



Highlights

Report on Sustainability 2009

www.princeton.edu/reports/sustainability2009

Office of Sustainability
November 2009

In its first report since adopting a Sustainability Plan in February 2008, Princeton University describes significant progress toward ambitious goals in the areas of greenhouse gas emissions reduction, resource conservation, and research, education and civic engagement.

This Report on Sustainability, compiled over the summer and fall of 2009, provides not only an update on progress toward goals — including metrics — but also a look forward at future initiatives.

The following are highlights from the report. Detailed information can be found on the report's website at

www.princeton.edu/reports/sustainability2009.

"As one of the world's foremost centers of climate science and as an institution committed to serving all nations, Princeton has a critical role to play in exploring the causes of climate change, evaluating its effects and developing solutions to the environmental, technological and socioeconomic challenges it represents. At the same time we also have an obligation to put our own environmental house in order — to practice what we preach. We can ourselves become a laboratory in sustainability, implementing best practices, testing new technologies and strategies, and reducing our environmental footprint in a way that complements — and furthers — our academic efforts in the environmental arena."

—President Shirley M. Tilghman



Greenhouse Gas Reduction

Princeton's primary greenhouse gas goal is to reduce direct campus emissions. The University seeks to achieve reductions through conservation, application of energy-saving technologies, renewable energy generation and behavior change. Highlights of the University's approach include reducing campus greenhouse gas emissions to 1990 levels by 2020 through local verifiable action and no purchase of offsets; and achieving these reductions despite having added 1.5 million square feet to the campus since 1990 and continuing to add square footage over the next 10 years.

Campus Energy

Plans & Progress

- Investing \$40 million over the next 10 years to reduce overall utility usage on campus by at least 25 percent through increasing the efficiency of the cogeneration plant and campus buildings.
- Decreasing emissions from July 2008 to July 2009 by nearly 1 percent, the first drop since 1996 and an initial step toward the goal of a 16 percent reduction.
- Increasing electricity usage by the campus only by 2.6 percent from 2007 to 2009, even with the addition of Sherrerd Hall, Lewis Library and Roberts Stadium, due to conservation efforts.

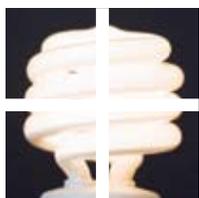
What's Next

- Continue to implement energy conservation measures in heating and cooling systems, such as motion sensors integrated with lighting as well as room heating and cooling systems.
- Identify the remaining 30 percent of the strategies needed to achieve the 2020 goal.
- Investigate the feasibility of pursuing local wind power as part of the University's renewable energy portfolio.
- Draft a campus Energy Master Plan to provide a coordinated effort to improve the efficiency of the cogeneration plant and the buildings it serves in order to reduce overall utility usage on campus by at least 25 percent.

Green Building

Plans & Progress

- Designing new construction and major renovations with the goal of pushing beyond 30 percent less energy cost than a standard off-campus building.
- Designing all projects to an equivalent of at least LEED Silver, including the new Chemistry Building, Butler College, Sherrerd Hall and the Neuroscience and Psychology Buildings.



- Using ground source heat pump ("geothermal") technology wherever cost effective.
- Applying Life Cycle Cost Assessment, including an internal CO₂ tax, to major building systems and materials options.

What's Next

- Apply refined and updated sustainable building guidelines to the design of all new projects.

Transportation

Plans & Progress

- Implementing a Transportation Demand Management (TDM) program to reduce the number of single-occupant cars coming to campus by 10 percent by 2020.
- Providing incentives to those using alternative transportation, with 300 campus community members participating since programs began in fall 2008.
- Collecting data on the campus fleet and replacing vehicles with lower emission alternatives; six electric vehicles have replaced internal combustion engine utility vehicles.
- Improving the campus shuttle system; 14 buses now run on 20 percent biodiesel; new routes have increased ridership and GPS tracking provides for maximum efficiency.
- Providing 100 bicycles for renting and loaning.

What's Next

- Continue to track data and improve and expand alternative transportation/vehicle programs.
- Implement a telecommuting policy.
- Invest \$2.2 million in a sidewalk network that will better connect graduate student and faculty/staff housing communities to the campus in order to encourage walking.

Resource Conservation

The Princeton Sustainability Plan commits the University to preserve green space, enhance rainwater collection and retention on site, manage stormwater through an ecosystem approach and integrate sustainability principles in all campus activities.

Dining

Plans & Progress

- Increasing sustainable food purchases from 36 percent in 2007 to 60 percent in 2009, including local (within 200 miles) food purchases from 27 to 45 percent; reducing and recycling food waste.
- Implementing “tray-free” dining in three of six dining halls.
- Sending all of food waste (851 tons in 2008) to a local pig farmer.

What's Next

- Expand local food purchases to 47 percent for fiscal year 2010 and expand sustainable offerings.
- Transition to tray-free dining across all six dining halls, the Center for Jewish Life and the Graduate College.
- Transition to a more sustainable food waste recycling system.

Purchasing

Plans & Progress

- 86 percent of departments complying with the 100 percent post-consumer recycled chlorine-free paper policy.
- Purchasing 100 percent Energy Star products whenever available.
- Purchasing 100 percent Green Seal certified cleaning products for highest-volume daily use cleaning products.
- Improving the sustainability performance of purchased goods and services through a Life Cycle Assessment (LCA) initiative to inform Princeton's purchasing decisions.

What's Next

- Increase departmental compliance with 100 percent recycled paper purchasing policy to 100 percent.
- Further develop techniques, such as LCA, to more effectively manage purchasing operations.

Waste & Recycling

Plans & Progress

- Increasing the household recycling percentage from 38 to 42 between 2007 and 2009, moving quickly toward the 2012 goal of 50 percent.
- Reducing landfill waste from 2007 to 2008 by 4 percent and, in the first six months of 2009, by an additional 7.4 percent compared to the same period in 2008.
- Purchasing 28 fewer tons of paper in 2009 than 2008 and implementing the Print Less initiative, encouraging the reduction of paper usage in the computer clusters.
- Expanding the Ecology Representative program.

What's Next

- Develop a more aggressive target for the recycling rate of debris left over from new construction from the current baseline of 70 percent.
- Propose the transition of EcoRep recycling and sustainability training modules in the Residential Education Program from voluntary to required for all new students.

- Complete 100 percent transition to handsfree foaming hand cleanser dispensers and to proportioning hand towel dispensers.
- Monitor the impact of the Print Less initiative and adjust the printing quotas as necessary to meet reduction goals.

Landscape

Plans & Progress

- Restoring the quality and capacity of the regional watershed, transitioning more than 1.15 acres of impermeable surface area into land that will allow water infiltration.
- Planting more than 10 acres of woodland, increasing low-maintenance wooded areas by more than 10 percent.
- Composting and reusing on site 100 percent of landscape trimmings.

What's Next

- Continue to analyze data, noting changes in open space and tracking use of pesticides, fertilizers and irrigation water.
- Complete the campus reforestation project, which will increase the amount of woodlands on campus by 10 acres by 2012 along the southern end of Elm Drive, near Whitman College and surrounding the new Chemistry Building (where 180 new trees will be planted).

Domestic Water

Plans & Progress

- Installing low-flow aerators, low-flow shower heads and dual-flush toilets in 100 percent of residence halls. Water use decrease is estimated at 25 percent — the 2020 goal (9 million gallons) for reducing water usage in the residence halls.
- Increasing water retention for environmentally beneficial purposes by, for example, the installation of a 5,000-gallon rainwater collection cistern at Butler College (completed in fall 2009) to supplement irrigation water; and a 12,000-gallon rainwater collection cistern at the new Chemistry Building (to be completed in fall 2010) to provide capacity to flush toilets.

What's Next

- Verify estimated water use reduction through low-flow fixtures in the residence halls.
- Continue to assemble and track irrigation data.
- Complete low-flow bathroom fixture replacements in athletic facilities and academic and administrative buildings.





Research, Education & Civic Engagement

While the University is committed to aggressively pursuing improvements in the sustainability of its operations, its greatest global impact derives from its commitment to research and education. Investing in faculty research and teaching, including initiatives that engage the campus as a laboratory for new ideas and encourage civic engagement, is the most effective way Princeton can use its resources to address sustainability issues such as the problem of global climate change.

Research & Education

Plans & Progress

- Broadening interdisciplinary participation, including more than a 150 percent increase in students receiving environmental studies certificates since 2002.
- Offering more than 50 courses that address sustainability by exploring some aspect of the intersection between the environment, economics and society.
- Increasing research opportunities through recent programs such as an extended joint research partnership between Princeton and energy company BP; 40 internships specifically related to sustainability; and a wide range of projects supported by the High Meadows Sustainability Fund.
- Instilling awareness in students regarding their responsibilities as global citizens through efforts such as 14 recent internships focused on international sustainability problems.

What's Next

- Expand opportunities in sustainability research and continue to offer public conferences and events to build awareness.

Student Initiatives

Plans & Progress

- Supporting 11 sustainability-related student groups and the development of new groups.

What's Next

- Find ways to achieve greater representation and attain goals shared across student environmental groups through the Princeton Environmental Network.
- Implement the Undergraduate Student Government campus-wide sustainability survey and pledge.

Campus Programs

Plans & Progress

- Promoting sustainable practices among University community members, including awarding funds through the High Meadows Foundation for 30 research, education and civic engagement projects.

- Partnering between the Office of Sustainability and other offices and groups to organize public events, such as the 2008 sustainability open house attended by 900 members of the campus and local community.
- Establishing research apprenticeships and internships for students in the Office of Sustainability; over the past three years, the office has had 22 undergraduate interns.

What's Next

- Continue outreach to engage more of the campus community.

Communication

Plans & Progress

- Expanding the discourse about sustainability on campus, in the local community and across the nation by sharing stories and multimedia about sustainability with campus and outside media; 75 sustainability stories completed in the last two years.
- Releasing the Sustainability Plan on the University website for broad discussion and following up with a brochure summarizing the plan.
- Training students to produce media stories through the Student Environmental Communication Network; 33 students have investigated the nuances of what is "green" and learned the technical skills to communicate them through podcast and video media since 2006.

What's Next

- Continue to document educationally valuable community actions in sustainability to share with broader audiences.
- Continue to use the Student Environmental Communication Network to increase the engagement of the undergraduate population with sustainability issues.
- Increase collaborations with outside organizations that have similar interests.

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