



Vision: Sustainability

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Share the Vision...

There are emerging opportunities for institutions of higher education to respond to current environmental and public health concerns. By setting institutional examples and modeling for others on how to prioritize sustainability as a grounding framework for decision-making and policy development, institutions of higher education have an opportunity to facilitate society's transition to a more sustainable future. Sustainability principles stem from an international consensus that the pursuit of economic viability as an end in itself, does not maintain or enhance ecological health and human well-being in the short or long-term.

In 2004 Yale strengthened its commitment to becoming a sustainable institution. The combination of the efforts of students, staff, faculty, and administrators coupled with the work of the recently established *Office of Sustainability*, has placed Yale at the forefront of the movement of Sustainability and Higher Education. In this short period of time Yale has established a long-term sustainability strategy and has many accomplishments that demonstrate the depth and intellectual engagement grounding this

institutional commitment. Some highlights of these successes include the following. Yale has embraced one of the most aggressive greenhouse gas reduction policies in the country [see below]; developed four campus-wide sustainability committees addressing issues of integrated waste management, transportation demand management, energy management and building, design and construction guidelines; begun to adapt sustainable procurement principles for items ranging from paper to electronic equipment; engaged with students in and out of the classroom as well as staff and faculty across the campus and much more.

The intention of *Vision: Sustainability* is to provide a new vehicle for communicating the multitude of sustainability activities at Yale. While many people are engaged in program specific dialogue and action across the campus, very few have the opportunity to recognize and experience the breadth of Yale's efforts which span from the power plant, the dining halls and the residential colleges to the classroom, the labs and the libraries. Please join Yale in its commitment to becoming a sustainable institution.

Yale sets greenhouse gas reduction targets

In October 2005, President Richard Levin announced Yale's commitment to a long-term greenhouse gas reduction and renewable energy strategy. He explained in an email to the university:

Yale is committed to a level of investment in energy conservation and alternate energy sources that will lead, based on current projections, to a reduction in its greenhouse gas emissions by 10% below our 1990 levels by the year 2020.

This strategy includes about 90% of Yale's emissions (those from Yale's power plants and purchased electricity), which totaled 160,000 metric tons of carbon equivalent (MTCE) in 1990. Under a "business as usual" scenario, Yale's emissions would

reach 380,000 MTCE (as compared to 147,000 MTCE under this reduction strategy) by 2020. Yale intends to reach this goal through a combination of a strong energy conservation program, investing in alternative energy sources, purchasing Renewable Energy Certificates, and implementing on/off-site renewable and clean energy projects. In addition, the university set two aggressive energy conservation targets:

- 15% reduction at residential colleges over a three-year period.
- 10% reduction at all other facilities.

Students, staff, and faculty all can play a role in helping the university reach these goals by taking steps to conserve energy.



Yale is working to reduce emissions from its Central Cogeneration Power Plant.

Energy conservation lights up colleges



Maren Haus, STEP Program Director, readies the CFL shipments for distribution to students.

Savings from the "Light 4 Light" Campaign:

⇒ 263,200 kWh/year

⇒ 86 metric tons of carbon equiv./year

⇒ Cost \$6,000 with 4 month pay back

2000 bulbs exchanged

Last fall, the Yale Student Taskforce for Environmental Partnership, better known as **STEP** initiated a bulb exchange, called the **Light 4 Light** Campaign. STEP distributed 2000 compact fluorescent light bulbs (CFL) to students in residential colleges in exchange for conventional 60-watt bulbs.

These 13-watt CFLs produce the same amount of light output or lumens as typical 60-watt incandescent light bulbs, but offer **nearly five times greater efficiency**. That type of efficiency translates into significant long-term energy and monetary savings. With their lower electricity needs (savings of 47 watts per bulb) and based on operation of 10 hours per day at 7 cents per kilowatt hour, these bulbs pay for themselves within four months. STEP will cut Yale College annual energy use by over 260 thousand kilowatt-hours.

Reduced electricity use also translates into indirect reductions in greenhouse gas emissions. This effort advances Yale's commitment to a long-term Greenhouse Gas Reduction Strategy, which includes a 15% reduction in residential college energy use over three years.

While visiting dorms, STEP helped students program the power management features on their computers and passed out magnets detailing what to recycle on campus. As Susanne Kenagy, one of the STEP founders explained: "People may not have the knowledge [on actions they can take]. Once they have it, they

apply it on a regular basis." STEP chairs concurred that it made them feel good to see what a difference they can make devoting an hour each week to the exchange.

Building on the success of the **Light 4 Light** Campaign, STEP launched **Yale Unplugged**, a campaign to remind students to unplug appliances, shut windows, and defrost refrigerators and lower heat before leaving for Spring Break. STEP coordinators sent a series of emails in the week leading up to break thanking students for energy conservation efforts that have led to a 9.1% reduction in energy use in the residential colleges and encouraging students to continue to conserve energy over break.

The campaign also included door-knocking on Old Campus before break to remind freshmen to unplug appliances. To further spread the Yale Unplugged message, coordinators slipped leaflet reminders under doors and chalked the pathways on campus. According to Tom Downing, Yale Senior Energy Engineer, these efforts helped contribute to a 10.6% reduction in energy use compounded with warmer temperatures over Yale's two week Spring Break. Students in the residential colleges have one more month to improve upon energy savings to be eligible for Renewable Energy Certificate purchases that will offset 2/3rds of residential college electricity use.



STEP Coordinator, Rachel Winer, (right) accepts an incandescent bulb from another student in exchange for a CFL with nearly 5X more efficiency.

Measuring change: *Yale sustainability metrics*

The Office of Sustainability has developed Sustainability Metrics that will enable Yale to determine its current state of the campus and benchmark progress into the future. Metrics reflect data that can be reported from year to year, such as total energy use per capita per year. Yale will be able to measure the successes and failures of adapted recommendations and policies on an annual basis while critically examining and evaluating the chosen course of action.

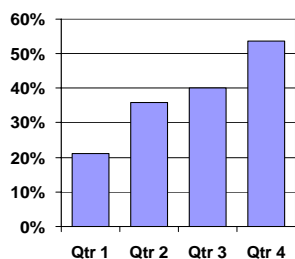
The Yale Sustainability Metrics are categorized into the following three groups, reflecting the Sustainability strategy and organizing principles at Yale.

- **Use of natural resources**
- **Systems and processes**
- **Sustainability and Culture**

The grounding framework for the Yale Sustainability Metrics stems from the sustainability indicators developed by other universities, the US government, and the United Nations. We have attempted to draw from these examples and tailor a framework appropriate for Yale. We were challenged to strike a balance between developing an exhaustive array of metrics and intentionally choosing the specific metrics, which lead to a cohesive and concise account of the current state of affairs. For more specifics on the metrics, visit www.yale.edu/sustainability.

Status of recycled paper purchasing

Growth in Percent of Departments Using 30% Recycled Paper in 2005



Department in collaboration with the Office of Sustainability, is collecting recycled paper usage data, which will be published on a quarterly basis. To date, about 54% of the campus is now ordering 30% recycled paper.

In August 2005, Yale committed to a new copy paper purchasing standard of 30% [post-consumer recycled content](#) with a long term commitment of using 100% recycled paper by 2008.

To track the amount of recycled paper used at the University, the Procurement

The School of Forestry and Environmental Studies currently orders 100% post-consumer office paper – already abiding by the 2008 recommendation.

As shown in the graph, the University showed considerable improvement in purchasing 30% recycled copy paper in 2005.

Spending on non-recycled paper decreased by nearly 50% in 2005.

Based on a survey conducted in November, Yale Procurement recognizes that staff would like to have easy access to more green purchasing information. To address this need, the Purchasing Department is in the process of making improvements to the Green Purchasing website (www.yale.edu/GreenPurchasing) and developing outreach programs and online training modules.

Green Fund Project Spotlight

Yale's [Advisory Committee on Environmental Management \(ACEM\)](#), composed of staff, faculty, and students, proposes long-term sustainability targets at Yale and administers the [Green Fund](#). The Yale Green Fund provides financial support for Yale community members willing to undertake projects to improve Yale's environmental performance. Proposals are solicited each fall, and applicants can apply for funds up to \$50,000 to work on their project for up to one year. Below are highlights from a few projects. For more information on ACEM or the Green Fund, visit www.yale.edu/sustainability/acem.htm or contact Bailey.Mccallum@yale.edu.

Spring Salvage

A joint Forestry and Public Health graduate student, Sara Smiley-Smith, and Public Health Ph.D. student, Dean Hosgood, are leading up an effort to improve the **Move-out recycling program at Yale**. With the help of a Green Fund Award, this Spring Salvage effort will involve the implementation of improved waste diversion practices. Changes will include increasing collection of large items, facilitating cooperation with custodial staff to increase waste diversion from student rooms, developing partnerships with undergraduate student groups to help improve communication of recycling options to students, and obtaining sorting and storage space for collected items in preparation for reuse.

These efforts will be undertaken by a team of undergraduate and graduate students guided by members of Yale Recycling, Yale Office of Sustainability, and Yale Office of Facilities. Successful implementation of these improvements will create a salvage program at Yale that dramatically increases the amount of reusable material diverted from the waste stream and builds partnerships to enhance Spring Salvage efforts in the future. The Spring Salvage team is currently aiming for a 50% waste reduction goal. Interested in supporting this effort? Contact Sara.SmileySmith@yale.edu or Dean.Hosgood@yale.edu.

Sustainability Master's Teas

The Sustainability Master's Tea, funded by the ACEM Green Fund and led by Caroline Howe of Saybrook College '07, is designed to create a greater environmental consciousness in the Yale community. The teas scheduled for the 2006 spring semester feature leaders from both the public and private sectors to discuss sustainability from the local to global level. These leaders include Scott Chasey, Author of *This Common Ground: A Year on an Organic Farm*; Gus Speth, Dean of the Forestry School; Vince Perez, Former Secretary of Energy of the Philippines, Eileen Claussen, Executive Director, Pew Center for Climate Change, and Jason Houston, documentary photographer. Visit www.yale.edu/sustainability for the complete schedule or contact Caroline.Howe@yale.edu for more information.



A glimpse of the disturbing amount of waste that made its way to the landfill last year as students rushed to move out.

“We need to work together to get the support of all interest groups when developing campus sustainability policies.”

-John Bollier, Associate Vice President of Facilities Operations

Campus-wide Sustainability Committees

Yale has established committees to focus on four key areas of campus-wide operations related to sustainability: energy, waste management, transportation, and building design and construction. This prioritization led to the development of an [Energy Task Force](#), [Integrated Waste Management Committee](#), [Transportation Policy Committee](#), and a [Sustainable Building Design and Construction Committee](#). These committees, with representation from students, staff, and faculty, were established to develop a baseline set of information, short and long term goals, and outline plans to achieve those goals.

Many projects are underway around campus as result of the efforts of these committees. Each committee's recommendations take into account funding that is realistic and feasible within Yale budgetary policies and constraints; best practices; projected institutional growth; local, state and national targets and regulations; and the teaching, research, and public service missions of Yale University.

In addition to these operation-specific committees, a [Marketing and Communication Committee](#), composed primarily of students with staff support, was established to oversee the development of the web site and provide insight into community outreach. During the 2005-2006 school year, this committee transitioned into a [Student Sustainability Leaders Forum](#), bringing together leaders of environmental groups on campus.

Energy Task Force

The leadership of the Energy Task Force led to the proposal of adoption of the University's greenhouse gas reduction strategy. The Energy Task Force continues to be responsible for assessing and making recommendations on issues that relate to energy production (from conventional to renewable), procurement, demand, emission reduction and conservation. The Committee remains supported by the work of four sub-committees: Renewable Energy, Education Outreach, Incentive-based programs and Base-load analysis. Recommendations specific to the Energy Task Force take into account: short and long-term energy needs on campus, complimented by the short and long-term costs/benefits of investment into clean and renewable energy production and consumption.



Integrated Waste Management

The Yale Integrated Waste Management Committee is responsible for making recommendations on the range of issues that relate to the production, disposal, reuse and management of solid, universal and hazardous waste generated on campus. This Committee has been focusing on Organic waste disposal, Electronic waste disposal, Recycling, and Integrated Waste Management models. This Committee is grappling with the challenge of developing and implementing waste reduction and management targets and strategies.



Transportation Policy

The Transportation Policy Committee convened to develop recommendations on a range of issues that relate to transportation demand management, including public transportation, parking, fleet management and alternative transportation. Committee recommendations will take into account: the transportation needs and desires of faculty, staff, students, and campus visitors; and mutual interests of Yale University and the City of New Haven with respect to transportation policy and infrastructure, in addition to funding, best practices, and Yale's goals (as discussed above).



Sustainable Building Design and Construction Committee

The Sustainable Building Design and Construction Committee is charged with the task of developing a set of university-wide guidelines for the design and construction of high-performance, long-term, and cost-effective facilities that support and advance the mission of the University while minimizing the impact on the environment and human health. The proposed guidelines will be developed for application at all levels of the design and construction process from planning to new construction to renovation.



Student Sustainability Leaders Forum

The Student Sustainability Leaders Forum, a group formed in Fall 2005, facilitates interaction between campus sustainability leaders in Yale College, the graduate schools, and the Office of Sustainability. The Forum promotes dialogue and resource-sharing among groups in order to achieve common goals for a sustainable campus.



Students sign on to clean energy

In November of 2005, New Haven Action (NHA), in collaboration with Yale Student Environment Coalition (YSEC) and Student Taskforce for Environmental Partnership (STEP), kicked off a clean energy campaign across Yale College. With an opening event in Calhoun College and tabling in dining halls and common areas of residential colleges, NHA asked students to sign the **Yale Student Energy Pledge** (www.yale.edu/energy) "to support a cleaner, more sustainable Yale." By signing the pledge, students make a personal commitment to conserve energy and help contribute to Yale's goal of reducing greenhouse gases by 10% below 1990 levels by 2020.

The Yale Student Energy Pledge encourages students to contribute to reducing energy use by 5% in their residential colleges. Once that goal is met, the University will purchase renewable energy certificates to cover one third of residential college electricity use. (A renewable energy certificate represents 1-megawatt hour of energy produced from non-fossil fuel based sources, such as wind, solar, biomass.) Students pledge to participate in efforts to meet this

goal by supporting electricity and fuel conservation measures during their day-to-day activities.

By signing the Energy Pledge, students agree to conserve and "support a cleaner, more sustainable Yale."

Through the pledge, students commit to:

- reduce the temperature in their suites by 3-5 degrees where possible,
- unplug appliances and lights when not in use and during school breaks,
- set the power management features on their computers,
- use Energy Star-approved appliances, and
- wash only full loads and use cold water where possible.

To date, **2081 students have signed the pledge**, 2061 of whom are undergraduates. This accounts for 44% of the undergraduate population at Yale. The campaign, which has relied primarily on tabling to gather pledges, will further develop an online component to reach students who have yet to sign on.

For more information about energy conservation at Yale or to sign on to the pledge, visit www.yale.edu/energy.



New Haven Action, STEP, and YSEC members rally together for the clean energy campaign kick-off.

New Sustainability Residential College Seminar



Students engage in lively discussion in this Thursday seminar.

This Spring Semester, Julie Newman, Ph.D., Director, Yale Office of Sustainability is teaching a unique residential college seminar course within Yale College sponsored by Berkeley and Jonathon Edwards, entitled: *Sustainable development & Institutional change (CSBK311)*. This course engages the students in an exploration of the principles of sustainable development as they relate to institutional change, decision-making processes, and systems thinking. Readings, discussions and assignments in the first half of the semester examined the origins, theory and grounding principles of sustainable development. During the second half of the semester, the students are studying the application of those principles to Yale University.

Campus Updates

Net Impact Campus Greening

Students at Yale's School of Management (SOM) have joined others from across the country in the Net Impact Campus Greening Initiative (CGI). The CGI began this winter to convene Net Impact chapters for discussions about campus sustainability. SOM students are exchanging ideas with CGI members from other campuses and looking into ways to use their business skills to help Yale's Office of Sustainability. Yale's own Julie Newman is serving as an advisor to Net Impact as it launches the CGI. Net Impact is a network of students and professionals "committed to using the power of business to improve the world." For more information, contact

Austin.Whitman@yale.edu.

STEP: It's So Easy Recycling Campaign

STEP, the Student Taskforce for Environmental Partnership has made tremendous progress in energized and educating students on sustainable living. The latest initiative: an It's So Easy recycling campaign. **New mixed paper recycling and recycling stations on Cross Campus** make recycling easier than ever before. Students and staff can recycle paperboard (e.g., cereal boxes), newspaper, office paper, magazines, envelopes, note cards, and sticky notes all in the same bin!

STEP's "It's So Easy" recycling campaign began on January 23. Outside dining halls, STEP coordinators passed out recycling bins to students while playing a mix of "It's So Easy" music. They also designed and handed out pins and clever posters. During the third week of the campaign, STEP complimenting the "It's easy as pie" part of its campaign by serving homemade pie (baked by the Yale Sustainable Food Project) on Cross Campus. STEP also encouraged students to donate clothes and linens for REACH OUT spring break trips. In the last segment of the campaign, STEP reminded students: "Midterms aren't easy, but recycling is!" For more information on STEP and recycling on/off campus, visit: www.yale.edu/step or www.yale.edu/recycling/.



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For Yale sustainability-related Events, News, Announcements, Links, and Tips for Taking Action, visit us on the web: www.yale.edu/sustainability

Upcoming Conferences

Northeast Climate Conference

The 4th Annual Northeast Climate Conference will be at **Yale** this year, **April 7-9, 2006** and will be sponsored by a number of Yale groups in addition to Climate Campaign, Energy Action, Sierra Student Coalition, and the Apollo Alliance. The organizers are expecting around 500 students who will be discussing climate change from multiple perspectives and hearing from full-time organizers, students from successful campaigns, administrators, politicians, and climate experts. In particular, the conference will address how to take the knowledge gained over the weekend to apply it effectively on a campus, state, or national level. For more information and to register, visit <http://www.climatecampaign.org/>.

Save the Date! November 2-4, 2006

For the **3rd Annual Northeast Campus Sustainability Consortium Conference** for College and University Sustainability Professionals committed to the *UN Decade of Education for Sustainable Development*, hosted by Yale University in New Haven, CT.

Join us to learn about campus sustainability initiatives in the northeast United States and eastern Canada; network with sustainability professionals, faculty and engaged students from the region; explore innovative solutions for your campuses; and advance the goals of the UN Decade of Education for Sustainable Development. This two day conference will be an engaging mix of plenary sessions, issues fora, and workshops.

The *Northeast Campus Sustainability Consortium* (NECSC) was established in October 2004 to support the goals of the UN Decade of Education for Sustainable Development by advancing campus sustainability action in the northeast. For more information on NECSC, contact Julie.Newman@yale.edu.



Office of Sustainability Student Research Assistants:

Top row: Dominic Albino, Deanna Lekas, Lisa Bassani, Sara Smiley-Smith, Christopher Clement, Caroline Howe, Bailey McCallum,

Bottom row: Meleah Houseknecht, Maren Haus

Not pictured: Dustin Cho, David Manor, and Jules Opton-Himmel.