

Greenhouse Gas KPI 2013

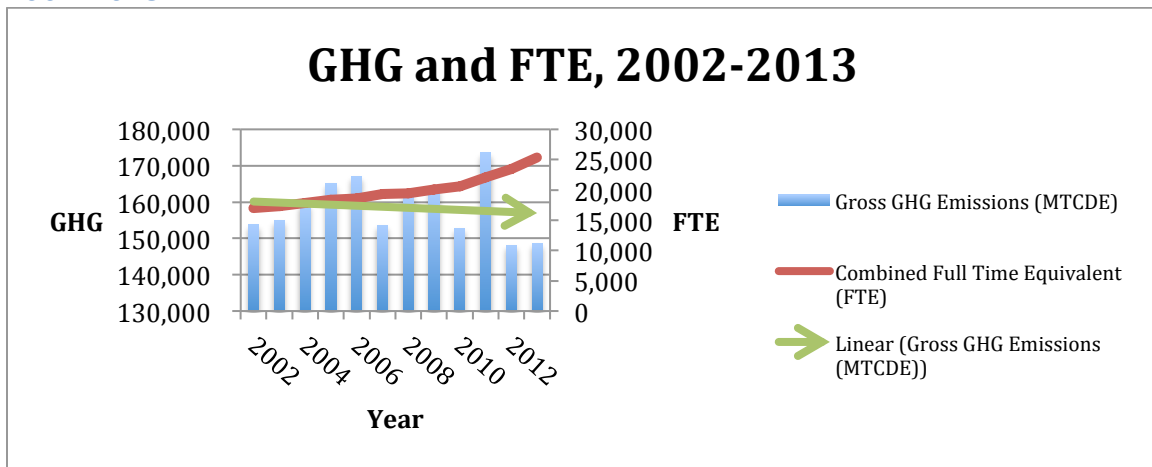


Introduction

Since 2002, the University of Arkansas decreased gross greenhouse gas emissions despite an increase in building space, students, staff and faculty. Gross greenhouse gas emissions were reduced by 3.31% while a combined full time equivalent of students, staff and faculty increased by 33% and total gross square feet increased by 21% since 2002.

Total greenhouse gas emissions for 2013 were 148,616 metric tons of carbon dioxide equivalent (MTCDE), while emissions for 2002 were 153,702 MTCDE.

Figure 1. Gross GHG Emissions and Combined student, staff and faculty FTE, 2002-2013.



Gross Square Feet

The University of Arkansas added more than 1.6 million square feet of living, research and classroom space since 2002. Since 2009, all Education and General Purpose buildings were built to LEED Standards and some buildings were awarded Green Globe Certification. Recently, two buildings were awarded LEED Gold. LEED requirements, such as high efficient building envelopes, have helped to maximize energy efficiency in high performance buildings.

Additionally, \$52 million Energy Savings Performance Contracts (ESPCs) continue to deliver emissions and cost avoidance. LEED building and ESPC's have helped to drive down energy consumption and its associated emissions.

FTE

Within the last three years, the University of Arkansas experienced unprecedented growth in full time equivalent students, staff and faculty. Since 2002, total student, faculty and staff FTE grew by approximately 33%.

Greenhouse gas emissions per FTE decreased by 23% since 2002. Students, staff and faculty are maximizing the use of space through efficient class scheduling and housing options, which may help to explain part of the reduction in GHG per FTE.

GHG by Scope

Scope 1 - direct GHG emissions from sources that are owned or controlled by the entity. Scope 1 can include emissions from fossil fuels burned on site, emissions from entity-owned or entity-leased vehicles, and other direct sources.

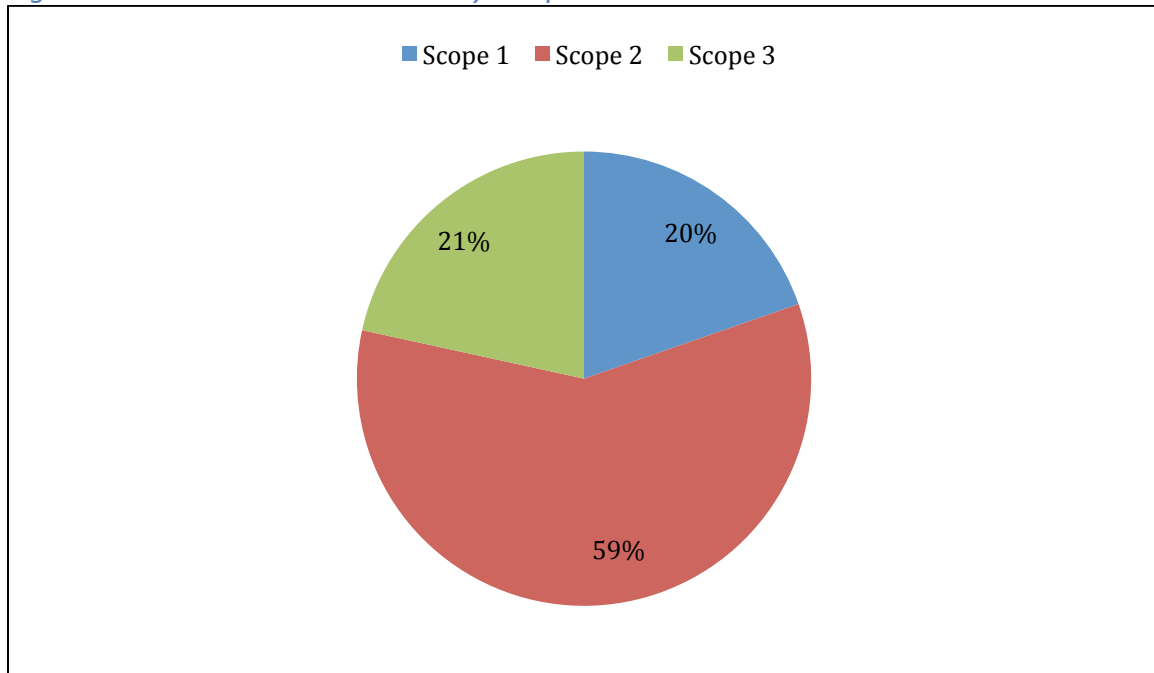
Scope 2 - indirect GHG emissions resulting from the generation of electricity, heating and cooling, or steam generated off site but purchased by the entity, and the transmission and distribution (T&D) losses associated with some purchased utilities (e.g., chilled water, steam, and high temperature hot water).

Scope 3 - indirect GHG emissions from sources not owned or directly controlled by the entity but related to the entity's activities. Scope 3 GHG emission sources currently required for federal GHG reporting include T&D losses associated with purchased electricity, employee travel and commuting, contracted solid waste disposal, and contracted wastewater treatment. Additional sources that are currently optional under federal reporting requirements, but are significant, include GHG emissions from

leased space, vendor supply chains, outsourced activities, and site remediation activities.

Source: United States Environmental Protection Agency

Figure 2. 2013 GHG Emissions by scope.



Conclusion

The University of Arkansas has increased energy efficiency while also reducing emissions since 2002. The construction of LEED buildings with high efficient heating and cooling systems and tighter building envelopes, coupled with energy savings performance contracts have resulted in a longitudinal decrease in emissions since the UA's benchmark year. A drastic increase in FTE populations resulted in denser classrooms, research labs and housing options. The concentration of the campus population also reduces GHG emissions per person. The UA is below their 2002 emissions levels and, with future strategic technological undertakings, will continue to decrease emissions per FTE and GSF, while simultaneously lowering gross GHG.