Support of Implementation

Section 48-52-620(E) requires the Energy Office to provide the technical assistance necessary for state agencies and school districts to satisfy the requirements of the law. In addition to the energy plan development workshops noted above, the Energy Office has provided the following:

### Training

In 2009, the Energy Office and the Association of South Carolina Energy Managers created a state-specific alternative to the national Certified Energy Manager® training. While the South Carolina Accredited Commercial Energy Manager (ACEM) program has provided hands-on training to a broad range of participants, its primary purpose is to educate facility and energy managers as they work to reduce energy consumption in support of the legislative requirements. The course teaches participants to identify projects that can reduce their energy consumption and how to calculate their projected energy savings.

Since 2009, a total of 17 ACEM training classes have been held, one of which occurred during FY 2017. A total of 293 individuals have received this extensive energy-management training. The pass rate for the course averages approximately 81 percent, with those passing the test receiving ACEM certification.

### Assistance to Agencies

The Energy Office staff works with public entities requesting assistance with reporting requirements and often devotes considerable effort to identifying and correcting reporting errors. The Energy Office invites public entities to report using the mechanism most convenient for them, which can range from elaborate facility and energy management software to a simple reporting spreadsheet developed by the Energy Office in an Excel format. To improve tracking and reporting, assistance is available to help public entities import their data into Portfolio Manager, a free online tool offered by the U.S. Environmental Protection Agency. The program not only helps with long-term benchmarking but also allows users to apply for ENERGY STAR® designations for individual buildings.

The Energy Office will provide free energy assessments to units of state and local government as well as other entities. These walk-through assessments help to identify cost-effective energy conservation measures and set priorities for action.

See Technical Assistance at [www.ENERGY.SC.GOV/Public](http://www.ENERGY.SC.GOV/Public)

## ConserFund

Funding assistance for energy-efficiency improvements is available through the ConserFund and ConserFund Plus low-interest loan programs. The loans are available to state agencies, public colleges or universities, school districts, local governments, and private non-profit organizations with a fixed annual interest rate currently set at 1.5 percent. ConserFund is structured so that the cost savings resulting from the energy-efficiency upgrades can be used to repay the loan. ConserFund Plus, a recently initiated program, offers funding as 70 percent loan and 30 percent grant and is only available to state agencies, public colleges and universities, and public K-12 schools.

## Energy Performance Contracting

Energy Performance Contracts (EPCs) are another way for agencies and schools to fund energy-efficiency improvements. EPCs are turn-key services provided by an Energy Services Company (ESCO). The ESCO identifies a set of energy-saving opportunities and recommends a package of improvements to be paid for through energy savings. These savings are guaranteed, thus requiring the ESCO to pay the difference if the savings do not materialize.

The Energy Office has conducted three workshops (in December of 2012, February of 2013, and May of 2016) to familiarize government entities with performance contracting. Approximately 75 ESCOs and public agencies attended each of the meetings.



## Milestone Recognition Awards

A grant from the Emily Hall Tremaine Foundation has allowed the Energy Office to provide tangible recognition for those public entities that have met their mandated 20 percent reduction in energy intensity since the year 2000.



Orangeburg Calhoun Technical College



Horry County Schools

The agencies listed below have received Energy Reduction Milestone Achievement Awards to acknowledge meeting the 20 percent energy intensity reduction goal. (Note that recognition does not ensure that an agency's energy use will not rise at some point in the future.)

Aiken Technical College	Piedmont Technical College
Barnwell County School District 29	Richland County School District 1
Barnwell County School District 45	Rock Hill School District 3
Beaufort County School District	SC Department of Corrections
Chesterfield County School District	SC Department of Disabilities & Special Needs
Clarendon County School District 1	SC Department of Employment and Workforce
Clover School District	SC Department of Health & Environmental Control
Coastal Carolina University	SC Department of Mental Health
Colleton County School District	SC Department of Natural Resources
College of Charleston	SC Department of Parks, Recreation & Tourism
Darlington County School District	SC Department of Public Safety
Florence County School District 1	SC Department of Transportation
Florence-Darlington Technical College	SC Division of General Services
Fort Mill School District	SC ETV
Francis Marion University	SC Forestry Commission
Georgetown County School District	SC Law Enforcement Division
Greenville County School District	SC Sea Grant Consortium
Greenville Technical College	Spartanburg Community College
Greenwood County School District 50	Spartanburg County School District 4
Greenwood County School District 51	Spartanburg County School District 5
Horry County Schools	Sumter County School District
Lancaster County School District	The Citadel
Laurens County School District 55	Tri-County Technical College
Lee County School District	USC Aiken
The Military Department	USC Columbia
Newberry County School District	USC Upstate
Northeastern Technical College	Williamsburg County School District
Orangeburg Calhoun Technical College	Williamsburg Technical College
Patriots Point Development Authority	Winthrop University
Pickens County School District	York County School District 1

The Tremaine Foundation has also provided funding to document and publicize energy-efficiency successes among the state's public schools receiving funds from the American Recovery and Reinvestment Act of 2009. A selection of successful case studies is included in Appendix A.

# Submission of Annual Progress Reports

*During 2017, public entities were required to complete the following five sections of the report:*

## **Section 1: Energy Conservation Measures**

This section requires an inventory of energy conservation measures implemented during the year, including any measured or projected energy savings.

## **Section 2: Energy Consumption Data**

In this section, overall energy consumption data is reported, either through a web-based reporting tool or a spreadsheet provided by the Energy Office.

## **Section 3: Purchase of Energy Conservation Products**

This section requests a disclaimer that all purchased energy conservation products have been certified and/or approved by the Energy Office, as per § 48-52-640.

## **Section 4: Energy Retrofit Financing**

This section solicits information about current and past performance contracts and assesses interest in the ConserFund loan program.

## **Section 5: Energy Plan Update and Success Stories**

This section requests that organizations send a current copy of their energy conservation plans to the Energy Office if they made significant changes since 2009. If no major revisions occurred, agencies are asked to provide an update on progress toward achieving the goals outlined in their plans, including both successes and barriers faced.



Ninety-two percent of the public entities submitted complete reports by the deadline. Three percent did not submit a report. The remainder submitted incomplete reports.

<b>Public Entities by Type<sup>1</sup></b>	<b>Total Number of Entities</b>	<b>Complete</b>	<b>% Complete</b>	<b>Partially Complete</b>	<b>% Partially Complete</b>	<b>Non- Submitting</b>	<b>% Non- Submitting</b>
State Agencies	33	32	97%	1	3%	0	0%
Residential Colleges and Universities <sup>2</sup>	12	10	83%	2	17%	0	0%
Non-Residential Colleges and Universities	21	19	90%	0	0%	2	10%
School Districts	81	74	91%	5	6%	2	3%
<b>Totals</b>	<b>147</b>	<b>135</b>	<b>92%</b>	<b>8</b>	<b>5%</b>	<b>4</b>	<b>3%</b>

A list of non-submitting entities is included in Appendix B. Energy Office staff continues to offer ongoing assistance to public entities upon request.

A sample of completed Annual Progress Reports is attached in Appendix C. These reports are included to illustrate the range of energy conservation and efficiency activities used by many public entities. This attachment is a sampling of complete reports and is not intended to imply Energy Office endorsement of the reports included in the sampling over those not included.

<sup>1</sup> For reporting purposes, public entities were separated into peer groups that most closely mirrored their energy consumption and energy expenditure levels. These group types are as follows: state agencies, residential colleges and universities, non-residential colleges and universities, and school districts.

<sup>2</sup> The Medical University of South Carolina is included in the Residential Colleges and Universities organization type for this report as its energy consumption levels are most similar to this peer group.

## Progress toward Energy Conservation Goals

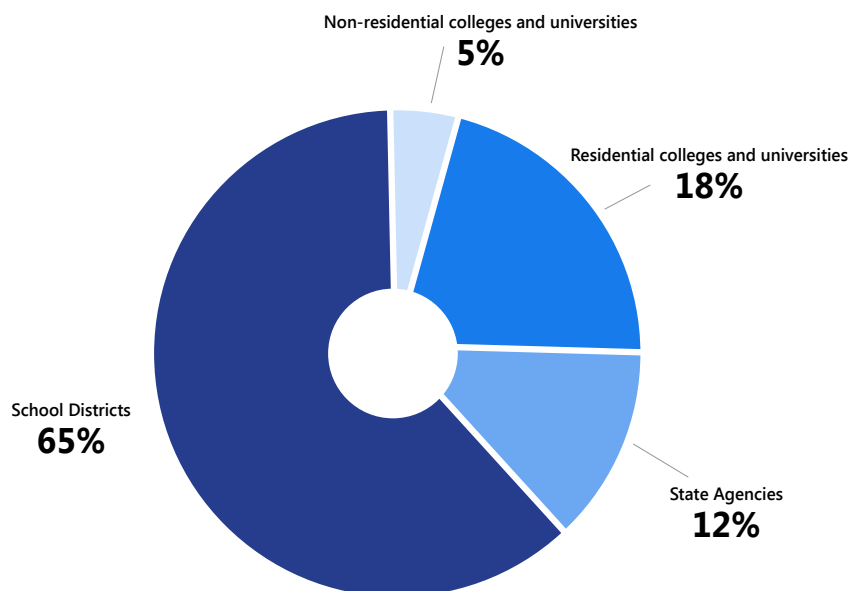
The General Assembly requires public entities to work toward meeting specific goals in reducing their energy intensity (defined as total site energy consumption measured in kBtu per gross square foot). The Energy Office has collected data on energy consumption, energy spending, and building square footage from public entities on an annual basis for more than 20 years. This data can be used as a basis for estimating the progress made by public entities toward meeting required energy goals. However, this data is accepted as received, and the Energy Office can make no representation regarding accuracy. In addition, some entities did not submit reports to the Energy Office, which introduces a potential source of bias. Additional inconsistencies have been introduced because the 2008 legislation exempted buildings constructed under the Energy Independence and Sustainable Construction Act of 2007 as well as buildings not in existence in both 2000 and 2008. However, many agencies and schools report on all their buildings together, and certainly plan for all their buildings together, so the data collected generally include energy intensity in buildings that are not necessarily used to determine whether an agency has met its 20 percent reduction goal. Consequently, the statistics reported in this section should be interpreted with caution.

For the purpose of reporting trends, public entities were separated into peer groups that most closely mirrored their energy consumption and energy expenditure levels. These group types are as follows: state agencies, residential colleges and universities, non-residential colleges and universities, and school districts. The Medical University of South Carolina is included in the Residential Colleges and Universities organization type for this report as its energy consumption levels are most similar to this peer group.

Individual reports for each reporting entity are available upon request.

In FY 2017, school districts accounted for the largest share of square footage by type of public entity (65 percent). The next largest category (18 percent) was residential colleges and universities. State agencies (12

**Square Footage by Public Entity Type** *FY 2017*



percent) and non-residential colleges and universities (5 percent) accounted for the smallest categories of reporting entities.

Data submitted for the most recent fiscal year (FY 2017) indicate that public entities reduced their energy intensity by 21 percent compared to the FY 2000 baseline. School districts – the least energy-intensive category of public entities – reported improvements of 18 percent. Residential colleges – the most energy-intensive category – reported improvements of 21 percent.

Overall, reporting entities were able to reduce their energy use per square foot by approximately 21 percent between 2000 and 2017 (as reported and adjusted for inflation), but energy spending per square foot decreased by only 4.3 percent during this period. This differential indicates that the reporting entities’ efforts to control energy use are paying off; without those efforts, rising energy costs are likely to have a very significant effect on agency budgets.

Public Entities by Type	Average Energy Use per Square Foot (site kBTU)			Average Energy Spending per Square Foot (\$)		
	FY 2000	FY 2017	% change	FY 2000 <sup>1</sup>	FY 2017	% change
State Agencies	113	85.70	-24%	\$2.01	\$1.98	-1.5%
Residential Colleges and Universities	143	113.68	-21%	\$1.88	\$1.78	-5.6%
Non-Residential Colleges and Universities	80	61.06	-24%	\$1.67	\$1.65	-1.2%
School Districts	45	36.96	-18%	\$1.20	\$1.17	-2.6%
<b>Overall</b>	<b>74</b>	<b>58.37</b>	<b>-21%</b>	<b>\$1.46</b>	<b>\$1.40</b>	<b>-4.3%</b>

*Note: These statistics are based on self-reported data submitted by public entities. The Energy Office makes no representation regarding the accuracy of these data.*

<sup>1</sup> These figures have been adjusted for inflation using the Bureau of Labor Statistics of the U.S. Department of Labor Consumer Price Index-Urban, (available at data.bls.gov). Therefore, the figures here are presented in 2017 dollars.

In aggregate, public entities have reported significant improvements in energy intensity compared to the FY 2000 baseline.

Based on the information submitted to the Energy Office, public entities have achieved, as a whole, the 20 percent goal set by the General Assembly. Energy savings are being realized, and FY 2018 will provide an opportunity for public entities to continue to reduce their energy consumption. The Energy Office is only able to report on the data submitted by public entities. Partially complete or missing data also affect the savings metrics and can lead to difficulty in year-by-year comparisons of energy use.

Public Entities Energy Usage	
Fiscal Year	kBTU per ft <sup>2</sup>
2000	75
2017	58

The 20% reduction goal has been met when the kBTU/ft<sup>2</sup> value is less than or equal to 60.

*These statistics are based on data submitted by public entities.  
The Energy Office makes no representation regarding the accuracy of these data.*

## Conclusion

The Energy Office continues to provide training, technical assistance, and funding to public entities in support of their efforts to achieve energy-conservation goals. In addition, the Energy Office has identified agencies that appear to be having difficulty meeting the goals and is prepared to conduct energy audits, if those agencies are interested. Overall, the state's agencies and public schools have done an excellent job of reducing energy use, even as energy costs increase. As a group, they have achieved the mandated goal. The Energy Office continues to work with individual agencies to help them achieve the mandated goal as well.





# **APPENDIX A:**

## Success Story







**PROJECTED LIFETIME SAVINGS** (15 YEARS)  
AT A GLANCE

<b>Natural Gas</b>	138,416 therms \$145,337
<b>Electricity</b>	5,189,646 kWh \$648,706

SC ENERGY SUCCESS

# SWANSEA HIGH SCHOOL

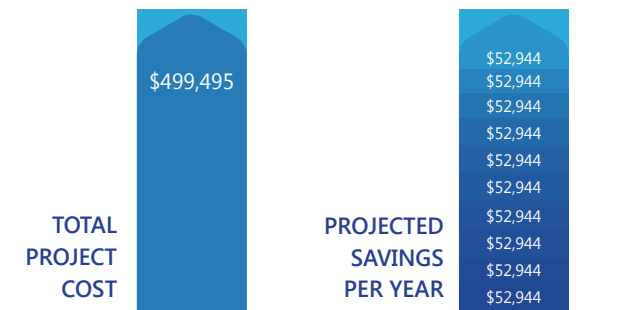
Prior to 2013, Swansea High School was the highest energy consumer in Lexington School District 4. This was partially the result of an oversized boiler and chiller, an overworked air handler, and equipment which was at, or very near the end of, its useful life. The district worked with energy professionals to identify a suite of energy conservation measures. The quick payback measures cushioned the cost of the more expensive and longer-payback measures.

**The district desperately needed to find a solution to its growing utility bills.**

“ ConserFund worked particularly well for the district, because repayment isn’t required until one year after the project is completed, allowing time for our savings to accrue and be used to finance such a capital intensive project. ”



**Dave Toole**  
Director of Operations  
Lexington School District 4



In 2013 the district received a ConserFund Loan through the South Carolina Energy Office (Energy Office) to fund their large scale HVAC project. The \$499,495 loan was estimated to pay itself back in 9.4 years with savings from the upgraded and optimized equipment.

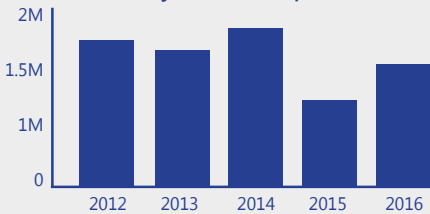
## BOILER & CHILLER

In addition to installing a high-efficiency condensing boiler, the district installed a magnetic bearing chiller, increasing efficiency by reducing the friction between component parts. The chilled and hot water motors were also replaced with more appropriately sized premium-efficiency motors with variable frequency drives (VFD). VFDs allow tighter control of motor speed to prevent unnecessary power use during part load conditions.

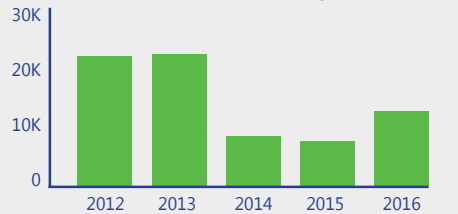
## CONTROL STRATEGY

The district implemented a new control strategy to reduce unnecessary re-heat and simultaneous heating and cooling of air. This strategy utilizes a range of techniques such as employing the newly installed VFDs to lower fan speed for dehumidification, supply air and chilled water temperature reset, and duct static pressure reset to better match part load conditions.

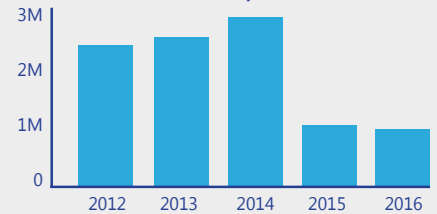
Electricity Consumption (kWh)



Natural Gas Consumption (therms)



Water Consumption (gal)



## AIR HANDLERS

On the chilled water loop, two air handler units were upgraded to use variable frequency drives (VFDs) and demand controlled ventilation with economizers to utilize outdoor air for conditioning instead of running unnecessary equipment, while one roof top unit was completely replaced.

## HUMIDITY & MOTION SENSORS

Multiple humidity and motion sensors were deployed. Humidity sensors allow for humidity control during unoccupied hours, minimizing outdoor air inflow during shutdown times, and motion sensors act as "vacancy sensors" to shut down HVAC units when no one is present.

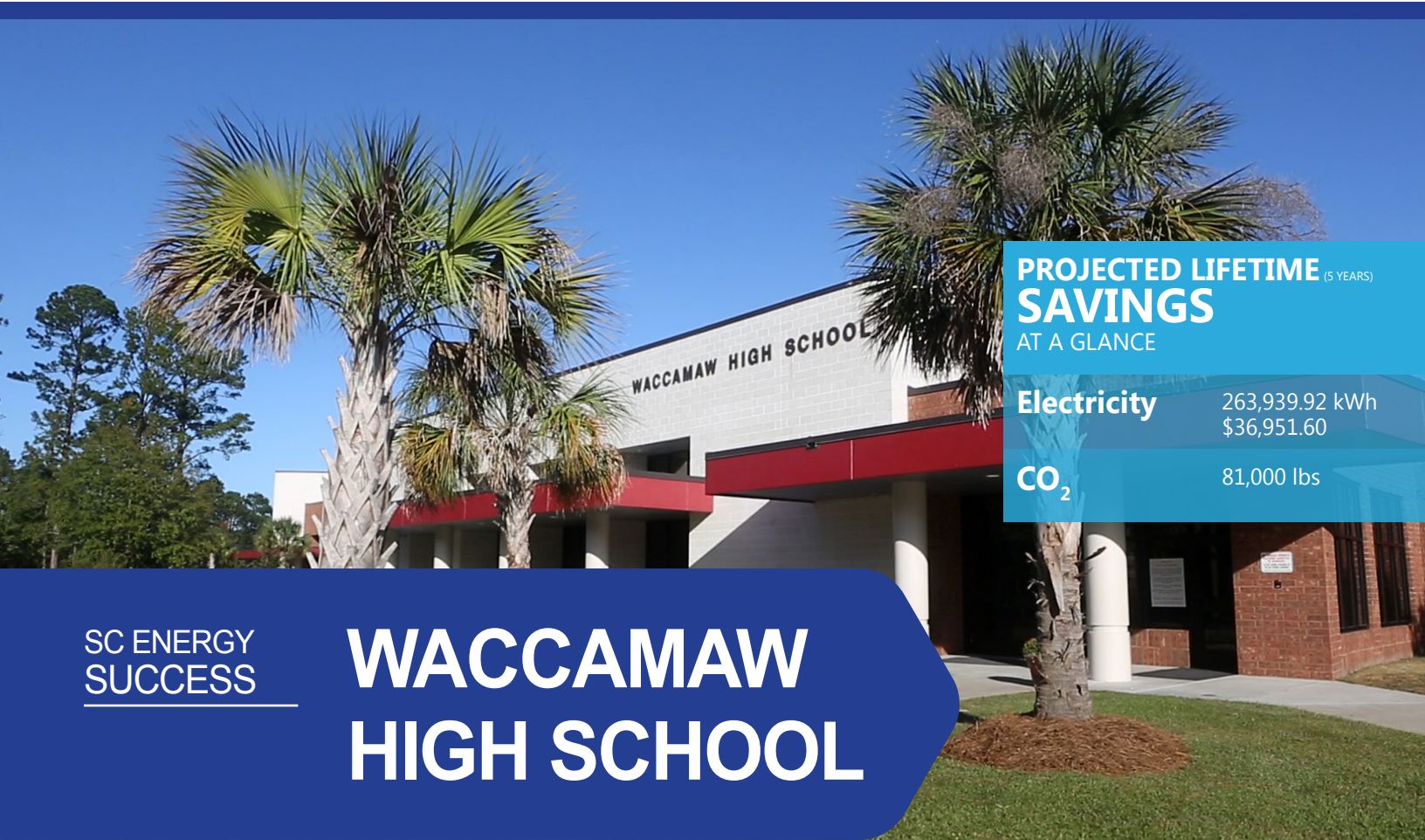
## BUILDING AUTOMATION SYSTEM

To allow for more aggressive scheduling, the building automation system (BAS) was upgraded to include optimum start, a scheduling strategy which takes into account outside temperature and inside zone temperatures when preparing the building climate for the occupant.

The project resulted in significant energy, maintenance, and water savings, bringing the district's highest energy consuming school to the third most energy efficient.

Following the success of this project, Mr. Toole says the district would like to investigate the benefits of installing LED lighting in place of current, less efficient lighting across the entire district.

For more information about funding opportunities available through the Energy Office, visit [ENERGY.SC.GOV / Incentives](http://ENERGY.SC.GOV/Incentives)



**PROJECTED LIFETIME SAVINGS** (5 YEARS)  
AT A GLANCE

<b>Electricity</b>	263,939.92 kWh \$36,951.60
<b>CO<sub>2</sub></b>	81,000 lbs

SC ENERGY SUCCESS

# WACCAMAW HIGH SCHOOL

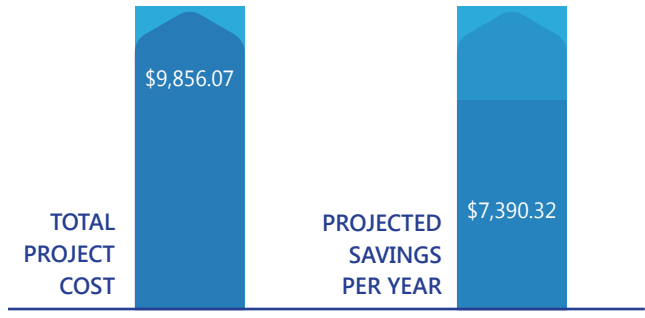
Georgetown County School District (GCSD) installed 45 LED bulbs as a test case for a science class at Waccamaw High School. The test classroom showed the lights were brighter and used less energy. The project also demonstrated how the utility rebate program worked.

**The test classroom showed the lights were brighter and used less energy.**

“ There’s three bulbs in each fixture with two different switches. One switch for the middle single lamp and one for the two outside bulbs. Since the brightness has increased, the classes only use one switch to turn the two outside lamps on, saving even more energy. ”



**Tony Holcomb**  
Maintenance Coordinator  
Georgetown County School District



Seeing success and savings from the project, GCSD applied for and received a mini-grant from the Office of Regulatory Staff Energy Office (Energy Office) in late 2016 to retrofit more of the lighting in Waccamaw High School. GCSD also made the investment to match the \$5,000 mini-grant with district funds to bolster the scope of the project and convert more lighting.

## LED RETROFIT

The school district originally planned to replace 300 of the 34 watt T12 fluorescent bulbs with 15 watt LED bulbs. The T12 bulbs only last for about 2 years, whereas the LED bulbs last about 5 years.

## BUYING IN BULK

After receiving the mini-grant, GCSD's procurement team contacted several vendors to find the best pricing for the new LED bulbs. The cost of the bulbs was reduced due to the large order, allowing the district to increase the amount of bulbs they would replace to 800 bulbs.

## IN-HOUSE INSTALLATION

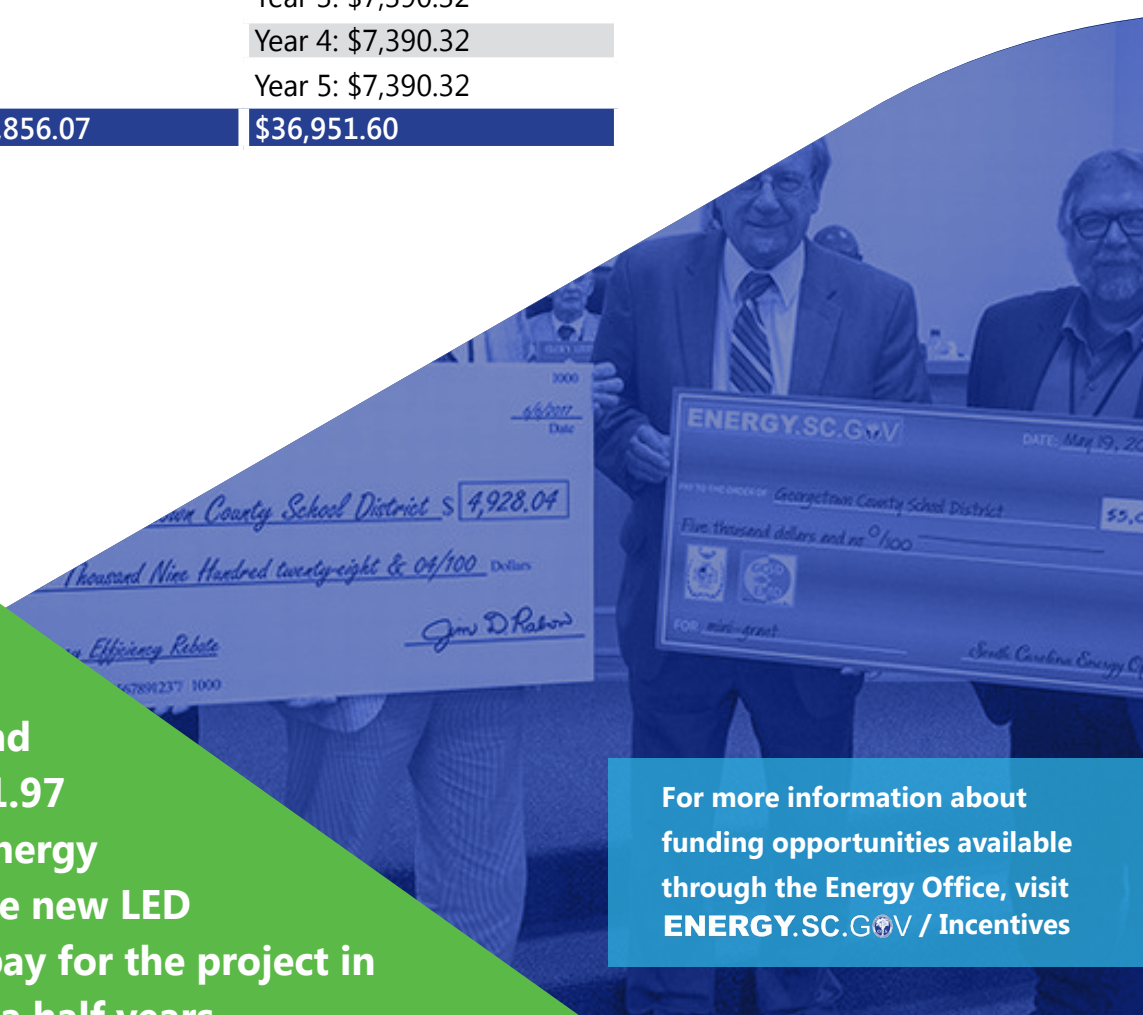
The new LED bulbs were installed with in-house labor, providing the district with even more savings. The Facilities Electrical Department started work after 4 p.m. when school was dismissed as to not interrupt educational time for the students. Workers were able to install the bulbs in a timely manner without replacing the fixtures, saving even more money.

## UTILITY REBATE

After the installation was completed in the spring of 2017, GCSD applied for Santee Cooper's lighting rebate program. Santee Cooper's rebate program paid back the district's investment by providing a \$4,928 rebate.

Funding	Cost	Projected Lifetime Savings
Mini-Grant: \$5,000.00	LED Bulbs: \$5,007.60	Year 1: \$7,390.32
Utility Rebate: \$4,928.00	Labor: \$4,848.47	Year 2: \$7,390.32
		Year 3: \$7,390.32
		Year 4: \$7,390.32
		Year 5: \$7,390.32
<b>\$9,928.00</b>	<b>\$9,856.07</b>	<b>\$36,951.60</b>

The mini-grant and Santee Cooper rebate covered the cost of the LED bulbs and in-house labor, with \$71.97 to spare. With annual energy savings of \$7,390.32, the new LED bulbs are projected to pay for the project in approximately one and a half years.



For more information about funding opportunities available through the Energy Office, visit [ENERGY.SC.GOV](http://ENERGY.SC.GOV) / Incentives

# **APPENDIX B:**

## Non-Reporting Entities



At the time this annual report was written, the following entities had not submitted any reports:

Anderson School District 1

Denmark Technical College

Florence County School District 4

USC-Beaufort





# **APPENDIX C:**

## Sample Progress Reports

*Disclaimer: The reports in this section are re-printed as submitted to the Energy Office by the reporting entities and are meant to illustrate the programs undertaken in FY 2017. Errors contained in this section are not the responsibility of the Energy Office and the reports have not been altered or corrected.*



# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
State Government Energy Conservation Act, Code of Laws of South Carolina

## Organization Name:

SC Department of Mental Health

Person(s) Filing Report (name, phone number, email):

Randy Carver 803-935-5621 david.carver@scdmh.org

Please complete this report and return it to Julia Parris at the Office of Regulatory Staff, Energy Office ([jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov)) no later than September 15, 2017. Completion of Section II requires the submission of energy consumption data, as described below. You may use the attached reporting tool or the format you normally use to track your energy use.

This report will allow the Energy Office to verify your compliance with the State Government Energy Conservation Act (§48-52-610 through 680 and §48-52-910, Code of Laws of South Carolina). In addition, the energy consumption data you provide will be made available to assist in statewide energy planning efforts. Please ensure that your submission is as complete and accurate as possible. If you need additional space, please attach pages or documents as necessary. If you have questions, please contact Julia Parris at 803-737-9825 or [jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov).

## Section I: Energy Conservation Measures

§48-52-820 requires entities to report activities undertaken to implement their Energy Conservation Plan. For this section, please list each energy conservation measure that you implemented in FY17. For each measure, please include the following:

1. A description of the energy conservation measure implemented including an estimate of square footage affected.
2. The estimated and/or observed annual energy savings (if available) and estimation method (if applicable.).
3. If any of your facilities have solar panels used to generate energy for the facility or to put back on the grid, please provide the name of the facility, kW (AC) capacity, and the interconnected utility.

If you implemented no energy conservation measures in FY16, simply write "None."

See Attachment "A" for energy intensity & cost summary plus projects completed during FY-16/17.

# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
State Government Energy Conservation Act, Code of Laws of South Carolina

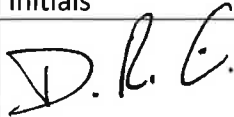
## Section II: Energy Consumption Data

To verify progress made toward state energy conservation goals and to assist in statewide energy planning efforts, please provide your complete energy consumption data for FY17 (including all sources of energy used in your buildings) in a format described below:

- If you use energy accounting software, please submit a file containing data showing energy consumption, energy cost, and gross square footage in FY17:
  - As totals for your organization
  - If available, for each meter and/or each building in your organization
- If you do not use any energy accounting software:
  - You may choose to complete and submit the file entitled "SCEO Consumption Reporting Tool", which can be downloaded from our website (please click [here](#)).
  - You might also want to consider using Portfolio Manager, the free, web-based energy accounting system provided by ENERGY STAR. To access Portfolio Manager, please click [here](#). If you would like more assistance with entering your data into Portfolio Manager, please email [jparris@reqstaff.sc.gov](mailto:jparris@reqstaff.sc.gov).
  - Otherwise please submit data using Excel.

## Section III: Purchase of Energy Conservation Products

§48-52-640 mandates that all state agencies "shall submit a disclaimer statement to the State Energy Office with [their] annual report stating that [they] did not purchase an energy conservation product that had not been certified by the State Energy Office." The Energy Office has posted a list of pre-certified and/or approved energy conservation products/measures on our website (please click [here](#)). For any products/measures not listed here, agencies should contact Conn Fraser at [cfraser@reqstaff.sc.gov](mailto:cfraser@reqstaff.sc.gov) or by telephone at 803-737-5229.

Statement	Initials
I hereby certify that my organization did not purchase any energy conservation products that have not been certified and/or approved by the Energy Office.	

# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
State Government Energy Conservation Act, Code of Laws of South Carolina

## Section IV: Energy Retrofit Financing

1. Did you enter into a guaranteed energy savings performance contract (GESPC) in Fiscal Year 2017? Yes  No  (Check one)
  - a. If so, please indicate the Energy Services Company (ESCO) or consultant used:  
\_\_\_\_\_
  - b. If no, please indicate why not:
    - A need for energy efficiency improvements was not determined
    - Unfamiliarity with GESPC/process seemed too complicated
    - Was not aware of GESPC
    - GESPC process seemed too costly
    - Other reason: Lack of confidence in obtaining results.
2. Have you entered into a GESPC in years prior to FY17? Yes  No  (Check one)
  - a. If so, please indicate the ESCO or consultant used: \_\_\_\_\_
3. Are you interested in receiving information about GESPC? Yes  No  (Check one)
4. Are you interested in receiving information about the ConserFund loan program, ConserFund Plus (an expansion of ConserFund that includes a 30% grant/70% loan option) Yes  No  (Check one)

## Section V: Energy Plan Update & Success Stories

### Energy Plan Updates

- A. You submitted an Energy Conservation Plan, required by law, to the Energy Office in 2009; if you have significantly revised your Plan please send a copy for our files to [jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov).
- B. If you have not made significant revisions to your Plan, but have only refined it, please provide a brief write-up addressing any changes that may have occurred since submission of your Plan in 2009. Please include energy team training and education. In addition, please let us know about any successes deserving mention, or barriers to improvement that you have faced. We want to publicize your successes and assist with obstacles where we can.

## FY17 Annual Progress Report

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SC DMH will need to evaluate ways to reduce energy consumption for the larger facilities with the highest energy intensity to further reduce energy consumption. Majority of the energy intensity reduction will be achieved by replacing existing lighting in Bryan Hospital, Harris Hospital and Victory House Nursing Home over the next few years.

Project has been approved and funded to replace the entire HVAC system at Harris Hospital located in Anderson, SC. Total savings from the project will not be realized until the project is completed in early 2019.

*Thank you for your assistance in completing this report. Please call Julia Parris (803-737-9825, [jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov)), Conn Fraser (803-737-5229, [cfraser@regstaff.sc.gov](mailto:cfraser@regstaff.sc.gov)) or Stacey Washington (803-737-0804, [swashington@regstaff.sc.gov](mailto:swashington@regstaff.sc.gov)) if you have questions or need assistance.*

# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
State Government Energy Conservation Act, Code of Laws of South Carolina

## Organization Name:

York Technical College

Person(s) Filing Report (name, phone number, email):

Robert Brown, 803-981-7375, rbrown@yorktech.edu

Please complete this report and return it to Julia Parris at the Office of Regulatory Staff, Energy Office ([jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov)) no later than September 15, 2017. Completion of Section II requires the submission of energy consumption data, as described below. You may use the attached reporting tool or the format you normally use to track your energy use.

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## Section I: Energy Conservation Measures

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2. The estimated and/or observed annual energy savings (if available) and estimation method (if applicable.).
3. If any of your facilities have solar panels used to generate energy for the facility or to put back on the grid, please provide the name of the facility, kW (AC) capacity, and the interconnected utility.

If you implemented no energy conservation measures in FY16, simply write "None."

1. Lighting Replacement and Occupancy Sensor Installations in Bldgs H, K, and N.
2. Air Compressor Motor Timers Installed
3. Bldg D Boiler Controls - Outside Air Resets
4. Flush Valve Replacements on Urinals and Toilets Completed
5. Pneumatic Thermostats Re-calibration Campus Wide utilizing SchoolDude Preventative Maintenance Schedules.

York Technical College achieved a 7% reduction in use per square foot from FY 2016 to FY2017. Total KBTUs for Electric and Natural gas reduced from 37,800,551 KBTUs to 35,037,329 KBTUs.

\*\*\*SEE next page for details on each energy measure.

## YTC – Energy Savings Measures for FY 2017

### **1. Lighting Replacement and Occupancy Sensor Installations in Bldgs H, K, and N.**

- a. Occupancy Sensors were installed in Bldg H. Shops lights in Bldg C Rear expansion were converted from 400 watt to LED fixtures. Soffit lighting was replaced in Bldgs H, K and N. Not sure of total square footage impacted.
- b. Energy Savings are based on spreadsheet calculations using the original light fixtures. We made assumptions regarding the run-time hours of our spaces as well as the percentage of time that those spaces are unoccupied during the run-time hours. Spaces were classified according to their use type. Specific assumptions can be found in the spreadsheet provided called “16-17 Light-OCC Sensor Replace” The estimated annual savings from these lighting replacements & occupancy sensors is \$ 7,028 and 50,202 kwh or 171,340 KBtus.

### **2. Air Compressor Motor Timers**

- a. Installed timers on 4 air compressor motors in Bldgs C, D, F, and G reducing run time by 25 %. Timers cut off compressors overnight keeping these motors from cycling through the night.
- b. Energy Savings are based on spreadsheet calculations using the original light fixtures. We made assumptions regarding the run-time hours of our compressors. Specific assumptions can be found in the spreadsheet provided called “16-17 Light-OCC Sensor Replace” The estimated annual savings from these compressor motor controls is \$ 1,344 and 9,600 kwh or 32,765 KBtus.

### **3. Bldg D Boiler Controls**

- a. Installed controls on hot water boiler for Bldg D allowing the water temperature to modulate with outside air temperatures.
- b. Unable to compare savings at this time. Will revisit after the completion of the Winter cycle to determine savings.

### **4. Flush Valve Replacements**

- a. Flush valves were installed on toilets & urinals (10 units) and 10 faucets which completed a conversion to auto flush valves campus-wide.
- b. No savings calculated for this measure however we know that typically there is a 20% savings for toilets, 50% savings for urinals, faucet sensors can reduce water use by 40%.

### **5. Pneumatic Thermostats Re-calibration**

- a. Utilizing SchoolDude Preventative Maintenance Schedules, York Tech performed a semi-annual calibration for all pneumatic stats campus-wide to ensure desired set points 68-72.
- b. No savings has been calculated for this measure since we do not meter the HVAC separately from the building.



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  - As totals for your organization
  - If available, for each meter and/or each building in your organization
- If you do not use any energy accounting software:
  - You may choose to complete and submit the file entitled "SCEO Consumption Reporting Tool", which can be downloaded from our website (please click [here](#)).
  - You might also want to consider using Portfolio Manager, the free, web-based energy accounting system provided by ENERGY STAR. To access Portfolio Manager, please click [here](#). If you would like more assistance with entering your data into Portfolio Manager, please email [jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov).
  - Otherwise please submit data using Excel.

## Section III: Purchase of Energy Conservation Products

§48-52-640 mandates that all state agencies "shall submit a disclaimer statement to the State Energy Office with [their] annual report stating that [they] did not purchase an energy conservation product that had not been certified by the State Energy Office." The Energy Office has posted a list of pre-certified and/or approved energy conservation products/measures on our website (please click [here](#)). For any products/measures not listed here, agencies should contact Conn Fraser at [cfraser@regstaff.sc.gov](mailto:cfraser@regstaff.sc.gov) or by telephone at 803-737-5229.

Statement	Initials
I hereby certify that my organization did not purchase any energy conservation products that have not been certified and/or approved by the Energy Office.	RLB

# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
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## Section IV: Energy Retrofit Financing

1. Did you enter into a guaranteed energy savings performance contract (GESPC) in Fiscal Year 2017? Yes  No  (Check one)
  - a. If so, please indicate the Energy Services Company (ESCO) or consultant used:  
\_\_\_\_\_
  - b. If no, please indicate why not:
    - A need for energy efficiency improvements was not determined
    - Unfamiliarity with GESPC/process seemed to complicated
    - Was not aware of GESPC
    - GESPC process seemed too costly
    - Other reason: \_\_\_\_\_
2. Have you entered into a GESPC in years prior to FY17? Yes  No  (Check one)
  - a. If so, please indicate the ESCO or consultant used: \_\_\_\_\_
3. Are you interested in receiving information about GESPC? Yes  No  (Check one)
4. Are you interested in receiving information about the ConserFund loan program, ConserFund Plus (an expansion of ConserFund that includes a 30% grant/70%loan option) Yes  No  (Check one)

## Section V: Energy Plan Update & Success Stories

### Energy Plan Updates

- A. You submitted an Energy Conservation Plan, required by law, to the Energy Office in 2009; if you have significantly revised your Plan please send a copy for our files to [jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov).
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- A. No significant changes to our Energy Conservation Plan.
- B. No changes at this time.

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# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
State Government Energy Conservation Act, Code of Laws of South Carolina

## Organization Name:

Charleston County School District

Person(s) Filing Report (name, phone number, email):

David Frazier, 843-746-7473, david\_a\_frazier@charleston.k12.sc.us

Please complete this report and return it to Julia Parris at the Office of Regulatory Staff, Energy Office ([jparris@regstaff.sc.gov](mailto:jparris@regstaff.sc.gov)) no later than September 15, 2017. Completion of Section II requires the submission of energy consumption data, as described below. You may use the attached reporting tool or the format you normally use to track your energy use.

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If you implemented no energy conservation measures in FY16, simply write "None."

Charleston County School District (CCSD) continued working with Cenergistic and implementing their energy savings program in FY17. This affects all 8.5 million square feet and resulted in an avoided cost of \$1,782,660 to the CCSD utilities budget which was shared with Cenergistic. Cost avoidance was estimated using IPMVP Option C (Whole Facility). The measures implemented resulted in avoided cost in water and energy. Energy savings is 4,359,221 kWh based on comparison with last year's energy consumption. CCSD's maintenance shop continues to perform small lighting upgrades as funding becomes available, but savings have not been estimated or measured. CCSD's capital maintenance program performed HVAC upgrades for two schools. Savings are estimated to be approximately \$53,000 and 376,000 kWh annually based on improved SEER.

# FY17 Annual Progress Report

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## Section II: Energy Consumption Data

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# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
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## Section IV: Energy Retrofit Financing

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\_\_\_\_\_
  - b. If no, please indicate why not:
    - A need for energy efficiency improvements was not determined
    - Unfamiliarity with GESPC/process seemed too complicated
    - Was not aware of GESPC
    - GESPC process seemed too costly
    - Other reason: RFQ was drafted for GESPC in FY17, but not yet issued.
2. Have you entered into a GESPC in years prior to FY17? Yes  No  (Check one)
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3. Are you interested in receiving information about GESPC? Yes  No  (Check one)
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Charleston County School District has updated the Design Requirements for new construction to include requirements for LED lighting, HVAC efficiency, and HVAC controls.

Cenergistic has entered energy data into Portfolio Manager on behalf of CCSD and processed applications for Energy Star certification. Fifty-eight schools have been awarded Energy Star certification this year. Harbor View Elementary is distinguished as the 10,000th Energy Star certified school.

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# FY17 Annual Progress Report

To be submitted to the Office of Regulatory Staff, Energy Office  
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## Organization Name:

Medical University of South Carolina

## Person(s) Filing Report (name, phone number, email):

Christine von Kolnitz

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- 1) VFD's for fans and pumps at BEE St Central Energy Plant (see attached)
- 2) Change fluorescent tubes for LED's at Strom Thurman Penthouse (see attached)



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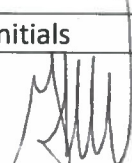
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We signed the contract with Ameresco, June 13, 2017. Our plan is to continue working with Ameresco on the IGA. We expect this process to wrap up during the winter of 2018. One aspect we are looking at is to build and operate a Co-gen plant. We are in negotiations with SCE&G on a standby tariff, the cost of which may make this project unfeasible.

We are also working with Johnson Controls on a project to meter all of our utilities. We have a list with cost projections. We will be looking into funding for this effect. The Sean Jenkins Children's Hospital will be built with meters in place.

The Sean Jenkins Children's Hospital is being built to LEED Silver Standards. This hospital is designated to open in 2019.

Leach Wallace conducted a study for energy conservation of systems for chilled water and heating water at MUSC. Their report showed that we have the potential to connect several systems on-campus, perform upgrades, perform deferred maintenance and metering which will result in a project that could save \$1.2 million a year. It is possible that these projects could be rolled into the performance contract.

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**ENERGY.SC.GOV**

Office of Regulatory Staff

1401 Main Street  
Suite 900  
Columbia, SC 29201

