

American University

Carbon Neutral by 2020



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GREEN

About this Report

This report is the product of American University's Climate Action Project Team. It was published on May 15, 2010 in accordance with the deadline mandated by the university's pledge to the American College and University Presidents' Climate Commitment. The report is available from the university's Office of Sustainability and online at www.american.edu/sustainability.

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Executive Summary

American University is committed to acting on our values through social responsibility, service and an active pursuit of sustainability. This Climate Action Plan outlines our path to neutralizing the university's greenhouse gas emissions (GHGs) by 2020 and fulfilling American University president Dr. Neil Kerwin's pledge to the American College and University Presidents' Climate Commitment.

Since 2008, the university has taken tangible actions; conducted greenhouse gas inventories (61,321 MTCO₂e FY 2009); convened a Climate Action Project Team; adopted sustainability and climate-related policies addressing green building, sustainable purchasing and zero waste; and developed this plan for achieving net-zero greenhouse gas emissions, i.e. "carbon neutrality," by no later than the year 2020.

The university plans to employ four strategies to achieve neutrality, with twelve related goals:

A. Reduce Consumption

1. Reduce electricity consumption by at least 1% annually, relative to 2007
2. Reduce transportation emissions
3. Eliminate emissions from paper
4. Eliminate emissions from waste
5. Eliminate emissions from agricultural inputs

B. Produce Renewable Energy

6. Produce maximum viable solar energy
7. Produce maximum viable energy from waste
8. Produce maximum viable wind energy

C. Buy Green Power

9. Buy renewable energy credits (RECs) for 100 percent of electricity
10. Buy grid-delivered green power for 100 percent of electricity consumption

D. Buy/Develop Offsets

11. Buy offsets for travel and other unavoidable emissions
12. Develop offset projects for travel and other unavoidable emissions

Numerous efforts are already underway to include climate change in cocurricular, education, research, and outreach activities, including: courses, degrees, clubs, and events. The Climate Action Project Team anticipates working with campus life and academic leaders to develop a robust strategy for tracking and encouraging climate change educational activities on campus and in the community.

This plan outlines a cost-neutral path to carbon neutrality. Emissions-reducing energy efficiency activities tend to produce cost savings with payback periods between 1 to 6 years. On-campus renewable energy projects also produce savings, and payback between 1 to 15 years. Purchasing green power through long-term contracts from regional renewable energy projects is expected to be cost competitive compared to rising projected conventional energy costs. Offsets are the only strategy expected to produce modest net-new expenses, in the range of \$150,000 per year in the first few years. This expense, however, should be more than balanced by the cost savings resulting from reduced energy consumption.

Progress toward carbon neutrality will be tracked and published in annual emissions inventories; an annual sustainability report; and via the Sustainability Tracking, Assessment, and Reporting System.

I. Background and Introduction

American University is committed to acting on our values through social responsibility, service and an active pursuit of sustainability. This Climate Action Plan outlines our path to neutralizing the university’s greenhouse gas emissions (GHGs), and demonstrating leadership and innovation in addressing the serious social, economic, and environmental issues associated with global warming.

In April 2008, American University (AU) president Dr. Neil Kerwin signed the American College and University Presidents’ Climate Commitment (ACUPCC), pledging to take action to address climate change. Table 1 summarizes American University’s activities undertaken to fulfill the ACUPCC pledge.

ACUPCC Requirement	Timeline				
	15 May 2008	15 July 2008	15 May 2009	15 May 2010	2015 & Ongoing
Sign the APUPCC—April 18, 2008	→				
Formalize Inst. Structure (Climate Project Team)		→			
Establish 2 of 7 Tangible Actions			→		
Implement the Selected Tangible Actions				→	
Complete Greenhouse Gas Inventory				→	
Annual Reporting of GHGI					→
Deliver Climate Action Plan (CAP)				→	
Execute CAP					→
Monitor and Evaluate Progress (biannually)					→
Transparency: Make Progress Publicly Available					→
Achieve Carbon Neutrality					→
Maintain Carbon Neutrality over time					→

Table 1: ACUPCC Deliverables and Due Dates

A. Tangible Actions

The ACUPCC requires signatories to implement at least two of seven recommended Tangible Actions within two years of signing the commitment. AU has implemented the following five Tangible Actions:

- ☑ Adopted a Green Building Policy
- ☑ Adopted a Sustainable Purchasing Policy, requiring purchasing of Energy Star products
- ☑ Encouraged public transit by providing a free shuttle bus between the Tenley Metro station, Tenley Campus, Washington College of Law, and Main Campus
- ☑ Sourced at least 15 percent of electricity from renewable sources by purchasing Renewable Energy Credits equivalent to 100 percent of the university’s expected electricity consumption for CY 2010-2012
- ☑ Participated in the Waste Minimization component of the national RecycleMania competition, and adopted three or more associated measures to reduce waste, including: 1) campus recycling program, 2) composting of yard waste and dining hall food waste, 3) surplus exchange and repurposing system for electronic waste and furniture, and many other measures which will be included in a Zero Waste Plan to be published by the end of 2010

This Climate Action Plan outlines the steps AU plans to take to completely neutralize greenhouse gas emissions and will be reviewed and updated biannually to reflect new activities, technologies, and progress toward neutrality.

B. Greenhouse Gas Emissions Inventory

The university's emissions are inventoried from 2005 to 2009, totaling 61,321 metric tons of CO₂ equivalents (MT CO₂e) in FY 2009. Based on these historical emissions, the university's emissions trajectory is expected to rise slightly in a "business as usual" scenario. The emissions are analyzed in greater detail in the Emissions Inventory section of this plan. The full inventory is available online at <http://www.american.edu/finance/sustainability/ACUPCC.cfm>.

C. Climate Action Planning

The Climate Action Project Team was established in April 2009, including faculty, staff, and student representatives charged with developing and implementing a climate action plan. The team convened monthly from that time until the publication of this plan in May 2010. (See **Error! Reference source not found.**)

D. Transformational Goals

The university's strategic vision is outlined in *Leadership for a Changing World: American University and the Next Decade*. This document contains 10 transformational goals. The climate team grouped these goals into three sets of transformational goals for carbon-neutrality planning. The phrases appearing below in bold are goals drawn directly from the strategic vision.

1. Leadership and Innovation

The university will demonstrate leadership and innovation by encouraging **innovation and high performance**, and winning **recognition and distinction**. Examples of innovation and high performance in this plan include:

- ▶ designing an experimental vertical-axis wind turbine (design created by an AU adjunct faculty member)
- ▶ piloting Leadership in Energy and Environmental Design (LEED) Portfolio Volume Certification with the US Green Building Council to develop a streamlined approach to constructing and maintaining green buildings in a campus setting
- ▶ registering as a Charter Participant in the Sustainability Rating, Assessment, and Tracking System (STARS) and hosting the national launch of STARS
- ▶ piloting the Sustainable Sites Initiative on the new SIS building landscape

Leadership will be measured, in part, by earning recognition for climate change efforts in STARS, LEED, and the Environmental Protection Agency's Climate Leaders program.

2. Global Diversity

The university's climate efforts will **reflect and value diversity** by, for example, engaging minority communities locally and globally in university-related offset projects. The climate plan will **bring the world to AU and AU to the world** by, for example, implementing carbon offset projects with partners abroad as well as within the Washington, D.C., region.

3. Education and Research

AU faculty members strive to **epitomize the scholar-teacher ideal** by studying climate change side by side with students. In 2009, an envoy of six students accompanied a faculty member to Copenhagen to participate in the climate change treaty dialogue.

Sustainability curriculum and research are being catalogued in order to identify areas of strength and opportunities for enhancing sustainability course offerings and connecting faculty sustainability interests with student interests and campus sustainability projects.

The university is striving to **demonstrate distinction in graduate and legal studies**. The Washington College of Law offers one of the most robust programs of international and comparative environmental law in the country. The university strives to **engage the great ideas and issues of our time through research, centers, and institutes**. The Center for Environmental Filmmaking hosts an on-campus Environmental Film Series and sponsors an Environmental Short contest in conjunction with the DC Environmental Film Festival.

E. Mitigation Strategies

With these goals in mind, the team developed four strategies for mitigating greenhouse gas emissions, understanding that all four strategies would be necessary to reach neutrality. In rank order, the strategies are as follows:

- 1) Reduce consumption
- 2) Produce renewable energy
- 3) Purchase green power
- 4) Purchase and develop offsets

F. Strategic Goals

Using these four strategies, this plan outlines 12 specific goals for attaining carbon neutrality:

<u>Strategies</u>	<u>Goals</u> (listed in order of appearance in this plan)	<u>Deadline</u>
A. Reduce Consumption		
	1. Reduce electricity consumption by a minimum average of 1 percent relative to 2007 baseline.	Annual
	2. Reduce transportation emissions.	Annual
	3. Eliminate emissions from paper.	2013
	4. Eliminate emissions from waste.	2013
	5. Eliminate emissions from agricultural inputs.	2014
B. Produce Renewable Energy		
	6. Produce maximum viable solar energy.	2015
	7. Produce maximum viable energy from waste.	2015
	8. Produce maximum viable wind energy.	2015
C. Buy Green Power		
	9. Buy renewable energy credits (RECs) for 100 percent of electricity.	2010
	10. Buy regional green power for 100 percent of electricity consumption.	2014
D. Buy/Develop Offsets		
	11. Buy offsets for travel and other unavoidable emissions.	2012
	12. Develop offset projects for travel and other unavoidable emissions.	2020

G. Policies

The team developed the following institutional policies designed to mandate and guide these mitigations:

- ▶ green building,
- ▶ sustainable purchasing
- ▶ zero waste

Each policy created a working group charged with developing and implementing plans to fulfill the policy.

1. Green Building Policy

The [Green Building Policy](#) mandates that new construction, major renovations, and operations and maintenance conform to LEED Silver standards or better.

In late 2009, the university began pursuing LEED certification for 31 buildings—one new building and 30 existing buildings. Together, these represent 68 percent of campus building square footage. The new School of International Service building is designed to achieve LEED Gold certification. Thirty existing buildings are part of the LEED Volume Certification program, a national pilot project of the US Green Building Council designed to test strategies for streamlining LEED certification on campuses. USGBC expects to incorporate the results of AU’s pilot into the design of a new certification protocol catering to campus environments.

2. Sustainable Purchasing Policy

The [Sustainable Purchasing Policy](#) mandates the creation of a cross-campus team tasked with developing sustainable purchasing guidelines for a wide range of products, including emissions-reducing products, such as those rated to ENERGY STAR standards.

3. Zero Waste Policy

The [Zero Waste Policy](#) establishes waste reduction and diversion benchmarks, with a long-term goal of achieving zero waste. By the end of 2010, the university will publish a plan outlining our strategies for achieving this goal. Based on the 2009 GHG inventory, waste reduction can reduce total campus emissions by about 1 percent.

H. Carbon Neutrality by 2020

Recognizing the need to rapidly reduce global greenhouse gas emissions in order to avert the worst impacts of global warming, this plan establishes the year 2020 as the university’s target date for achieving carbon neutrality. This date is intentionally ambitious and reflects a desire to encourage innovation and demonstrate extraordinary leadership in addressing one of the great issues of our time.

Reducing energy consumption and producing renewable energy are the two best long-term strategies for addressing climate change. However, the university acknowledges that achieving neutrality requires utilizing every strategy available and recommended by the ACUPCC, including the purchase of green power and carbon offsets. In order to take full responsibility for emissions and reach neutrality by 2020, this plan outlines mitigation activities that include working vigorously to reduce consumption, maximizing on-site renewable energy production, investing in local and regional renewable energy projects, and purchasing and developing renewable energy and carbon offsets.

II. Emissions Inventory

Identifying emissions sources was critical in determining appropriate mitigation strategies. Half of the emissions are produced by electricity consumption. The next largest source is travel, including commuting, study abroad, and university-financed business travel, which together produce just over one third of the emissions. The remaining emissions are produced by on-site combustion of natural gas, the campus vehicle fleet, purchasing and waste, and small amounts from agriculture and refrigerants.

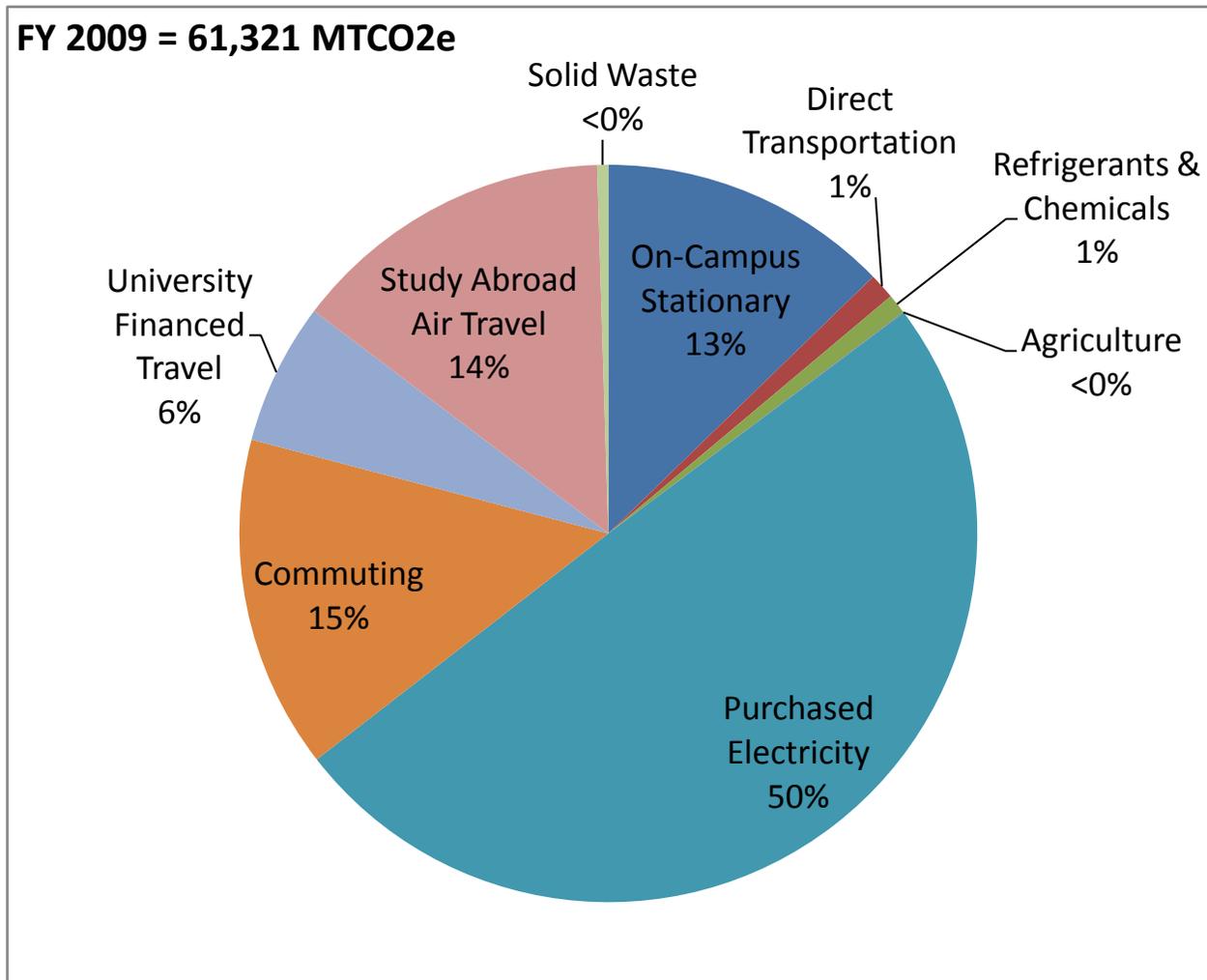


Figure 1: Emissions by source FY 2009. The university's GHG emissions inventories for the years 2005–2009 were qualified by SightLines Inc.

Emissions from electricity will be mitigated through a combination of reducing consumption, producing renewable energy, purchasing renewable energy credits (through 2012), and buying 100 percent renewable energy directly from regional projects (coming online in successive years 2011–2013). Emissions from travel will be mitigated through a combination of transportation alternatives, such as

public transit and ridesharing. Remaining unavoidable emissions will be mitigated through the purchase and development of high-quality carbon offsets.

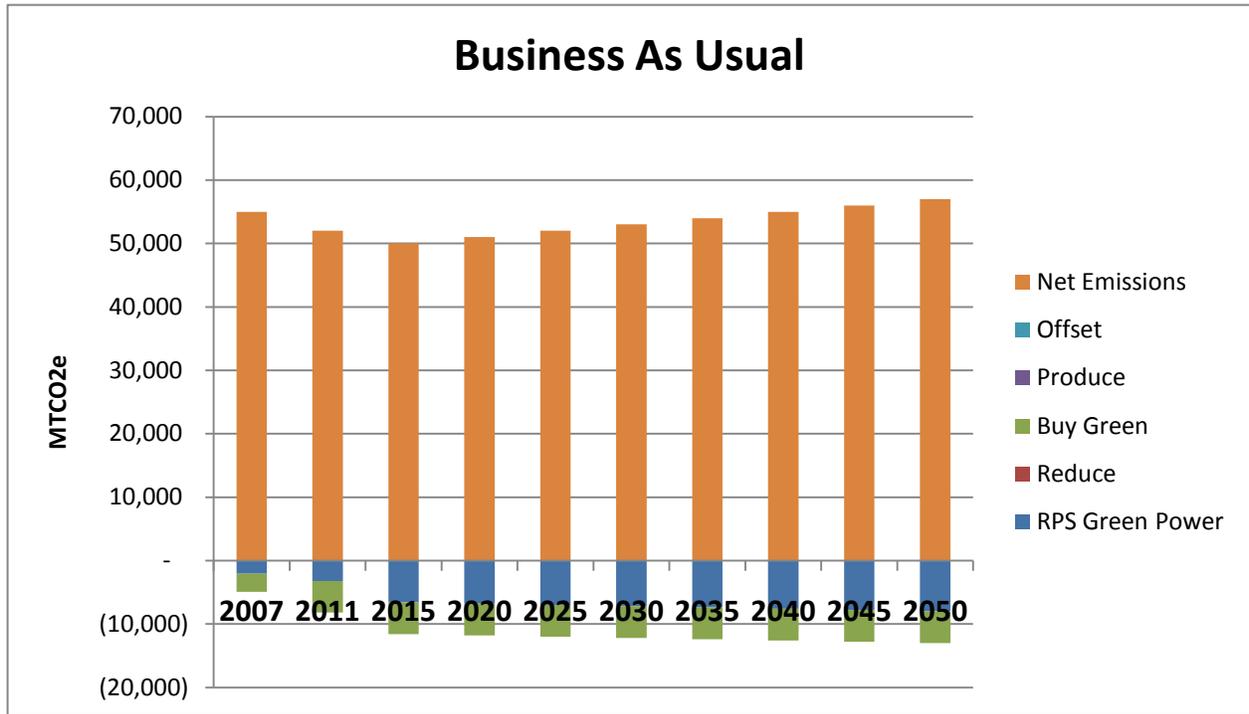


Figure 2; Business-as-usual emissions scenario

Based on historical trends, the university would expect a moderate increase in emissions into the indefinite future even when accounting for an increase in the District of Columbia’s renewables portfolio standard (RPS) to 20 percent in 2020.

III. Mitigation Strategies

AU will use four strategies to achieve carbon neutrality: 1) reduce consumption, 2) produce renewable energy, 3) buy green power, and 4) buy/develop offsets.

A. Strategy: Reduce Consumption

The team established five goals for emissions source reductions:

Goals:

1. Reduce electricity consumption by at least 1 percent annually, on average, relative to 2007.
2. Reduce transportation emissions annually.
3. Eliminate emissions from paper by 2012.
4. Eliminate emissions from waste by 2013.
5. Eliminate emissions from agricultural inputs by 2014.

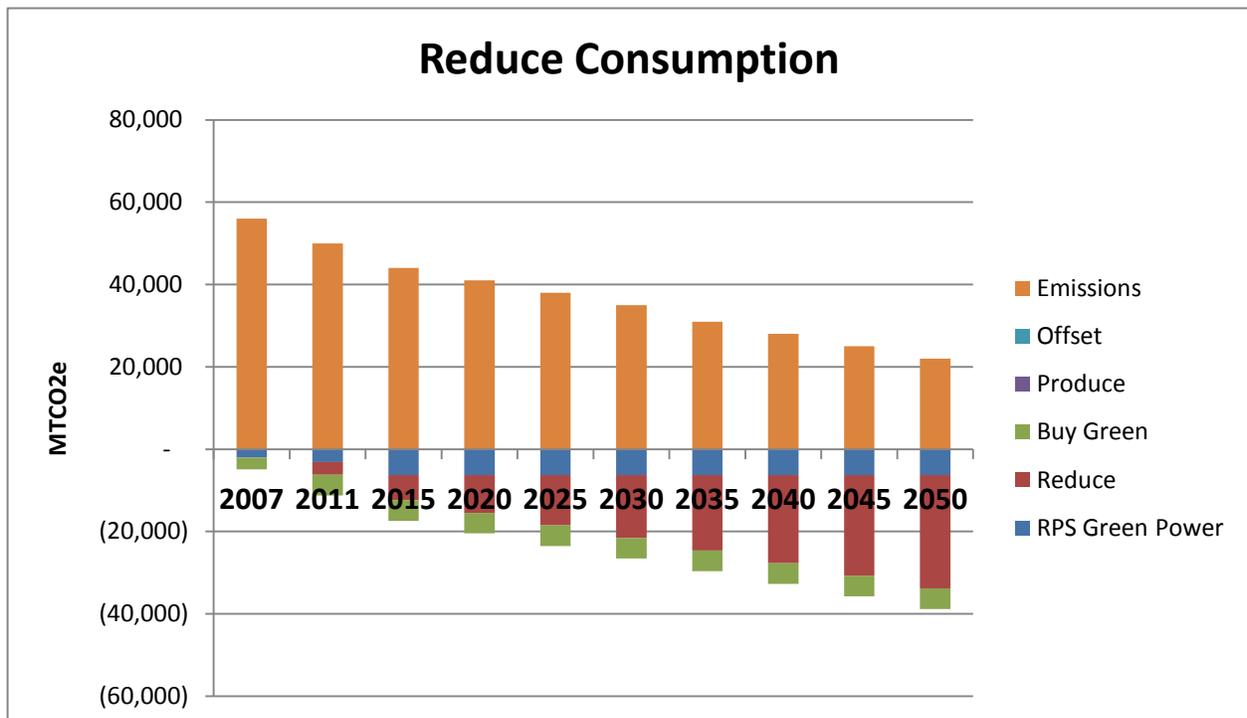


Figure 3; Emissions projection reflecting an average of 1 percent annual energy consumption reduction, based on a 2007 baseline

1. Goal One: Reduce Electricity Consumption by 1 Percent Annually

The Energy Management Team will complete installation of building-level utility metering in order to benchmark building energy consumption using the Energy Star portfolio manager. Based on Energy Star scores, the team will prioritize the most cost-effective projects with the greatest potential for reducing consumption.

Tactics:

a) Geothermal

The first phase of a geothermal feasibility study was completed in January 2010. The results show potential for the use of geothermal energy production on campus, installed during new construction and reconstruction projects which would, altogether, reduce emissions by between 30 to 50 percent per project compared to existing or conventional systems.

b) Greener IT

The Green IT working group began convening monthly in March 2010 and has developed an initial list of climate and sustainability project ideas for consideration, including:

- ▶ migrating to virtual servers
- ▶ centralizing proactive power management for some AU workstations
- ▶ determining the best combination of value and energy efficiency in defining standard endpoint configurations
- ▶ assisting AU's fax user community in evolving to centralized electronic fax capabilities
- ▶ specifying EPEAT certified computers
- ▶ providing optimal resource allocation and efficiency in printer standards and agreements, including default duplex printing settings
- ▶ providing information to end users on green IT concepts, principles, and initiatives
- ▶ improving monitor life cycle and inventory management



A green roof on the Media Production Center improves insulation, minimizes stormwater runoff, and reduces the heat-island effect.

c) Green Roofs

Initial feasibility analysis shows potential for up to 170,000 square feet of green roofing, representing 28 percent of total campus roof space. The Media Production Center currently has 8,600 square feet of green roof and the Katzen parking garage is partially covered by green roofing.

d) LED Lighting

The SIS parking garage features solid state light-emitting diode (LED) lighting technology which, due to its energy efficiency, is expected to avoid 635,000 MTCO₂e annually compared to a comparable halogen lighting installation. Eleven LED street and pathway lamps have been installed and one off-campus building, 3201 New Mexico, is testing indoor LED spotlights. Feasibility studies will evaluate the applicability of LED lighting in other campus parking garages as well as in other indoor and outdoor applications. A case study of the university's deployment of LED lighting is available online at: http://www.american.edu/finance/sustainability/upload/AU_LEDLights_CaseStudy_-2-19-10.pdf.

e) Light Switch Signs

Put "turn off the lights" stickers by light switches.

f) Microwave/Refrigerator

The university offers students leased combination microwave-refrigerator units that reduce electricity consumption by alternating power between the refrigerator and microwave such that only one component of the combination unit operates at a time. A review of compliance with this lease option is needed in order to eliminate unpermitted energy-consuming appliances in residence halls.

g) Motion and Light Sensors

Motion-detecting light sensors are already deployed in many campus locations. Their effectiveness will be reviewed and new opportunities for applying the best-performing technologies will be considered for other buildings.

h) Passive Solar

The new SIS building utilizes a passive solar design for pre-heating air and also utilizes solar sun screens to prevent heat gain during the summer and maximize heat gain during the winter. Retrofit applications of this and other passive solar technologies will be considered.

i) Power Strips

Install power strips in offices.

j) Shower Signage

Apply signage in residence hall shower facilities encouraging conservation.

k) Solar Hot Water

A feasibility study is under way to identify opportunities for installing solar water pre-heating systems. Residence halls are likely to hold the most potential for application of this technology.



Capped LED lamps save energy and prevent light pollution.

Initial assessment shows potential for up to 24 systems. Costs and savings were still being projected at the time this plan was finalized.

l) Steam Turbine

An energy cogenerating steam turbine is being installed in 2010 that will convert waste steam into electricity, reducing AU's total emissions by nearly 1 percent annually.

m) Sustainable Purchasing

Procurement of energy-efficient goods, such as appliances and electronics, will reduce emissions from electricity. The university preferentially purchases products qualified to Energy Star standards whenever the products are available and reasonably meet the needs of users. Energy Star rated products are available in over 70 product categories, including appliances, commercial food service equipment, heating and cooling systems, lighting, office equipment, and water heaters.

Paper procurement is addressed in Goal Three. Food emissions are not currently included in the carbon inventory but this source of emissions is also being addressed through the LEED pilot project, in which AU's food purchasing is being measured according to sustainability certifications and production proximity.



The new School of International Service is designed to achieve LEED Gold. The atrium provides natural light throughout the building, reducing the need for artificial lighting.

n) Windows

Most campus windows are already highly energy efficient, but a review will be conducted to identify new opportunities for replacements and new technology applications such as energy-saving window-lining films.

2. Goal Two: Reduce Transportation Emissions Annually

Transportation emissions are produced from several distinct sources: business travel, campus vehicle fleet, commuting, and study abroad. While certain tactics hold promise for reducing emissions from these sources, the overall potential for reducing business travel, commuting, and study abroad travel is quite limited, especially in the short term, and these sources are expected to produce unavoidable emissions well into the future.

Air travel produces about 20 percent of the university's GHG emissions, commuting produces 15 percent, and the campus fleet accounts for 1 percent of the total campus emissions. The airline industry¹, through the International Air Transport Association, has committed to improve fuel efficiency

¹ Graham Warwick, "Aggressive Emissions Targets Drive Aeronautical Research," *Aviation Week & Space Technology*, Jan. 25, 2010, p. 76.

1.5 percent a year through this decade; to achieve carbon-neutral growth from 2020; and to halve carbon emissions by 2050 relative to 2005 levels. In 2009 President Obama proposed a new national fuel economy program that requires an average fuel economy standard increasing to 35.5 miles per U.S. gallon by 2016 (39 mpg for cars and 30 mpg for trucks) compared to the 2010 average of 23.5 mpg. This policy could reduce emissions from the university's commuters by 5 percent per year between 2012 and 2016.

A transportation team is being formed to develop and propose emissions-reducing measures in addition to the tactics listed here.

Tactics:

a) *Air Travel*

Tracking emissions from air travel currently includes trips managed through centralized travel services but does not include miles accumulated by users who manage their own travel. Improved air travel tracking techniques will be evaluated in order to better capture all of the university's air travel emissions. This is likely to result in a significant increase in emissions from air travel in the university's next greenhouse gas emissions inventory.

b) *Biking and Walking*

- ▶ A comprehensive campus bicycling and walking plan is in development.
- ▶ A student-run program currently provides free bicycles for student use.
- ▶ A SmartBike rental station is planned for installation on or near campus by the District of Columbia.
- ▶ Two multiuse trails are planned: 1) connecting main campus to downtown Washington, D.C., along Massachusetts Avenue, and 2) connecting main campus to the Tenley Metro station and Tenley campus along Nebraska Avenue.
- ▶ The new SIS building will provide locker and shower facilities for walkers and cyclists.

c) *Campus Fleet*

The campus vehicle fleet produces about 1 percent of the university's GHG emissions. AU's Anti-Idling Policy limits vehicle idling, as a fuel-conservation measure. The fleet currently includes 11 all-electric vehicles and two vehicles running on biodiesel. A conventional gas pickup truck is being replaced with a hybrid pickup truck. Biodiesel is being pursued as a fuel-option for the entire shuttle bus fleet. Natural gas has been considered but it was concluded that this option is currently cost-prohibitive due to the expensive fuel storage and dispensing infrastructure it would require. Conversations are under way with the District of Columbia to consider changes to public bus routes and schedules that might help reduce shuttle bus trips.



Electric utility vehicles reduce local air pollution and greenhouse gases.

d) Car Sharing

The university provides faculty, staff, and students access to Zipcar car-sharing. Preferred parking spaces are reserved for four Zipcars.

e) Flexible Work Week

Compressed or flexible work schedules are currently available at the discretion of supervisors. This approach could be revisited in the future in order to reassess whether increased flexible work schedules could reduce emissions without negatively impacting productivity.

f) Ground Transport Hierarchy

For regional business trips, strategies will be developed to implement a hierarchy of preferred transportation methods, emphasizing rail, bus, vanpool, and rental of efficient vehicles.

Partnerships with train and bus lines could be considered in order to make travel by rail or bus more attractive than air travel.

g) Guaranteed Ride Home

The university supports and promotes the District of Columbia’s Guaranteed Ride Home program designed to provide a limited number of emergency rides for commuters who do not travel by single-occupancy vehicle.

h) Local Housing

The transportation and climate teams will explore incentive-based programs that reduce commuting by enticing faculty and staff to reside near campus. The University Staff Council is developing partnerships with local housing cooperatives in order to encourage staff to live close to campus.

i) Parking Permits

AU currently provides parking to students, faculty, and staff at market-based rates. Further parking incentive structures aimed at reducing single-occupancy vehicle commuting will be considered by the transportation team, including offering a “cash-out-of-parking” program offering permit holders a rebate for opting out of parking.



American University’s Zimride Rideshare Community
THE AMERICAN DREAM is GREEN zimride share the ride <http://zimride.american.edu>

j) Ridesharing

In 2010, the university initiated a ridesharing program. The American University Zimride Rideshare community is designed to reduce the number of single-

More than one thousand members of the campus community are using American University’s Zimride rideshare system to find and share rides.

occupancy vehicle (SOV) trips and strengthen the campus community. Since its launch in February 2010, the program has already attracted nearly 1000 active campus users. The 2010 annual commuter survey will help assess how well the program reduces emissions.

k) Telecommuting

The university policy on telecommuting currently allows employees to arrange telecommuting work styles with their supervisors based on the duties and needs of their jobs. The transportation team will further develop this strategy in order to maximize its emissions-reducing potential while meeting the work needs of the university.

l) Teleconferencing

Improved teleconferencing technology offers the potential to replace business travel with virtual trips. The Green IT Team will further explore this potential and develop proposed measures.

m) Transit

The university provides a free shuttle bus between campus and the Tenley Metro station, and it offers Metrochek, a pretax payroll deduction for public transit cards. The transportation team will consider additional incentive programs, such as university-subsidized public transit passes. The university is piloting an integrated campus ID-transit pass with 300 members of the campus community in order to facilitate increased use of public transit.

n) Virtual Travel

Technology for enhancing and encouraging virtual travel will be considered and promoted as a way of reducing business travel without negatively affecting productivity.

3. Goal Three: Eliminate Paper Emissions by 2012

The Sustainable Purchasing Team and the Zero Waste Team are developing a “paper efficiency and upgrade” program that will set targets for reducing paper waste and outline a transition to tree-free, 100 percent post-consumer waste recycled content office paper by 2012. A case study of the university’s deployment of paper efficiency and upgrading is available online at:

http://www.american.edu/finance/sustainability/upload/AU_CopyPaper_CaseStudy_-2-15-10.pdf

Tactics:

a) Efficiency

Map campus printers and develop strategy for removing unnecessary printers, installing duplexers on remaining printers, ensuring future procurement of duplex-ready printers and double-sided-default computer settings.

b) Upgrade

Transition paper procurement to 100 percent post-consumer waste content and remove virgin pulp-containing paper products from office supply catalogs and ordering systems.

4. Goal Four: Eliminate Waste by 2013

The university’s Zero Waste Policy mandates the development of a plan to eliminate campus waste. A number of activities are already under way, and a detailed plan outlining the long-term path to zero waste will be produced by the end of 2010.

Tactics:

a) Construction Debris

Monitor and enforce contract clauses requiring contractors to recycle construction site debris.

b) Dining Waste

Replace individually wrapped condiments with bulk-dispensers. Expand discounts for using reusable mugs in campus dining operations. Compost food waste off site and explore options for shifting composting to on site. Utilize waste cooking oil for on-site electricity and steam production. Expand trayless dining from main campus to Tenley campus.

c) EPA WasteWise

Join the EPA WasteWise College and University campaign.

d) Paper

Consider eliminating the student printing account credit. Install duplexers and replace desktop printing with networked printing. Continue replacing paper materials with online alternatives, e.g., digital new-student orientation packet, web-based campus phone directory, online course catalog. (Also see [Goal Three](#) above.)

e) Recycling

Increase recycling rate by participating in RecycleMania, the national recycling competition, and improving and expanding recycling collection.

f) Surplus Exchange

Improve campus surplus exchange and reuse system for electronics and furniture.

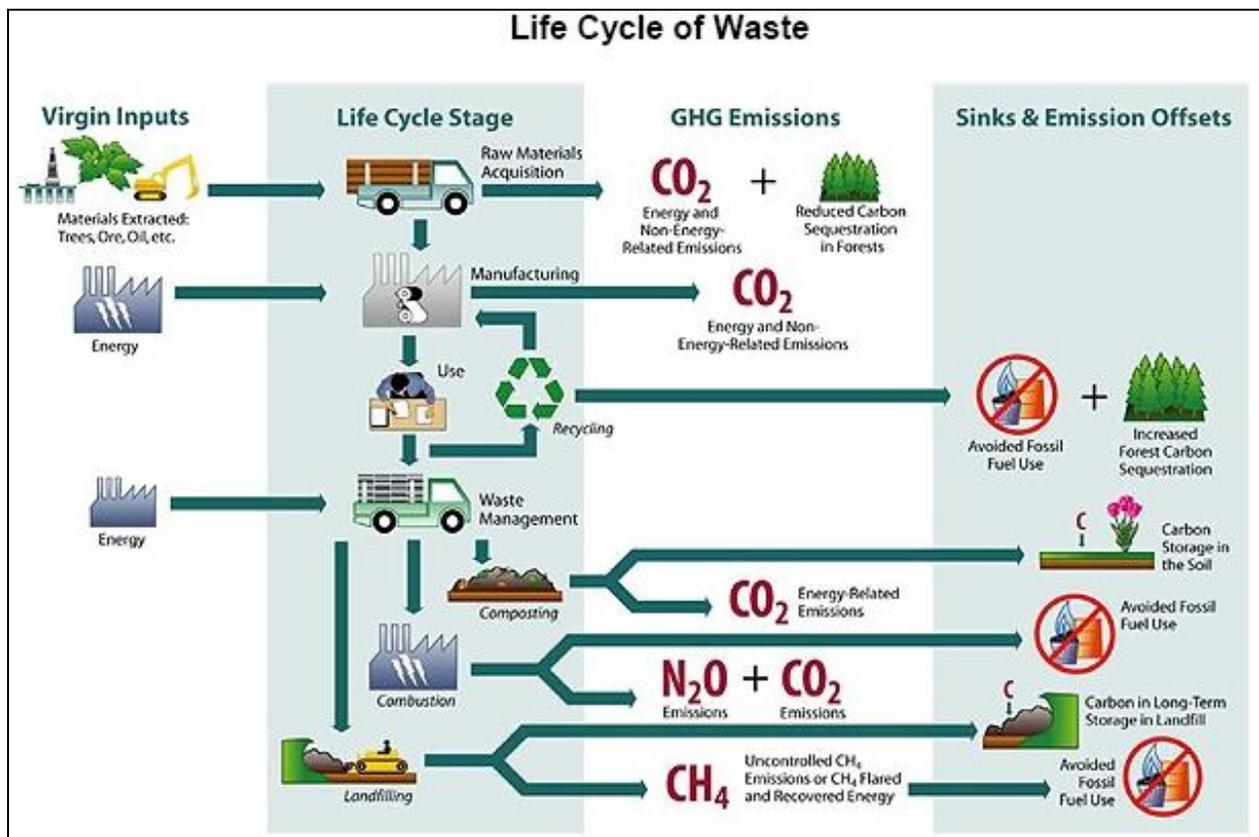


Image provided by City of Austin, Texas, Zero Waste Strategic Plan

5. Goal Five: Eliminate Agricultural Emission Sources by 2014

AU uses an integrated pest management (IPM) approach to soil and pest management. Limited use of fertilizers and pesticides produces 13.2 MT CO₂e.

a) *Integrated Pest Management*

Develop a more detailed IPM plan, using LEED guidance, to further reduce emissions from these petroleum-derived inputs.

b) *Sustainable Sites Initiative*

Pilot the Sustainable Sites Initiative on the new SIS grounds and use results to further reduce petroleum-based landscaping inputs across campus.

B. Strategy: Produce Renewable Energy

In early 2010, AU completed two on-campus renewable energy projects and is now exploring plans to maximize potential for on-site renewable energy generation by installing a combination of solar, waste-to-electricity, and small-scale wind projects capable of producing a combined output of over 1 million kWh of power annually, approximately one-fortieth of campus electricity consumption.

Goals:

6. Produce Solar Energy
7. Produce Energy from Waste
8. Produce Wind Energy

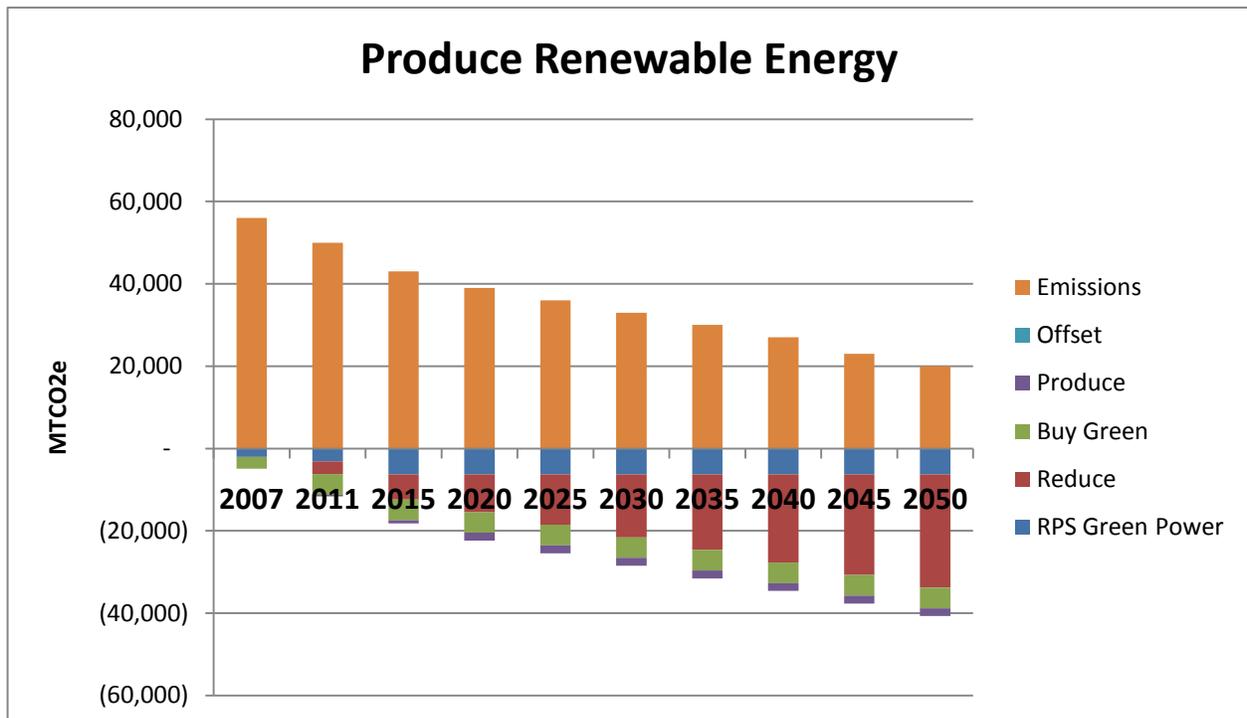


Figure 4: Emissions projection reflecting renewable energy production up to 5 percent of 2007 energy consumption

1. Goal Six: Produce Solar Energy

The new School of International Service building, designed to achieve LEED Gold certification, opens in May 2010 and features a 27kW roof-mounted photovoltaic array expected to produce 33,000 kWh annually. Preliminary studies show campus potential for additional solar photovoltaic installations capable of producing over 500,000 kWh.

Tactics:

a) Large-scale Solar Photovoltaic Installation

Explore solar power production capacity across campus. Preliminary estimates suggest the following potential:

Building	kW	kWh
Bender Library	40	54,000
Bender Parking Garage Deck	90	144,000
Mary Graydon Center	80	98,000
Katzen Arts	100	122,000
Bender Arena	120	149,000
	Total	430 567,000

b) Small-scale Solar

Explore small-scale solar applications such as solar-powered outdoor lighting.

2. Goal Seven: Produce Energy from Waste

Waste-to-electricity systems are relatively new and experimental. The university will seek opportunities to test emerging technologies on campus.

Tactics:

a) Waste Oil to Energy

The university produces approximately 15,000 gallons of used cooking oil annually. Vegawatt generators can convert this waste oil directly into electricity and steam. The university is assessing the potential for installing up to two 10 kW machines capable of converting this waste oil into approximately 250,000 kWh annually.

b) Small-scale Biomass

Small-scale biomass systems are still experimental but opportunities are being explored, including designs from students and staff, which can convert yard waste and garbage into heat, electricity, biogas, or biofuel.

3. Goal Eight: Produce Wind Energy

In 2010, the university plans to install one 10 kW Aeolun Harvester, designed by adjunct faculty member Terrence Sankar, as a first-of-its-kind demonstration project. Pending successful demonstration results, a series of additional units could be installed.



The new School of International Service features a 33kW rooftop solar photovoltaic installation.

C. Buy Green Power

Since 2006, the university has purchased renewable energy credits (RECs) for a portion of electricity consumption. In 2010, this increased to 100 percent. By 2014, the university expects to supply 100 percent of campus electricity from regionally produced renewable energy projects.

Goals:

- 9. Buy Renewable Energy Credits
- 10. Buy Green Power

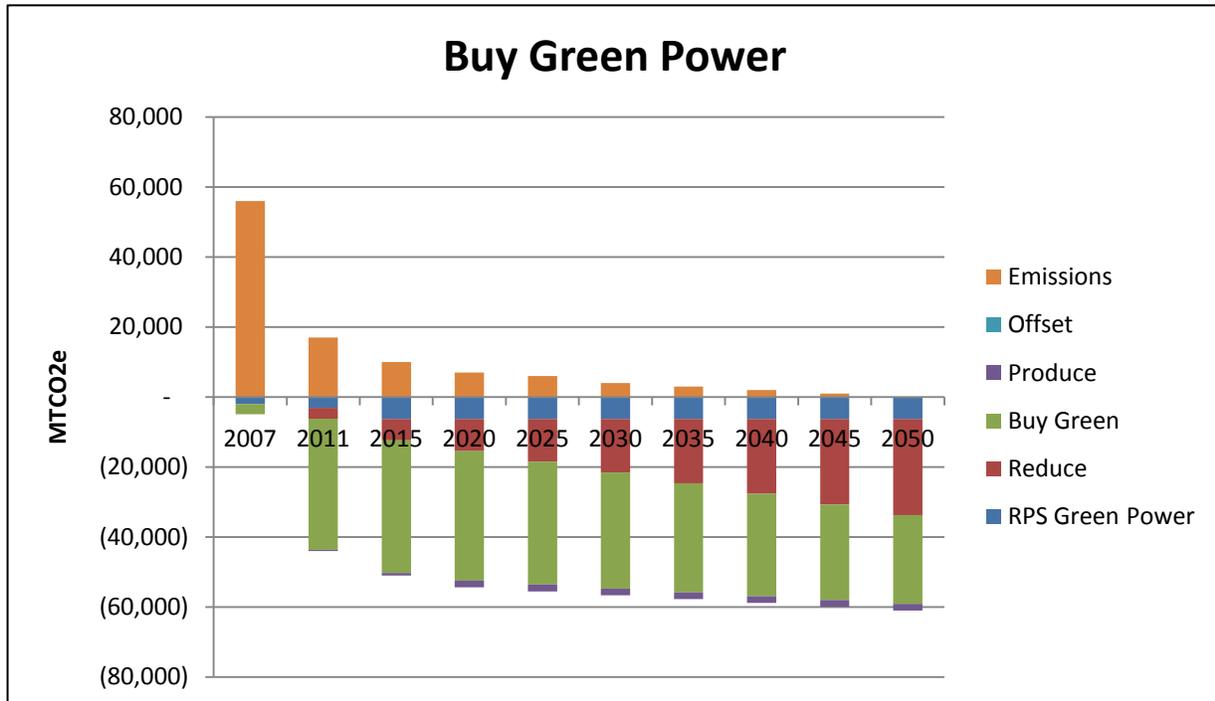


Figure 5: Emissions projection reflecting 100 percent green power purchasing

1. Goal Nine: Buy Renewable Energy Credits

From 2006 to 2008, the university purchased renewable energy credits (RECs) for 5 percent of purchased electricity. That amount was increased to 25 percent in FY 2009 and FY 2010. In April, 2010, as this Action Plan was in final preparation, the university completed a purchase of RECs equivalent to 100 percent of expected campus electricity consumption for CY 2010–2012.

Supplied by Renewable Choice Energy, these RECs are sourced primarily from the Langdon Wind Energy Center located near Landgon, North Dakota in the MROW eGrid subregion. This region sources 74.6% of its energy from coal, compared to the RFCE eGrid subregion, where American University is located, which sources just 44.9% of its energy from coal. As a result, the carbon-avoidance value of these RECs is considerably higher than if they had been sourced locally.

2. Goal Ten: Buy Green Power

Since 2007, the university has been working with the state of Maryland to plan green-power purchases from regional renewable energy production through long-term advance commitments to a series of projects, including:

a) *US Windforce Pinnacle Wind*

This is a 55 MW land-based wind project in Mineral County, W.Va., expected to produce 174,542 MWh annually, coming online in September 2011.

b) *Constellation Energy Mount St. Mary's Solar*

This is a 13 MW solar photovoltaic array project in Emmitsburg, Md., expected to produce 22,291 MWh annually, coming online in December 2012.

c) *NRG Bluewater Wind Mid-Atlantic Regional*

This is a 55 MW wind project off the Atlantic coast near Rehoboth Beach, Del., expected to produce 153,621 MWh annually, coming online December 2013.

The university intends to source grid-delivered green power from these and other regional projects in order to ensure that 100 percent of the university's electricity is supplied by a combination of onsite and regional renewable energy sources by 2015.



Located in Cavalier County, the Langdon Wind Energy Center, is a 159 MW wind farm, making it the largest wind energy facility built to date in North Dakota. The facility began operation in 2008 and is capable of generating enough power for 40,000 homes. The project employed 269 people during construction and will continue to make a strong contribution to the local economy through stable jobs, lease payments to landowners and long term tax revenue for the county and nearby schools.

D. Offset the Rest

The university views buying offsets as an active embrace of responsibility for mitigating unavoidable emissions. This strategy should be viewed in the context of this comprehensive plan, which also includes maximizing source reduction, renewable energy production, and renewable energy procurement.

One-third of the university's emissions is produced by travel, including business travel, commuting, and study abroad programs. Business travel is an essential component in faculty and staff job function and professional development, and study abroad travel is central to the university's educational experience. Programs are being developed to change commuter behavior, but this plan assumes only modest success in that regard. Thus, travel emissions sources comprise a large and mostly unavoidable source of emissions. Therefore, the university plans to purchase and develop offsets for these emissions.

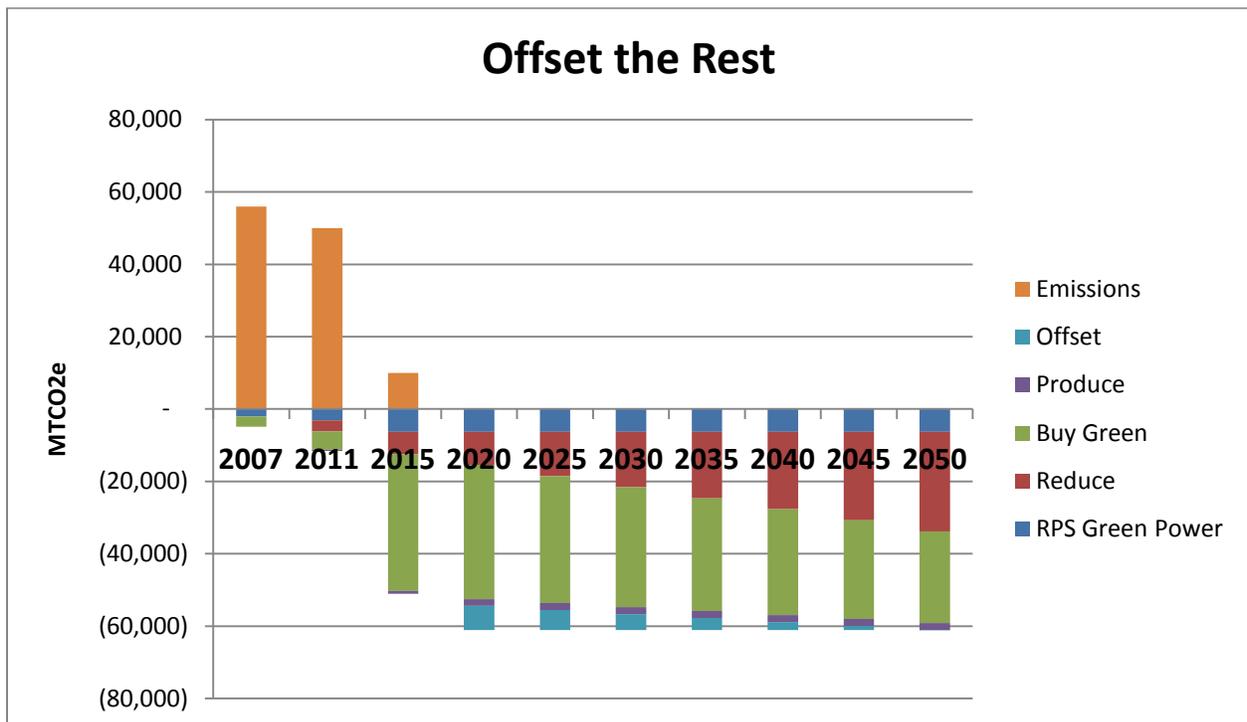


Figure 6; Emissions projections reflecting the offset of all remaining unavoidable emissions by 2020

The university plans to adhere to guidelines for purchasing offsets as outlined in the ACUPCC Voluntary Carbon Offset Protocol, as summarized here:

- ▶ Offset projects are real and emissions reductions are additional: Projects result in actual reductions of GHG emissions and would not have otherwise occurred under a reasonable and realistic business-as-usual scenario.
- ▶ Offsets projects are transparent: Project details (including project type, location, developer, duration, standard employed, etc.) are known to the institution and communicated to stakeholders in a transparent way to help ensure validity and further the goal of education on climate disruption and sustainability.
- ▶ Emissions reductions are measurable: Projects result in measurable reductions of GHGs.
- ▶ Emissions reductions are permanent: Projects result in permanent reductions of GHG emissions.

- ▶ Emissions reductions are verified: Projects result in reductions of GHG emissions verified by an independent third-party auditor that has been evaluated using the accompanying criteria.
- ▶ Offsets projects are synchronous: Projects result in reductions of GHG emissions that take place during a distinct period of time that is reasonably close to the period of time during which the GHG emissions that are being offset took place.
- ▶ Offsets projects account for leakage: Projects take into account any increases in GHG emissions that result from the project activity.
- ▶ Credits are registered: Credits generated from project activities are registered with a well-regarded registry that has been evaluated using the accompanying criteria.
- ▶ Credits are not double-counted: Credits generated from project activities are not double-counted or claimed by any other party.
- ▶ Credits are retired: Credits are retired before they are claimed to offset an institution's annual greenhouse gas inventory, or a portion thereof.

Goal:

11. Buy offsets for unavoidable emissions
12. Develop offset projects

1. Goal 11: Buy Offsets for Unavoidable Emissions

A policy will be proposed beginning in FY 2011 requiring that all travel emissions be offset. These offsets will be purchased according to the ACUPCC criteria listed above.

2. Goal 12: Develop Offset Projects

In order to ensure utmost confidence and maximize educational and research value, the university plans to develop offset projects for all unavoidable emissions by 2020. The campus arboretum currently sequesters 207 MTCO₂e. The Climate Action Project Team will propose a strategy for the university to develop or closely partner on developing offset projects within the Washington, D.C., area and/or in AU Abroad destination locales where students, faculty, and staff would have opportunities to be directly involved in the projects. The team is already in dialogue with two local residential developments regarding potential for collaboration in developing offset projects.



Annual campus tree plantings help remove and sequester GHG emissions.

IV. Education, Research, and Outreach

AU has an opportunity, as an institution of higher education, to emphasize the importance of climate change to American University community. Sustainability in general and climate change, in particular, are increasingly prominent in campus education, research, and outreach nationwide. This plan focuses on developing mitigation strategies. This section summarizes current climate change education, research, and outreach activities. The team anticipates developing a more extensive treatment of this subject as it continues to work with academic and community leaders through the rest of CY 2010.

A. Education

1. Faculty and Staff Education

Faculty and staff orientation and professional training planners should consider including sustainability and climate change education in their programs. AU's Center for Teaching, Research, and Learning offers a Green Teaching Certificate for faculty who adhere to a checklist of course-greening activities, including reducing paper, saving energy, and encouraging student interest and activity in sustainability. Other opportunities for staff sustainability education should be considered and implemented as appropriate.

In February 2010, 25 university staff members participated in a two-day LEED exam prep course. There are now at least three LEED-accredited professionals on staff and three on faculty in the Kogod School of Business. One next step will be to incorporate sustainability into new staff orientation.

2. Student Education

Students are exposed to sustainability education early in their AU experience by attending a new-student sustainability orientation during their first week on campus. In 2010, AU began cataloging sustainability-focused and sustainability-oriented curricula in order to encourage and emphasize education that contributes to solving the great sustainability challenges of our time, such as climate change.

AU's Campus Beautification Day attracts about 400 participants every year in campus greening activities, such as planting trees and plants, building rain gardens, eradicating invasive species, and suppressing weeds and conserving water by mulching landscape. The student environmental club, Eco-Sense, is a driving force in campus environmental education. The group's many activities include creating and managing an organic community garden, sponsoring environmental film screenings and speakers,



Facilities Management director William Suter hosts the annual Campus Beautification Day, engaging the community in hands-on management of the campus arboretum and other natural features.

organizing neighborhood environmental cleanups, and organizing student participation in political activism in support of environmental legislation.

Resident hall activities include participation in RecycleMania, a model green dorm room planned for fall 2010, a sustainable living interest community, and a University College seminar and resident grouping around the theme “The Sustainable Earth.”

The university offers degrees and coursework in sustainability, including undergraduate and graduate degrees in environmental science, an undergraduate concentration in global environmental politics, a master’s in global environmental policy, and a master’s in natural resources and sustainable development. The latter program is offered jointly by AU and the University for Peace in Costa Rica. A campus-wide master’s degree in sustainability management administered by the Kogod School of Business is planned to launch fall semester 2010.

American University offers a growing number of courses focused on or related to sustainability. The School of International Service is advancing a General Education course for freshmen that will focus on sustainability. During AY 2009–2010, a number of courses included students in green building design and campus sustainability efforts with an emphasis on climate change, including Practical Environmentalism, and Sustainable Design: Building an Environmental Future. Students in both courses have been actively participating in the university’s STARS sustainability rating system and LEED campus pilot project. Students in the latter course have gone on to become LEED-accredited professionals.

The Washington College of Law offers more than 30 courses in international and comparative environmental law, one of the largest programs of its kind in the country. The Washington College of Law also enjoys a special relationship with the Center for International Environmental Law, sponsoring a Joint Research Program in International and Comparative Environmental Law.

The Center for Environmental Filmmaking, a project of the School of Communication, hosts an on-campus Environmental Film Series through both spring and fall semesters, and holds an Environmental Short contest each year in conjunction with the DC Environmental Film Festival.

It is anticipated that, working with AU’s academic leadership, the climate team will be able to identify sustainability and climate change courses and degrees in the course catalog and on the AU Web site. It is further anticipated that sustainability outcomes will be identified for sustainability-oriented curricula and that incoming and graduating students will be surveyed for sustainability and climate change literacy. Finally, it is anticipated that incentives will be considered for encouraging faculty to develop sustainability and climate change-oriented courses.

Additional sustainability and climate-change curricula, degree programs, and cocurricular student education are anticipated as sustainability consciousness grows on campus.

B. Research

In 2010, AU began cataloging sustainability-oriented research interests in order to foster connections and collaborations, additional research, and potentially identify opportunities for applied research on campus. It is anticipated that incentives and opportunities will be considered to encourage sustainability and climate change-oriented research. In addition to teaching and researching sustainability, many faculty members engage in policy debates at think tanks, on Capitol Hill, and through public media.

C. Outreach

In August 2009, the Office of Sustainability launched the university's new sustainability Web site and has since worked with various academic and administrative units to produce and feature more sustainability and climate change news in university publications. Beginning in 2010, the office will publish a sustainability newsletter and produce and place sustainability signage throughout campus.

It is anticipated that, as a result of this plan, AU faculty, staff, and students will increase outreach activities within the Washington, D.C., community. For example, two close-by neighborhood groups have already requested the university's expertise and support in their own sustainability efforts, including storm water management improvements and green building upgrades. Faculty members are considering ways to cooperate with local schoolteachers and student groups to advance sustainability education. Public sustainability tours will soon be offered of the campus as a whole and of the new School of International Service building, in particular, which is tracked for LEED Gold certification.

V. Financing

Achieving carbon neutrality will require the university to invest in: 1) energy-saving technologies, 2) renewable energy production, 3) renewable energy purchasing, and 4) carbon offsets, but on balance, this plan projects a cost-neutral approach to carbon-neutrality.

Energy efficiency and renewable energy production require short- to medium-term investments that pay back in between 1 to 15 years and typically provide financial savings for 10 to 20 years after breaking-even. Renewable energy purchasing is expected to be cost neutral to cost saving compared to projected conventional energy costs. Carbon offsets are a net expense without direct payback, but their cost is relatively low and their potential educational and research value is compelling.

The university will finance this plan through traditional mechanisms such as capital development and renewal projects, individual departmental budgets, and external grants as available. A Clean Energy Revolving Fund, which was developed and championed by students, has now been established as a mechanism for funding development of clean-energy generation and energy-efficiency projects. This fund is designed to accept gifts from students, alumni, faculty, and staff who will support on-campus emissions-reducing projects.

Table 2 (below) projects costs and benefits of emissions-reducing projects that are either in progress or under consideration. Projects in this list will be developed and proposed one at a time through the rest of CY 2010. This list does not include projects under consideration for which cost-benefit analyses are not yet available, such as geothermal and solar hot water. Three types of projects are expected to have considerable capital costs: geothermal, solar photovoltaics, and solar hot water. However, a major solar photovoltaic installation could be structured as a power purchase agreement, thereby avoiding capital investment. Geothermal can be very cost effective when integrated into new construction projects. Maximizing solar hot water on existing residence halls could require up to \$8m in capital investment.

As a whole, the projects in this list are expected to produce net savings that should more than compensate for additional expenses incurred as a result of buying/developing offsets.

Table 2: Summary of energy efficiency and renewable energy production projects in development

Project Name	Start Year	Duration (years)	Units	Total Capital Cost	Total Capital Cost Including Incentives	Average Discounted Annual Cash Flow	NPV	IRR	Discounted Payback Time (years)	Annual Reductions (MT eCO ₂)	Total Lifetime Reductions (MT eCO ₂)	% of Start Year Emissions	% of End Year Emissions	Discounted Cost per Reduction	Rank
All Projects	2010	31	N/A	(\$8,430,143)	(\$8,393,143)	\$512,811	\$16,409,967	108.19%	N/A	(4,550.7)	(141,072.0)	N/A	N/A	\$116.32	N/A
Projects with positive NPV	2010	31	N/A	(\$8,369,143)	(\$8,332,143)	\$515,605	\$16,499,355	112.52%	N/A	(4,066.0)	(126,045.1)	N/A	N/A	\$130.90	N/A
Aeolun Harvester	2010	25	1	(\$39,254)	(\$39,254)	\$54,031	\$1,404,808	243.97%	0.42	(468)	(11,690)	0.78%	0.59%	\$120	5
Zimride	2010	10	1	(\$1,000)	(\$1,000)	(\$5,621)	(\$61,832)	-	N/A	(418)	(4,184)	0.69%	0.62%	(\$15)	11
Steam Turbine	2010	30	1	(\$692,000)	(\$692,000)	\$37,459	\$1,161,215	15.14%	7.78	(563)	(16,897)	0.93%	0.68%	\$69	7
Vegawatt	2010	10	2	(\$66,000)	(\$66,000)	\$30,058	\$330,634	75.94%	1.34	(260)	(2,598)	0.43%	0.39%	\$127	3
Pulper/eCorect	2010	10	1	(\$60,000)	(\$60,000)	(\$2,505)	(\$27,556)	-	N/A	(1,084)	(10,843)	1.80%	1.61%	(\$3)	10
Paper	2010	25	1	-	-	\$0	\$0	-	0.00	(34)	(860)	0.06%	0.04%	\$0	9
SIS Solar (PV)	2010	30	1	(\$208,604)	(\$171,604)	\$1,389	\$43,071	5.95%	20.60	(17)	(514)	0.03%	0.02%	\$84	6
Biodiesel Shuttles	2011	10	1	-	-	\$69,889	\$768,778	-	0.00	(96)	(960)	0.16%	0.14%	\$801	1
Solar (PV)	2011	30	1	(\$2,243,000)	(\$2,243,000)	\$34,165	\$1,059,118	7.54%	16.27	(281)	(8,445)	0.46%	0.34%	\$125	4
Solar H2O Residence Halls	2011	30	1	(\$5,000,000)	(\$5,000,000)	\$37,536	\$1,163,614	5.80%	21.25	(932)	(27,967)	1.53%	1.12%	\$42	8
RECs	2010	2	1	(\$120,285)	(\$120,285)	\$3,561,059	\$10,683,176	4856.53%	0.02	(28,056)	(56,113)	46.56%	45.97%	\$190	2

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VI. Tracking Progress

The Office of Sustainability will track greenhouse gas emissions using annual inventories and will report progress in the STARS sustainability rating system.

Several key teams are tasked with developing, implementing, tracking, and reporting on specific tactics used to deploy these strategies. The Climate Action Project Team and the Environmental Issues Project Team will track overall progress. Major teams contributing to the effort include the Energy Management Team, the LEED Pilot Team, the Green IT Team, the Sustainable Purchasing Team, the Transportation Planning Team (pending initiation), and the Zero Waste Team.

The Office of Sustainability coordinates and aggregates activities and outcomes from all of these teams and will report progress.

VII. Addendum II—Green Building Policy

This policy is available online at: <http://www.american.edu/policies>.

I. SCOPE

This policy supports the university's goal to manage its activities so that they have a positive impact on our environment, and it applies to all university-owned and operated facilities.

II. POLICY STATEMENT

Consistent with American University's strategic goal to "Act on our values through Social Responsibility and Service," and to facilitate implementation of our existing sustainability policies (as referenced above), the purpose of this policy is to protect and restore our environment by utilizing cleaning products and practices designed to: improve energy, water, and material efficiency; utilize renewable materials; enable the university to attain carbon neutrality or net positive renewable energy production; eliminate waste, especially hazardous materials; enhance the physical campus environment; and protect and enhance the health of the university community.

III. DEFINITIONS

US Green Building Council (USGBC) is a Washington, D.C.,-based 501(c)(3) nonprofit organization committed to promoting cost-efficient and energy-saving green buildings through the Leadership in Energy and Environmental Design (LEED) green building certification program. LEED is a voluntary, consensus-based national rating system for buildings designed, constructed, and operated for improved environmental and human health performance, addressing all building types and emphasizing state-of-the-art strategies in sustainable site development, water savings, energy efficiency, materials and resources selection, and indoor environmental quality.

IV. POLICY

All construction, including new construction, major renovation, and major replacement and repair projects will be implemented to be equal to the US Green Building Council's LEED Silver standard, or better.

By May 2010, the Office of Sustainability, in collaboration with the Office of the University Architect, Facilities Management, Facilities Administration, Auxiliary Services, and Procurement and Contracts, and with advice from the Environmental Issues Project Team and the Climate Action Project Team, will develop procedures, plans, and a timeline for implementing this policy.

V. FREQUENCY OF REVIEW AND UPDATE

Any party affected by this policy may initiate review and update at any time. The Office of Sustainability will initiate review and update not more than two years from the effective date, or date of last review or update, whichever is most recent.

VI. EFFECTIVE DATE AND APPROVAL

Signed by President Neil Kerwin and Vice President of Finance and Treasurer Don Myers on January 15, 2010. Effective immediately.

VIII.Addendum III—Sustainable Purchasing Policy

This policy is available online at: <http://www.american.edu/policies>.

I. SCOPE

The policy provides guidelines, information, and resources for developing sustainable purchasing practices that apply to procurement conducted by all university departments and offices.

II. POLICY STATEMENT

Consistent with American University’s goal to “Act on our values through social responsibility and . . . an active pursuit of sustainability,” the purpose of this policy is to guide university procurement in ways that advance social responsibility and environmental sustainability by using, maintaining, disposing of, or repurposing, goods and services which: improve energy, water, and material efficiency; utilize renewable materials; advance the university toward carbon neutrality or net positive renewable energy production; eliminate waste, especially hazardous materials; enhance the physical campus environment; protect and enhance the health of the campus community; encourage AU employees to adopt sustainability practices; offer additional consideration to vendors with sustainable production, distribution, and end-of-life management systems or services; support locally produced goods and services; educate the university campus and the extended community about sustainability.

III. DEFINITIONS

Best Value: A result intended in the acquisition of all goods and services based on consideration of total cost of ownership, product life-cycle impacts, human health and equity concerns, product quality and performance, and vendor quality of service.

Product Life-cycle Impacts: The social and environmental costs and benefits resulting from a product over its life span, from raw material acquisition, manufacturing, distribution, use, maintenance, and end-of-life management.

Total Cost of Ownership: The real cost for a product, encompassing materials, installation, maintenance, anticipated repairs, necessary monitoring, and end-of-life management.

IV. POLICY

Sustainable Purchasing Guiding Principles

University personnel shall conduct purchasing in accordance with the following principles:

1. Utilize procurement to act on the university’s values of social responsibility and environmental sustainability.
2. Support the university policy of striving to produce zero waste, by reducing overall consumption and shifting to products with reduced product life-cycle impacts.
3. Support the university commitment to eliminate and offset our greenhouse gas emissions.
4. Consider total cost of ownership, rather than low purchase price, when evaluating the financial competitiveness of procurement contracts.
5. Require sustainability standards and certifications whenever they are available, with preference for those which are developed by third-parties through balanced stakeholder processes, and which are independently verified throughout a product’s chain of custody.
6. Continuously improve sustainable purchasing practices.
7. Serve as a model of sustainable purchasing to our community of consumers and suppliers.

V. FREQUENCY OF REVIEW AND UPDATE

Any party mentioned in the Policy section above may initiate review and update at any time. The Office of Sustainability will initiative review and update not less than two years from the effective date, or date of last review or update, whichever is most recent.

VI. EFFECTIVE DATE AND APPROVAL

Signed by President Neil Kerwin and Vice President of Finance and Treasurer Don Myers on January 15, 2010. Effective immediately.

Policy Addendum: Procedures

A. Staff Roles and Responsibilities

Within sixty (60) days of adoption of the Sustainable Purchasing Policy, the Office of Sustainability and the Procurement and Contracts Department will establish and convene a Sustainable Purchasing Team (“the Team”), including, at minimum, representatives from: Facilities and Administrative Services, Office of the Provost, Campus Life, Washington College of Law, WAMU, Risk Management, and Athletics.

B. Implementation Priorities

Within ninety (90) days of the adoption of this policy, the Team shall establish Sustainable Purchasing Guidelines for the good/services listed below and shall provide a timeline for implementing Sustainable Purchasing Guidelines for at least ten (10) additional products/services. Within three years, the Team shall implement Sustainable Purchasing Guidelines for the majority of remaining products/services.

Beverage water	Cleaning products (see Green Cleaning Policy)
Computers and other office electronics	Energy Star-rated products
Furnishings, Fittings, and Equipment	Ink and toner cartridges
Office paper	Office supplies
Printing Services	

C. Sustainable Purchasing Team Activities

1. **Handbook:** The Team shall develop and disseminate an online Sustainable Purchasing Handbook which compiles Sustainable Purchasing Guidelines, referencing and adhering to existing guidelines or policies that may already impact green purchasing.
2. **Procedures:** The Team shall recommend procedures or changes required to incorporate the Sustainable Purchasing Guidelines into existing purchasing systems.
3. **Training and Outreach:** The Team shall design and implement Sustainable Purchasing training and outreach programs for appropriate staff, vendors and contractors.
4. **Quality Assurance & Testing:** End users are encouraged to work with Procurement and Contracts to seek and try new products that advance the spirit of this policy as they become available in the marketplace to ultimately be included in the Sustainable Purchasing Handbook.
5. **Tracking:** The Team shall implement a Sustainable Purchasing Tracking System to monitor the following impacts related to Sustainable Purchasing:
 - a. Financial costs and savings, such as those resulting from water, energy, and waste reductions;
 - b. Benefits to human health and the environment, such as energy and water saved, waste prevented or diverted, and greenhouse gas emissions avoided.
6. **Reporting:**

- a. Departments identified by the Team shall submit a Sustainable Purchasing Report to the Office of Sustainability, by an annual deadline established by the Team, and containing information specified by the Team.

The Office of Sustainability, by an annual date specified by the Team, shall include Sustainable Purchasing in an annual Sustainability Report submitted to the university president, compiling and summarizing reports submitted by Departments.

IX. Addendum IV—Zero Waste Policy

This policy is available online at: <http://www.american.edu/policies>.

I. SCOPE

This policy applies to all university departments.

II. POLICY STATEMENT

Consistent with American University’s strategic goal to “Act on our values through Social Responsibility and Service,” and to facilitate implementation of our existing sustainability policies (as referenced above), the purpose of this policy is to protect and restore our environment by managing material flows through the university and manage waste/recycling processes that: improve energy, water, and material efficiency; utilize renewable materials; enable the university to attain carbon neutrality or net positive renewable energy production; eliminate waste, especially hazardous materials; enhance the physical campus environment; and protect and enhance the health of the university community.

III. DEFINITIONS

Construction and Demolition Debris: For the purposes of this policy, the term Construction and Demolition Debris includes, at a minimum: building components and structures (wall studs, insulation, doors, windows), panels, attached finishes (drywall, trim, ceiling panels), carpet and other flooring material, adhesives, sealants, paints and coatings. Furniture, fixtures and equipment; and mechanical, electrical and plumbing components, and specialty items such as elevators, are not included in this definition.

Durable Goods: For the purposes of this policy, the term Durable Goods includes, at a minimum: office equipment (computers, monitors, copiers, printers, fax machines); appliances (refrigerators, dishwashers, water coolers); external power adapters; televisions and other audiovisual equipment.

Source Reduction: reduces the amount of unnecessary material brought to campus, for example excess product packaging such as disposable, single-use water bottles.

US Green Building Council (USGBC) LEED Standard: is a Washington, D.C.-based 501(c)(3) nonprofit organization committed to promoting cost-efficient and energy-saving green buildings through the Leadership in Energy and Environmental Design (LEED) green building certification program. LEED is a voluntary, consensus-based national rating system for buildings designed, constructed, and operated for improved environmental and human health performance, addressing all building types, and emphasizing state-of-the-art strategies in: sustainable site development, water savings, energy efficiency, materials and resources selection, and indoor environmental quality.

Waste: comprises all materials that flow from campus to final disposal, for example paper, yard waste, food scraps, and plastics. In LEED, waste refers to all materials that are capable of being diverted from campus buildings’ waste stream through waste reduction.

Waste Diversion: is a management activity that disposes of waste other than through incineration or the use of landfills, for example reuse and recycling.

Waste Reduction: includes source reduction and waste diversion through reuse and recycling.

IV. POLICY

The university will conduct and contract waste management to be consistent, at a minimum, with the requirements of the United States Green Building Council (USGBC), Leadership in Environmental Engineering and Design standards, as summarized below; and shall strive for zero waste sent to landfill and incineration.

By June 30, 2010, the Office of Sustainability, in collaboration with Facilities and Administrative Services, Procurement and Contracts, and other university units as may be deemed necessary, shall develop a plan for achieving zero waste by a target date established by the team, including interim benchmarks for reducing waste at the source, increasing recycling rates, diverting waste toward reuse and composting, and other waste reduction and diversion strategies as they become identified.

The zero waste plan shall require an annual waste stream audit; designate staff responsible for implementing the plan; outline proposed actions for reducing waste; describe tracking and review procedures for monitoring the plan; and include deadlines for achieving, at minimum, the following goals:

- ▶ Reuse, recycle or compost 50 percent of ongoing consumables (by weight or volume)
- ▶ Reuse, recycle or compost 100 percent of ongoing consumables (by weight or volume)
- ▶ Reuse or recycle 75 percent of durable goods waste stream (by weight, volume or replacement value)
- ▶ Reuse or recycle 100 percent of durable goods waste stream (by weight, volume or replacement value)
- ▶ Divert 70 percent of construction and demolition debris (by volume) from landfill or incineration
- ▶ Divert 100 percent of construction and demolition debris (by volume) from landfill or incineration
- ▶ Recycle all mercury-containing lamps
- ▶ Divert 80 percent of discarded batteries from trash, including single-use and/or rechargeable batteries used in radios, phones, cameras, computers and other dry-cell types of batteries.
- ▶ Divert 100 percent of discarded batteries from trash, including single-use and/or rechargeable batteries used in radios, phones, cameras, computers and other dry-cell types of batteries.

V. FREQUENCY OF REVIEW AND UPDATE

Any party affected by this policy may initiate review and update at any time. The Office of Sustainability will initiate review and update it not more than three years from the effective date, or date of last review or update, whichever is most recent.

VI. EFFECTIVE DATE AND APPROVAL

Signed by President Neil Kerwin and Vice President of Finance and Treasurer Don Myers on January 15, 2010. Effective immediately.