



**Office of
Sustainability**
Environmental
Impact Report
2015–2016



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

CONTENTS

- 04 Engagement
- 06 Academics
- 08 Energy & Emissions
- 10 Infrastructure
- 12 Waste Reduction
- 14 Looking Forward

The University of Tennessee has been widely recognized as a leader in resource conservation and environmental stewardship. In the 2015–16 academic year, UT made great progress toward reducing the environmental impact of campus operations.

**MAKE
ORANGE
GREEN**

The logo consists of the words 'MAKE', 'ORANGE', and 'GREEN' stacked vertically in a bold, white, sans-serif font. A small leaf icon is positioned above the letter 'A' in 'MAKE', and another leaf icon is positioned to the right of the letter 'N' in 'GREEN'.

Engagement

With more projects and initiatives in progress than ever before, UT faculty, staff, and students are making sustainability a priority on campus and in our communities.

INITIATIVES

CAMPUS SUSTAINABILITY DAY



350+ participants in 3 hours

Students enjoyed free food and interacted with local environmental organizations that set up on the HSS Amphitheater Lawn.

ARBOR DAY TREE PLANTING



70 volunteers
1,000 trees planted

Facilities Services, Stormwater Management, Landscape Services, Arboriculture, Recycling, and the Office of Sustainability collaborated to plant trees as part of the Second Creek Riparian Restoration Project. In preparation, invasive species along the banks of the creek were cleared and replaced with native tree species whose roots are more efficient in **stabilizing the banks and improving the water quality** of the creek.

COMPLETION OF STARS



The Office of Sustainability completed the STARS report in February. It's been five years since the last report was submitted. UT's 2015 rating is still pending, but a silver rating is expected.

UT STUDENT GREEN FEE



The "Green Fee," officially known as the Student Environmental Initiatives fee, is administered by the Student Environmental Initiatives Committee as a representative body of students, faculty, and staff. The mission of the committee is to identify, research, and recommend uses of funds to support campus environmental stewardship and sustainability initiatives and projects as well as clean and renewable energy technologies. Learn more at tiny.utk.edu/greenfee.

STUDENT RESEARCH DESIGN FUND IMPLEMENTED

This fund **provides \$40,000 over two years** for the **creation and implementation of student projects** to make campus more sustainable. Projects currently under way are providing experiential learning opportunities for the students involved, creating new data sets, and assisting us in establishing next-step scenarios.



BIKE RACK
AUDIT &
UPGRADE

Installed **85 new bike racks** in much-needed areas.



HVAC
FILTRATION
UPGRADE

Improved air quality, reduced energy use, and savings generated will create a **3-year payback** and **save \$10,000 per year** for the lifetime of the filtration unit (~15 years).



THERMAL
ENERGY
STORAGE
UNIT FOR
HODGES

Stores energy during off-peak hours and expends that energy during peak hours.

SENSING FOR SUSTAINABILITY



Two assistant professors proposed using Second Creek as a classroom education and research experience. The proposal required the purchasing of data collection equipment and a monitoring station to allow a better understanding of **water quality dynamics and pollutant presence in the stream**. After monitoring is complete, suggested actions to take will be proposed.

RESTRUCTURING REC PROGRAM

Each year the Green Fee pays for renewable energy credits to offset about 36 percent of the energy produced on campus. This purchasing program was reevaluated and now **offsets 100 percent of the campus's energy profile**—227,000 MWh—for a fraction of the allotted budget given for REC purchasing. This move also catapults UT into the **number one spot nationally as the largest consumer of green power in academia**.

Academics
UT students recognize sustainability is a rapidly growing interdisciplinary field with practical applications across virtually all sectors of the global workplace.

SUSTAINABILITY MAJOR

The **sustainability interdisciplinary major** started in 2012 and has rapidly grown in numbers each year. This year, fifty-three UT students selected sustainability as their major, though there are plenty of other majors and minors at UT that support sustainability learning and its widespread application to the post-collegiate workplace.

NEW MINORS AND CONCENTRATIONS

Sociology major BA, honors environmental issues concentration
Forestry major, restoration and conservation science concentration

CLASSES WITH A FOCUS ON SUSTAINABILITY

UNDERGRADUATE

63 + **121**
FOCUSED RELATED

— GRADUATE —

50 + **201**
FOCUSED RELATED

SPOTLIGHT ON INVOLVEMENT

COMMUTER STUDY



A student group from Professor Chris Cherry's Transportation Research class is researching data collection methods and execution of surveying the campus population on commuting. This study will enhance data collection methods and help determine the current state of transportation related to greenhouse gas emissions, as well as helping us plan for upcoming Climate Action Plan revisions.

POWER CHALLENGE

The POWER (Programs of Water, Energy, and Recycling) Challenge is a way for the UT community to demonstrate its commitment to reducing the university's environmental impact. The POWER Challenge is a monthlong competition that pits UT residence halls against each other in a battle to see which hall is the greenest.



Hess Hall won the competition by a landslide.



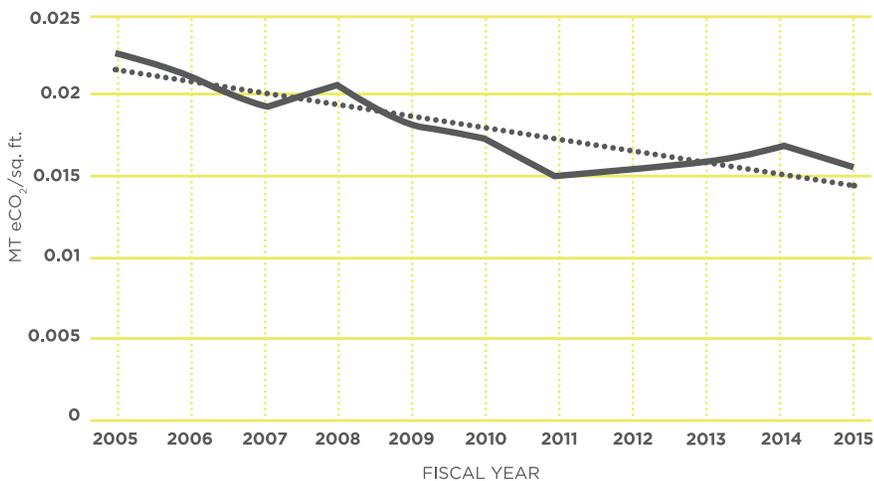
This project helped save the campus \$46,205.24 in 2015 by pushing students to reduce the amount of water and energy they use and recycling more.

GREENHOUSE GASES CHART

The table shows the progress made in reducing the campus's greenhouse gases (GHG) since 2005. Our GHG reports have become more detailed since 2008, and we now have a more complete view of commuting and air travel than in the past.

As seen below, the trend line is steadily declining, starting at .0227 metric tons of carbon dioxide equivalent per square foot and ending at .0156 metric tons. This data shows that our campus sustainability efforts are working, although there is plenty of room for improvement.

CHANGE OF METRIC TONS OF eCO₂/SQ. FT. OVER TIME



..... trend line
 — UT

Due to improved GHG reports, there may be some discrepancies. The square footage is total building square footage, not campus square footage.

Energy & Emissions

Reducing UT's greenhouse gas emissions footprint and our reliance on fossil fuels is at the heart of our efforts to become a more sustainable campus. It's also saving our campus millions of dollars each year.

Infrastructure

Integrating sustainable design into our buildings and landscaping saves money, reduces dependence on outdated technology, and creates a more environmentally friendly campus for us all.

CLAXTON RAIN GARDEN

The Claxton Rain Garden installation was completed during the fall semester. Encompassing a 3,500-square-foot space with approximately 2,150 native plants, the garden attracts wildlife and provides an artful display throughout the year. The installation was a collaborative effort by faculty and staff from all over campus and was funded by a Green Development Grant with matching funds from the Green Fee.



3,500-
square-
foot
space



2,150
native
plants

SUPPORTING ELECTRIC VEHICLES

The latest addition to the Eleventh Street Garage is a photovoltaic solar-powered charging station, bringing the total number of charging spots on campus to seventeen. The station can house five vehicles at a time, power an electrical vehicle in one hour, and feed power back in to the grid whenever it's not in use. A total of 30,000 kWh can be produced each year with this array.

It's also connected to the Power Electronics Lab in the Min H. Kao Building so students working with the Center for Ultra-Wide-Area Resilient Electric Energy Transmission Networks (CURENT) can use the array to inform the development of next-generation renewable energy grid technology.



Can
house 5
vehicles
at a time



Powers an electrical
vehicle in **one hour** and
feeds unused power back
in to the grid when not
in use.

RECYCLING TOTALS



In 2015, **2,453.55 tons of waste was diverted** from the landfill through compost, donations, and recycling. The campus's diversion rate is 26.8 percent.

ZERO WASTE GAME DAY TOTALS



During zero waste game days, **327,403 pounds of waste was diverted from the landfill**, with an **average game diversion rate of 66 percent**. The last game reached the highest diversion rate at 75 percent.

UT competed against 98 other schools in the national GameDay Recycling Challenge, taking **first in the nation for recycling totals**, **third for the highest recycling total in a single game**, and fourteenth for the waste diversion rate.

CAMPUS MAIL NOW ACCEPTS E-RECYCLING



To make recycling even easier, UT Recycling created the E-Recycling Mail Program, which allows faculty, staff, and students to mail small batteries, printer cartridges, and small electronics via campus mail. Find details at recycle.utk.edu/services.

RECYCLING DROP-OFF



A recycling drop-off at **2121 Stephenson Drive Dock 25** is open to the public. Anyone can recycle anything from plastic bottles and tin cans to electronics and styrofoam.

Waste Reduction

Our goal is to convert UT into a zero waste institution by diverting 90 percent or more of all waste from the landfill through reduction, reuse, recycling, and composting practices.

Looking Forward

Efforts to become a more environmentally conscious campus are never complete. We celebrate our achievements today as we look forward to doing more tomorrow.

WHAT TO EXPECT IN THE SUMMER OF 2016



Completion of the **Environmental Progress Report**



Update to the **Climate Action Plan** (Version 2.0)



Implementation of the **Sustainable Dining Task Force**



Office of Sustainability **website redesign**

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