

TEMPLE UNIVERSITY ANNUAL REPORT ON SUSTAINABILITY



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sustainability.temple.edu

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INTRODUCTION

In 2008, Temple University affirmed its commitment to sustainability by signing the American College and University Presidents' Climate Commitment. In 2010, Temple developed its Climate Action Plan outlining goals for achieving carbon neutrality over time. In 2012, Temple announced a bold new conservation campaign to drastically cut the amount of energy the university uses per square foot of building space by 25 percent over the next two years. This Energy Conservation Campaign will help advance the university's commitment to reduce greenhouse gas emissions.

This is the third Annual Report on Sustainability published by Temple University and reflects the status of Temple's

sustainability initiatives as of the end of Fiscal Year 2013. The report is divided into the three categories of the Climate Action Plan: greenhouse gas reduction, curriculum and research/community outreach.

Our Goals Include:

- 1. Reducing greenhouse gas emissions by 30% in 2030*
- 2. Integrating sustainability into the curriculum*
- 3. Expanding research and community outreach in climate change*



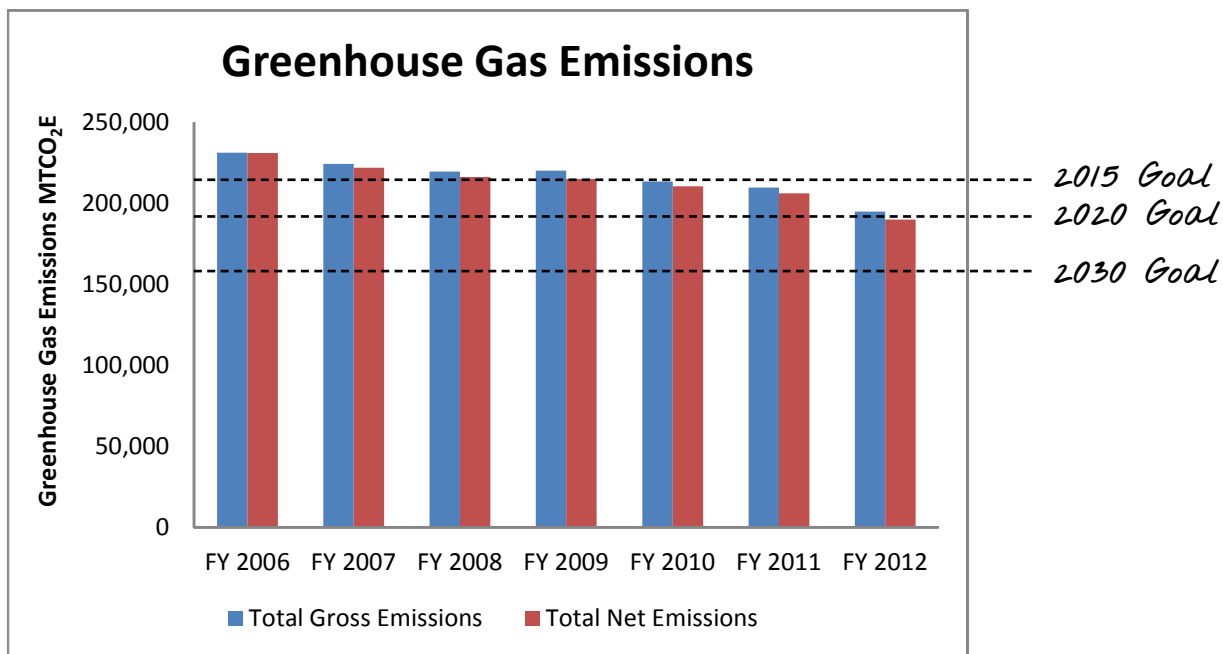
[Left to Right] Making the geodesic dome cool again at Ambler's EarthFest by using all recyclable or reusable materials; Temple celebrates Earth Hour and goes powerless for one hour while enjoying food, live acoustic music, and art; Temple's annual Campus Sustainability Day features student organizations, academic departments and sustainability related organizations from around the City of Philadelphia.

REDUCE GREENHOUSE GAS EMISSIONS

Temple’s long range Climate Action Plan recommends reducing greenhouse gas emissions by 30% in 2030, with interim reduction goals of 5% by 2015, 15% by 2020 and 22% by 2025. Greenhouse gas emissions are attributed to stationary sources (fuels that are burned on campus), purchased electricity, transportation, solid waste and other small contributors (refrigerants, fertilizers, purchased steam and transmission and distribution losses).

Temple measures its greenhouse gas emissions annually, with FY 2006 as the base year from which the university will reduce its emissions. Between FY 2006 and FY 2012, greenhouse gas gross emissions have decreased by 14% from 226,219 metric tons carbon dioxide

equivalent (MTCO₂E) to 195,033 MTCO₂E. This decrease occurred while the gross square footage (GSF) increased by 12% or 979,357 GSF and the student full-time equivalent (FTE) has increased by 18% or 4,884 FTE students. The FY 2012 greenhouse gas inventory showed that the majority of Temple’s greenhouse gas emissions were derived from buildings (stationary sources and electricity). While building emissions decreased slightly from FY 2011 to FY 2012, implementing energy conservation measures and improving building energy efficiency continue to be critical steps in reaching the university’s reduction goals for greenhouse gas emissions. Other greenhouse gas reduction goals include transportation, waste minimization and recycling and behavior change initiatives.



Temple already surpassed its 2015 interim GHG reduction goal.



BUILDINGS & ENERGY

Buildings account for 72% of Temple's greenhouse gas emissions. Initiatives undertaken in FY 2013 to reduce emissions from Temple's buildings include the following:

- Launch of the Energy Conservation Campaign with the goal of reducing energy consumption by 25% in two years;
- Development of a Utility Master Plan, which includes a plan that identifies energy conservation strategies and develops large scale efficiency projects;
- Training of energy teams who conduct building energy audits and promote energy conservation at Temple;
- Energy efficient lighting upgrades to Anderson Hall, Gladfelter Hall and Boyer Dance Studio and piloting of Big E replacement bulbs;
- Piloting of BERT Smarts Plugs in Alter and Sullivan Halls;
- Launch of the Step Up program at the Liacouras Center to make its facilities more environmentally friendly;
- Installation of four Solar Power-Dok picnic tables on Main Campus which provide self-sustaining lighting and electricity and are made from recycled materials; and,
- Installation of 12 EcoMills in the new fitness at Pearson-McGonigle Hall. The cardio equipment produces energy from an individual's workout.



[Left to Right] Clayton Blunk is conducting an energy audit at the Bio-Life Building as part of Temple's Energy Conservation Campaign; One of four solar-powered tables installed on campus before the start of the fall semester; Cardio equipment at the Pearson-McGonigle Hall fitness center creates energy from use.



TRANSPORTATION

Transportation accounts for 17% of Temple's greenhouse gas emissions. FY 2013 initiatives aimed at decreasing the greenhouse gas emissions associated with transportation include:

- Promotion of Bike Temple events which included 14 Urban Riding Basics classes, a Bike to Breakfast event, social rides, sponsoring of the Bike Works at Temple Contemporary, sponsoring of the "Women Bike PHL: Feminism and Biking" talk and social ride, hosting of the Criterium (short course collegiate race) and participation in the Greater Philadelphia Bicycling Coalition summer commuter challenge where Temple won 1st place for most logged miles in Philadelphia;
- Addition of electric car charging stations at J&H, and the location of two Chevy Volts available for use via the Enterprise Car Share program;
- Continued marketing of the Wage Works program which permits full time employees to purchase public transit with pre-tax dollars. Participation increased from 877 in FY 2012 to 958 in FY 2013;
- Launch of the Transportation Survey to track Temple's commuting habits;
- Partnering with ZipCar to offer more car sharing opportunities on campus; and,
- Partnering with Student Activities, Campus Safety and Housing to promote SEPTA and bike safety during National Campus Safety Awareness Month.



[Left to Right] Hooter shows off the hybrid-electric vehicle at J&H; Temple provides bike racks to meet the needs of the cycling community.

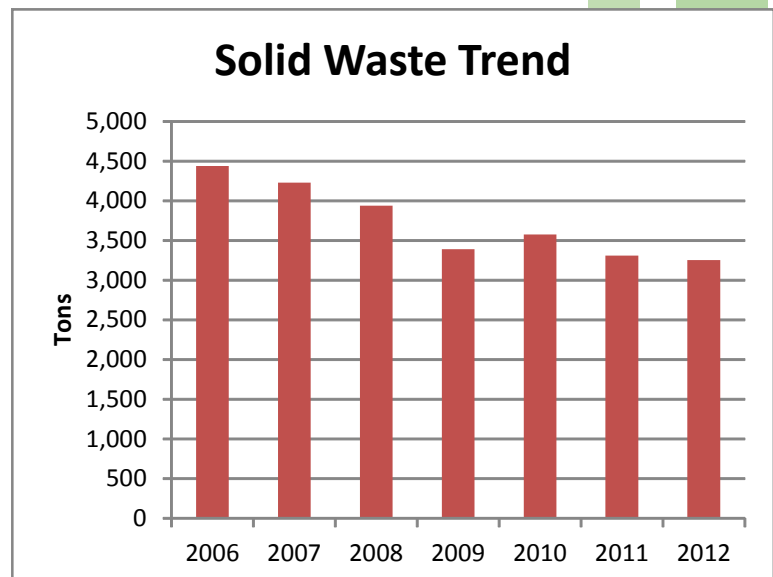


WASTE MINIMIZATION

Solid waste contributes only a small fraction to Temple's greenhouse gas emissions, however, waste minimization and recycling initiatives are important components in mobilizing the Temple community to a more sustainable life style. FY 2013 waste minimization activities included:

- Hosting of the PA/NJ Sustainability Symposium - Temple's first zero-waste event;
- Installation of three additional water bottle refilling stations to reduce the number of single use bottles. Since the program's inception in FY 2011, Temple has avoided sending 2.7 million single use bottles to the landfill;
- Continuation of the Give + Go Green initiative in the residence halls which produced approximately 5,000 pounds of goods donated to local charities and more than 27,000 pounds of recyclable materials sent to Revolution Recovery;
- Introduction of the Music Swap Table through the Boyer College of Music which makes available lightly used sheet music provided by students, staff and faculty;
- Introduction of the ShoeBox Recycling fundraising program which helped fund Green Council initiatives and provided gently used shoes to others around the world; and,
- Donation of surplus clinical equipment, such as dentist chairs and medical case-work, from the Old Medical School.

In 2013, Temple donated over 100,000 pounds of goods to charitable organizations.



[Left to Right] Boyer College of Music promoted waste minimization by swapping lightly used sheet music; Success in waste minimization efforts on campus is reflected in reduced waste amounts.



RECYCLING

Temple University had a recycling rate of 35% in FY 2012 and is getting closer to its goal of increasing the university's recycling rate to 40% by 2015. Recycling initiatives in FY 2013 included the following:

- Initiation of a single stream recycling program at Temple University Center City which offers recycling of glass, aluminum, paper, cardboard and plastics #1-7 all in the same container;
 - Continued recycling of construction waste materials;
 - Participation in America Recycles Day
- which promotes awareness of the recycling and waste minimization efforts on Temple's Main Campus;
- Continuation of the recycling program for used computers and electronics; and,
 - Continuation of the graduation gown donation program at the May 2013 graduation, giving graduates the opportunity to donate their regalia (made from 100% post consumer plastic) to future graduates. Over 100 previously donated gowns were made available to 2013 graduates and Alumni Relations sponsored an event to encourage gown donations.





BEHAVIOR CHANGE

Programs implemented in FY 2013 to promote a green culture and environmental literacy included the following initiatives:

- Energy Conservation Pledge where 1,869 students, staff and faculty committed to reduce energy consumption both on and off campus by Earth Day 2013;
- Potlucks with a Purpose discussion series, hosted by The Green Council, provided casual, free dinners and platform for discussion about sustainability issues between students and professors while indulging in homemade food;
- Social media campaigns via Twitter, Facebook and Pinterest aimed at increasing sustainability awareness;
- Energy Conservation Awareness basketball game aimed at spreading the word about Temple's Energy Conservation Campaign;
- Free CFL light bulb campus giveaways to encourage the Temple community to reduce their energy consumption;
- Energy conservation behavior changes implemented at Fox including the piloting of smart power strips which reduce energy usage by shutting down power to products that go into standby mode and the desk lamp incentive program which encouraged staff to use less lighting wattage in their offices; and,
- Partnership with the Workers' Rights Consortium, a nonprofit labor organization that reviews and issues reports on factories around the world that produce licensed goods for colleges and universities.



INTEGRATE SUSTAINABILITY INTO THE CURRICULUM

An important element in Temple's Climate Action Plan is to promote broad sustainability efforts through academic programs that prepare students for leadership in this area. Advances in integrating sustainability into the curriculum during FY 2013 include:

- Offering a total of 179 courses identified as "sustainable", which span 28 departments;
- Expansion of the Sustainability Living and Learning Community programming to include an extended Welcome Week program focused on sustainability;
- Integration of sustainability into non-traditional disciplines, such as the Graphic and Interactive Design (GAID) poster design competition to support Temple's Energy Conservation Campaign message;
- Introduction of community-based learning and service projects into academic courses, including the School of Environmental Design's Green vs. Grey Urban Ecology;
- Development of two curriculum pieces for the Fox Business and Ethics class in which students explore whether Temple should install solar or composting on campus;
- Creation of a community based learning opportunity for the Fox Sustainable Marketing class through which students designed and implemented a marketing campaign for the PA/NJ Sustainability Symposium and the Women Bike PHL campaign;
- Expansion of a partnership with Lutron to allow Architecture/Engineering students to attend the Experience Center in DC and the Light Fair, while also adding Career Center internship opportunities;
- Enlisting the Advertising Research Methods course to conduct a survey of attitudes about energy conservation;
- Consultations from the Environmental Studies Senior Seminar course to develop recommendations for a sustainable landscape plan for campus (fall) and expanded recycling outreach (spring); and,
- Coordination of a greening project at Ambler Campus for the Classics Department. Students learned the latin names of plants while removing invasive species.



[Left to Right] The winning design from GAID's Energy Conservation Campaign's poster competition; The Classics Department helps remove invasive English ivy in Temple University Ambler's Woodland Garden.

RESEARCH AND COMMUNITY OUTREACH

RESEARCH

Temple continues to expand its sustainability research. FY 2013 highlights in the advancement of sustainable research include:

- Fifty-two faculty currently engaged in funded sustainability research;
- Funding of undergraduate student sustainability related projects through CARAS (Creative Arts, Research and Scholarship). One FY 2013 project partially funded by the Office of Sustainability included the installation of crop netting over an expanse of window to determine its effectiveness at reducing bird strikes;
- Continuation of Paley's Library Prize for Undergraduate Research on Sustainability

and the Environment. The winning project, submitted by Biology student Andrea Gudiel, researched the deforestation and the spread of non-native species;

- Funding of sustainability research through external awards, including a Department of Energy fellowship awarded to student Eric Hunter for his dark matter research that began in the lab of Physics Professor C. J. Martoff; and,
- US EPA research grant awarded to the Center for Sustainable Communities to develop a stormwater management plan for three urban watersheds that drain the Borough of Ambler and Whitpain and Upper Dublin Townships in southeastern Pennsylvania.



[Left to Right] Bird netting installed at Beury as part of CARAS grant recipient Alexis Kessler's research project; Many Temple departments encourage research in sustainability related issues.



OUTREACH

The Office of Sustainability continues to expand the breadth of its partnerships to collaborate on a variety of community outreach efforts aimed at engaging students, faculty, staff and neighbors. Outreach activities in FY 2013 include:

- Representing Temple University in the Greater Philadelphia sustainability community by serving on the Philadelphia Zoo's jury for the "Unless" competition, the Greenbuild volunteer committee, the Mayor's consortium of sustainability in higher education, and the Sustainability Director's Roundtable;
- Teaching a class on green technology through Temple's PASCEP program;
- Presenting at the national AASHE conference on the Sustainability LLC;
- Hosting the regional Waste Management conference for institutions of higher education;
- Sponsoring and hosting the LEED training for internal staff;
- Partnering with HR and the ECA to host EnergyWorks workshops for the Temple community;
- Coordinating and participating in service projects, such as Cobbs Creek Cleanup, Little Tinicum Island coastal cleanup, Penrose Playground cleanup and work day at the Philadelphia Urban Creators' Urban Farm;
- Hosting of the PA/NJ Sustainability Symposium which brings together industry, education and community leaders to share best practices, ask challenging questions and provide cutting edge information about sustainability in the Delaware Valley;
- Hosting Campus Sustainability Week in the fall and spring semesters, which included a green fair, lectures, demonstrations and workshops on sustainability topics in each school or college;
- Arranging field trips to sustainability related facilities in the Philadelphia region for the Temple community, including visiting the Waste Management composting facility in Wilmington, Delaware, the MRF Recycling Center in northeast Philadelphia and Lincoln Financial Field; and,
- Hosting one of the largest educational celebrations of Earth Day each year at the Ambler campus, with annual attendance in 2013 of 7,000.



Sponsored by the Food Trust and Temple University Office of Community Relations, the Temple Farmers' Market sells seasonal fresh, local fruits and vegetables, and more every Thursday afternoon through mid-November

AWARDS

Faculty, students and staff have received national awards on their sustainability efforts. Recognition of the Temple community's efforts on sustainability in FY 2013 include:

- GCA Higher Education Grand Award: Temple University Health Sciences Center received the Green Cleaning Award Grand Award for its use of Electrically Activated Water (EAW) and other non-chemical sources to create the most environmentally responsible approach to cleaning;
- Anthony Buscaino, a graduating senior in the School of Environmental Design,

was awarded a Landscape Architecture and Horticulture Faculty Award for his academic achievements, including his work with the Horticultural Society of New York's "GreenHouse" program, an initiative dedicated to reducing the rate that inmates return to criminal activity; and,

- The newly renovated Backup Data Center won the "Less Watts" Award from the Delaware Valley Leibert Group, Inc. for data centers between 1,000 and 5,000 sq. ft. Computer Services replaced nine computer room air conditioning (CRAC) units that were thirty years old with six new units to reduce energy consumption.

Temple University is listed in the Princeton Review as one of its top 322 Green Colleges.

GREEN CLEANING AWARD FOR SCHOOLS & UNIVERSITIES

GRAND AWARD
TEMPLE UNIVERSITY HSC



[Left to Right] Temple University Health Sciences Center wins the GCA Grand Award for its green cleaning practices; Anthony Buscaino wins a department award for his work with the Horticultural Society of New York's "GreenHouse" program.