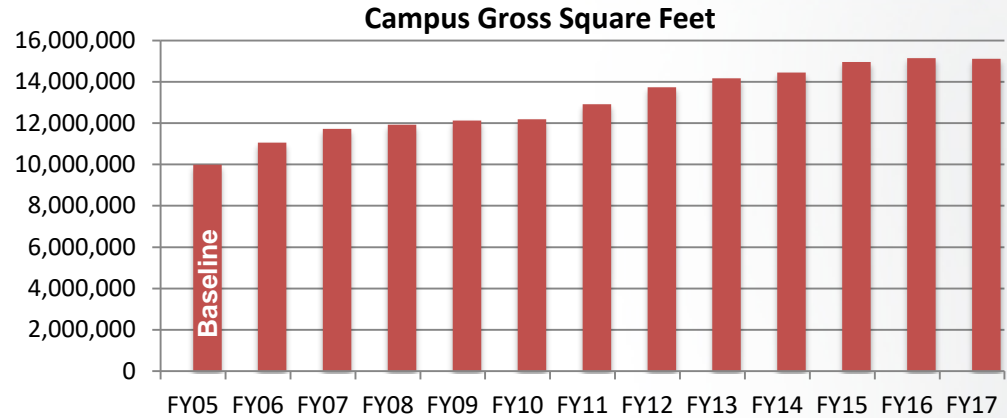


**Holiday Energy  
Savings Initiative  
Report  
FY 2018**

# Program Overview

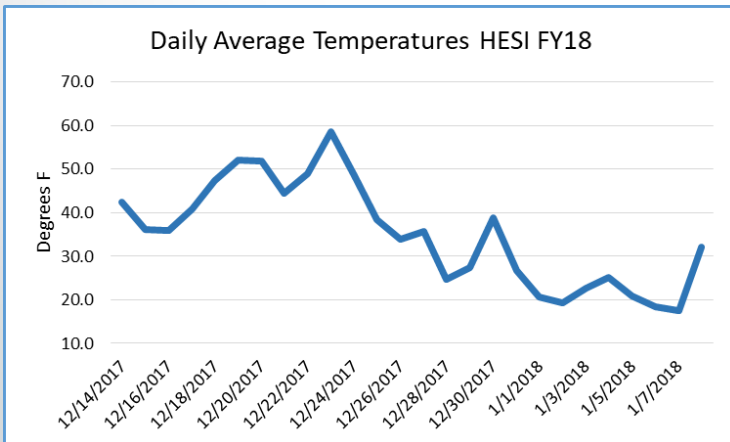
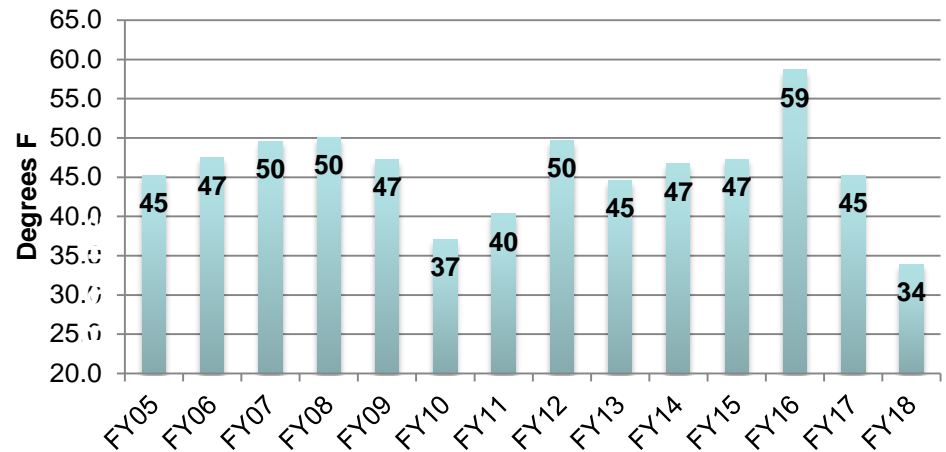
- Project Description
  - The NC State campus closes annually for the Winter Holiday. During this time, building thermostat temperature setpoints are lowered, unnecessary lights and equipment are turned off, and doors and windows are closed to reduce utility consumption. These tasks are called energy conservation measures (ECMs). The setback temperatures are 65°F ±5. This temperature range ensures buildings are not damaged from freezing conditions, while at the same time providing opportunities for energy conservation. Cooling thermostat setpoints are adjusted as well to 80°F ±5, in the event that warm weather leads to a call for cooling in the buildings.
- Business Case
  - By setting back buildings, NC State can save natural gas and electricity thereby avoiding utility costs and lowering carbon emissions.
  - During the FY 2018 Holiday Energy Savings Initiative (HESI), **\$201,981** in energy costs were avoided. Since the established baseline in FY 2005, the program has avoided **\$3,685,785** in energy costs.
- Exemption Process
  - The program has a formal exemption process that allows select buildings and building zones to remain at normal heat and humidity operating levels throughout the setback period.
  - Research labs, occupied residences halls, and special need areas (library and art collection standards) are automatically exempt from the temperature setbacks.
- Education and Outreach
  - The campus community is informed about the program through email and routine media outlets, such as flyers, campus digital billboards, and social media.

- Growth of NC State’s Campus
  - NC State has grown rapidly, adding more than 5 million square feet of building space in the last decade. Along with this growth, energy consumption is generally expected to grow at a similar rate. In order to compare energy use to prior years, energy consumption per gross square foot (GSF) is the accepted unit of measure.



- The Effect of Weather
  - Colder temperatures equate to a higher demand for energy for heating campus buildings. FY18 saw the coldest holiday break since the HESI program began.

Average Temperatures During HESI  
FY05 - FY18



NCSU Holiday Energy Savings Initiative Calendar of Events						
December 2017 - January 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					DEC 1 LAST DAY OF CLASSES	2
3	4 FINAL EXAMS BEGIN	5	6	7	8	9
10	11 EXEMPTION REQUEST DEADLINE: NOON	12	13 FINAL EXAMS END	14 SET BACK CLASSROOMS & TEACHING LABS	15 FALL GRADUATION	16 SET BACK RESIDENCE HALLS
17	18	19	20	21	22	23 UNIVERSITY CLOSES
24	25	26	27	28	29	30
31	JAN 1	2 UNIVERSITY OPENS	3 RESIDENCE HALLS REOPEN	4	5	6
7	8 FIRST DAY OF SPRING SEMESTER CLASSES	9	10	11	12	13

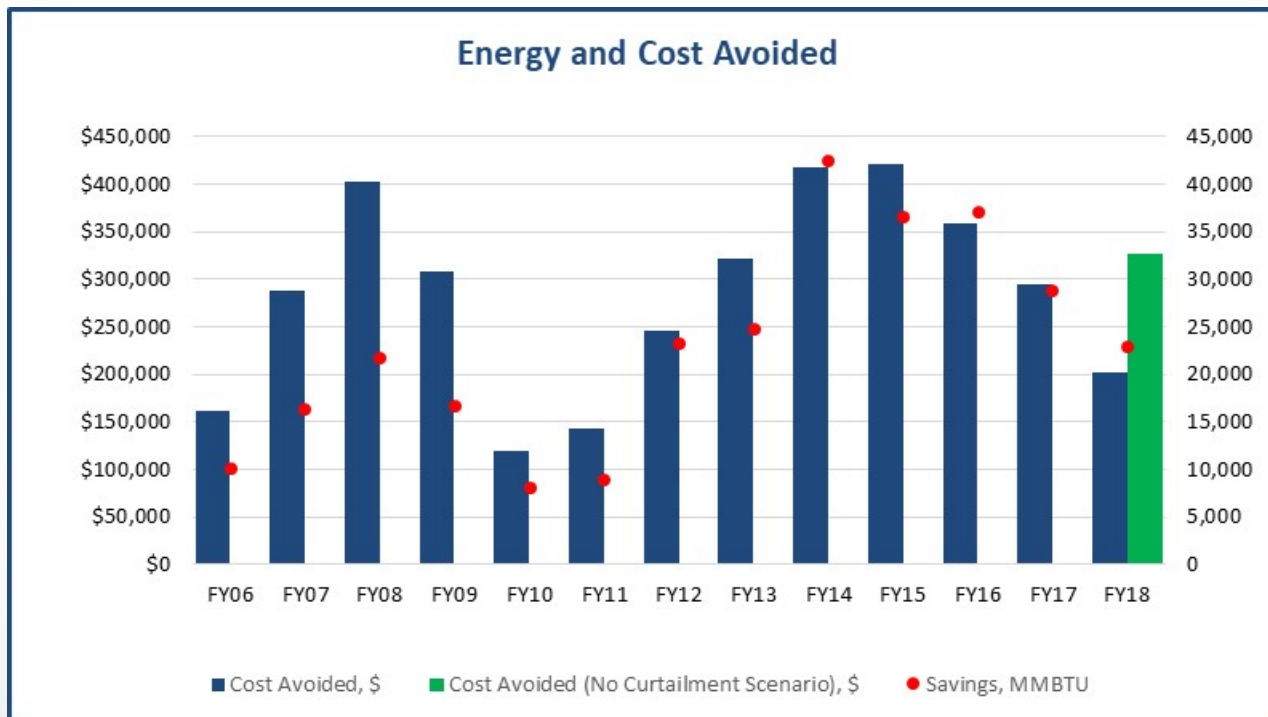
FY18 Savings Period Duration

While the complete HESI period lasted for 25 days this year, energy data can only be compared to the 2005 baseline for the period of HESI Level 3. Thus, total energy savings figures quoted in this report are underestimates – actual savings are greater.

Legend	
Level 1	Classrooms and Teaching Labs set back
Level 2	Residence Halls, Classrooms and Teaching Labs set back
Level 3	Full Winter Break - Admin Bldgs, Classroom Bldgs, Residence Halls, Teaching Labs, Parking Garages all set back

# Avoided Energy Costs

Avoided energy costs are calculated by comparing the energy consumption during the FY05 baseline and normalizing for the changes in length of savings period and campus gross square footage between the base year and the savings year, and then applying the energy prices for the current savings year. Using this approach, \$201,981 in energy costs were avoided in FY17, and a total of \$3,685,785 have been avoided since the program began in FY06.



The green bar represents the theoretical amount of avoided cost that would have been avoided had the natural gas supply not been curtailed, which resulted in the need to burn expensive fuel oil during some of the HESI period. If there had been no natural gas curtailment, the avoided cost would have totaled over \$325,000.

# Questions or Comments

Erik W. Hall, MBA CEFP  
Director of Energy Management  
Energy Systems  
North Carolina State University  
919-513-0142 (office)  
[ewhall@ncsu.edu](mailto:ewhall@ncsu.edu)