

Sustainability at ASU

Introduction

Arizona State University (ASU) is on the forefront of implementing sustainability into all aspects of the university. Its sustainability initiatives are driven by its Carbon Neutrality Action Plan. The Carbon Neutrality Action Plan commits ASU to mitigating 100% of its carbon emissions from energy, agriculture and refrigerants, and waste-related sources by 2025, and 100% of its carbon emissions from transportation by 2035. ASU's sustainability initiatives can be organized into eleven categories: Curriculum; Energy Conservation; Renewable Energy; Recycling and Waste; Transportation; Food Services; Water Conservation; Buildings; Grounds; Services and Maintenance; and Purchasing and Policy. The rest of this paper will provide examples of sustainability initiatives within each one of the categories.

Curriculum

ASU is home to the first School of Sustainability in the world. Established in 2007, the School of Sustainability brings together multiple disciplines and leaders to create and share knowledge, train a new generation of scholars and practitioners, and develop practical solutions to the most pressing environmental, economic, and social challenges of sustainability, especially as they relate to urban areas. The School of Sustainability takes a transdisciplinary approach in its curriculum, addressing a range of global challenges, including: energy, materials, and technology; water quality and scarcity; international development; ecosystems; social transformations; food and food systems; and policy and governance.

Energy Conservation

Arizona State University is committed to reducing its energy consumption, increasing efficiency, and minimizing harmful emissions related to energy consumption. ASU is making utilities infrastructure upgrades on the Tempe campus to reduce electrical and natural gas consumption and use of chilled water for cooling. ASU's Tempe campus classrooms and offices are heated to no higher than 68° F, and cooled to no lower than 80° F to reduce the amount of energy used for space conditioning. ASU is committed to reducing wasted power from computers through power management and purchasing energy efficient computers. Campus Metabolism™ provides an interactive web tool that enables users to examine real-time energy and water use on campus by individual building, building type, or the entire campus.

Renewable Energy

With more than 300 sunny days per year, Phoenix is a prime location for developing and using solar power. ASU reached 15.3 MWdc of solar-energy capacity on March 21, 2012 and is on track to reach 19 MWdc by December 2012 with a goal of at least 20 MWdc by 2014. ASU has mounted six wind turbines on the roof of the Global Institute of Sustainability building to provide an additional source of renewable energy. ASU provides an innovative academic laboratory and demonstration model of sustainable processes and practices.

Recycling and Waste

Arizona State University works together across all four campuses to minimize waste and increase the proportion diverted from landfills. Recycling efforts across ASU's four campuses have two main goals: to increase recycling participation and to reduce contamination that can relegate an entire bin of recyclables to the landfill. With a community of more than 80,000, proper recycling can have a major impact on reducing our solid waste. ASU is developing a university-wide composting program. Currently, about 14 tons of landscaping waste is composted monthly at a local farm. ASU purchases the compost for use on campus landscapes, replacing artificial fertilizers. Sun Devils Surplus Exchange and Transfer (SunSET) is a university-wide "classified ad" system for exchanging ASU property. Through SunSET, ASU departments can reuse office and lab supplies, furniture, and other unneeded items. Surplus Property harvests and sells metal from retired ASU property, recycles cardboard and paper that cannot be reused, and generally does all it can to reduce waste and increase revenue. ASU Mail Services has partnered with Ecological Mail Coalition to help reduce each department's junk mail, including catalogs, magazines, and other advertising mail for employees who are no longer in a department. Ditch the Dumpster gives students a way to recycle, reuse, or repurpose their leftovers during the year-end rush to move out of residence halls. The annual event benefits local charities.

Transportation

Choosing alternative transportation can reduce traffic congestion, air pollution, and personal automobile fuel and maintenance expenditures. The ASU U-Pass provides unlimited access to all four campuses and greater Phoenix on Valley Metro bus routes and the METRO light rail. U-Pass is available to students, faculty, and staff for a discounted rate. Free intercampus shuttles to the Polytechnic and West campuses as well as several shuttle routes around the Tempe campus make it easy to get from one location to another. Commuters can use a free ridematching service to find others in the Valley who are interested in sharing the ride to work in a carpool or vanpool. ASU offers carpool-reserved parking spaces on both the Tempe and West campuses. Students can borrow a bicycle for no cost, receive expert maintenance and repair of their bicycles, and purchase at a discount many common replacement parts, as well as locks, lights and helmets. Bicyclists can buy high-quality bicycle helmets, headlights and U-locks at 50% off the retail price. ASU partners with Zipcar, a car-sharing company that makes it possible to use alternate forms of transportation to travel to campus, and still have affordable access to a vehicle when needed.

Food Services

Arizona State University is committed to sustainability in its food services through waste reduction, pollution management, and energy and water efficiency. Sun Devil Dining is committed to making environmentally responsible decisions across its operations, minimizing environmental impact while providing quality food and service. The University Club focuses on creating a sustainable environment through its food selections, waste conservation, and more. Campus Harvest engages the ASU community in planting and harvesting food from ASU's extensive urban campus to provide fresh, local produce for campus kitchens, for charity, and for sale. CSA partner Crooked Sky Farms provides fresh, local, organic produce to community members at ASU's Polytechnic and West campuses. Students, staff, faculty, and others purchase shares of high-quality, local produce, providing financial security to a local farm. Approximately 35% of ASU food expenditures go toward local, organic, or otherwise environmentally preferable food. Roughly

15% of total purchases are from within a 150-mile radius. Filtration stations located in ASU residence halls allow students to refill both one-gallon and five-gallon jugs with fresh water, saving them money and reducing waste. ASU sponsors a monthly farmers market at the Tempe campus during the school year to promote healthy eating and sustainability. The market features vendors of fresh produce grown by local Arizona farmers and other local products. Engrained is a café on the Tempe campus that serves locally grown and sustainable meals made to order, displays information about local farms, and provides tips on ways patrons can incorporate eco-conscious behaviors into daily life.

Water Conservation

Through technology and refined practices, Arizona State University has reduced its indoor and outdoor water consumption. ASU has reduced water consumption in many buildings around campus through the installation of low-flow water fixtures such as sinks, showers, toilets, and in some buildings, waterless urinals. On average, these efficient appliances use approximately 30% less water than their conventional counterparts. ASU's campus is Arizona's largest public arboretum, dedicated in 1990 and committed to proper water management and conservation while educating visitors about the complex ecological systems on earth. Facilities Management has instituted several practices designed to reduce the amount of water used in landscaping on campus. About two-thirds of campus is watered at night to prevent evaporation. An initiative is also underway to automate the remaining systems so that the different plants on campus receive water based on both current weather conditions and a given plant's evapotranspiration rate. Existing flood irrigation infrastructure has been preserved for future use with a gray water system when practicable.

Buildings

Green design has environmental, economic, and social elements that benefit Arizona State University students, faculty, staff, and other building occupants. Arizona State University has established a Sustainable Design Policy for new construction and major renovation projects on all ASU campuses. Design professionals, contractors, and third party project developers must incorporate the guidelines into their ASU projects. Following a 2005 order by the governor of Arizona, ASU now requires, to the fullest extent practicable, Leadership in Energy and Environmental Design (LEED) Silver certification for all new construction of university-owned and operated buildings. Green building design reduces environmental impacts and operating costs while improving worker productivity and well-being. ASU is home to Arizona's first LEED Platinum building; the Biodesign Building B.

Grounds

Grounds Services is implementing new sustainable solutions and changing its traditional methods and equipment of grounds keeping. The Arboretum at ASU encompasses the entire Tempe Campus and is managed by the Facilities Management Ground Services Department. As Arizona's largest public arboretum, it is home to more than 900 species and is nationally recognized arboretum as a flourishing oasis of plants from around the world. Arizona State University at the Polytechnic campus has created a community garden, the first of several planned for all campuses. The garden encourages students to learn about permaculture and sustainable food prac-

tices, creates a sense of community, and transforms an underutilized area to one that is more vital and engaging. Grounds Services conceptualized the ASU Campus Harvest program, implemented the university's water-saving landscaping measures, and participates in the composting initiative. Grounds Services has contributed to improved air quality by eliminating its arsenal of leaf blowers and continues to seek alternative grounds-keeping methods to achieve greater sustainability on campus. Grounds Services workers operate several three-wheeled bicycles pulling small carts. Workers quickly and easily navigate the more than 700-acre Tempe campus, carrying tools and equipment while reducing the university's vehicle emissions.

Services and Maintenance

Arizona State University is committed to using services and products that are more sustainable and reusing materials whenever possible. Across the university, 95% of cleaning products are green certified, and in dining facilities, all cleaning products are certified by Ecolab's green seal. ASU's print shop is Forest Stewardship Council and Sustainable Forestry Initiative certified, using soy inks and 100% recycled paper for all productions, including business cards, letterhead, envelopes, note pads, and note cards. The environmental graphic design group at ASU's sign shop designed a near-zero waste modular signage system that uses reusable, recyclable, low-emitting materials, and reclaims old signs for reuse. ASU filters and stirs together odd lots of old paint for reuse on small projects around the campus and the community, in the process eliminating a hazardous waste. ASU has established the Green Labs program to promote the reuse and sharing of laboratory chemicals. The program focuses on waste reduction, proper chemical disposal, as well as energy and resource conservation.

Purchasing and Policy

Arizona State University recognizes that promoting sustainability begins internally with its own business practices and university policy. Arizona State University-sponsored air travelers now have the option to select an Environmental Impact Fee (EIF) that will help reduce greenhouse gas emissions and fund campus emissions-reduction projects. The EIF also enables ASU to comply with item 2c of the American College and University Presidents' Climate Commitment signed by ASU President Michael Crow in 2006. ASU's comprehensive Green Purchasing Policy covers energy, water, toxins and pollutants, biobased products, forest conservation, recycling, packaging, green building, and landscaping. Introduced in 2007-08 for employees of the Global Institute of Sustainability, ASU Human Resources established criteria for evaluating staff on their sustainability efforts and conscientiousness. The Small Business and Diversity Program provides small and disadvantaged businesses with a fair opportunity to compete with large and national businesses to supply services and products to the university. ASU created a values-based standard for significant business relationships, which influences the evaluation and selection of university contractors. Along with mandatory contract provisions such as nondiscrimination, a safe and harassment-free work environment, and prohibition of controlled substances and weapons, contractors are asked to address several preferred provisions such as socially responsible wages, environmentally responsible practices, and employee education and training.

Note: Information about sustainability at ASU can be found at:
<http://sustainability.asu.edu/practice/what-asu-is-doing/index.php>