

2010 ENERGY STAR Awards application—University of New Hampshire

University Office of Sustainability

December 4, 2009

I. Background

The University of New Hampshire—Durham (UNH) signed the American College & University Presidents Climate Commitment (ACUPCC) and has pledged to reduce campus greenhouse gas emissions 80% by 2050 and ultimately to achieve climate neutrality by 2100. President Mark Huddleston also asked the UNH community to reduce its energy costs by 5% a year.

To reach these goals, UNH has created energy conservation programs across campus as part of its Climate Action Plan, WildCAP. The goals are to: maximize emissions reductions as soon as possible to reduce climate impacts, maximize cost savings through reduced energy consumption, develop a plan with broad-based support across the UNH community to ensure smooth implementation, invest in energy saving projects, participate in energy-saving behavioral changes, maintain UNH's leadership position in campus climate action, develop opportunities to highlight UNH climate action to internal and external stakeholders and funders and integrate operational and behavior savings efforts with existing or new curricula and research where possible.

For example, the UNH community has a campus-wide Energy Efficient Production Standard in place for UNH employees since 2006, and the Student Senate passed an ENERGY STAR® Resolution in spring 2009 strongly encouraging students to purchase products that meet the specifications of the U.S. Environmental Protection Agency's Energy Star Program. UNH has committed to strengthen the Energy Efficient Product Standard as part of the ACUPCC.

II. Management Practices

Sustainable Buildings at UNH

As part of UNH's commitment to being a *Climate Protection Campus*, UNH is as sustainable as feasible in its construction and renovation of buildings. Our comprehensive approach targets high impact intervention areas to reduce greenhouse gas emissions as well as impacts on biodiversity and cultural continuity.

U.S. EPA ENERGY STAR Residence Halls: In May 2006, UNH was the first institution of higher education in the nation to receive ENERGY STAR® ratings for residence halls. And in 2007, five more UNH buildings achieved the U.S. EPA ENERGY STAR® efficiency rating, bringing UNH's total number of ENERGY STAR® rated buildings to 8. These awards were presented by EPA New England Administrator Robert Varney at UNH's 2007 Earth Day Celebration. What's more, UNH Housing performs energy efficiency improvements as part of all major residence hall renovation projects. Recent extensive upgrades in these residence halls are saving UNH nearly \$80,000 per year compared to an average dorm in the United States. Compared to average performing residence halls of similar size, Congreve, Lord and McLaughlin Halls are preventing pollution equivalent to taking more than 100 vehicles off the road for a year—more than 65,000 gallons of gasoline.

Highlights include:

Sustainable Design: As part of the American College & University Presidents Climate Commitment, UNH-Durham is committed to having all new campus construction and major renovation projects achieve U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Silver standards or equivalent; this policy will be applicable to all new projects initiated after UNH design and construction building

standards have been modified in 2008. UNH Design Guidelines used by UNH Facilities Design and Construction require that designs use energy efficient systems and components and consider environmental impacts.

Sustainable Renovations: The 2008 renovation of DeMeritt Hall on the UNH Durham campus is a perfect example of this. Though not registered with LEED, designers Architerra Inc. say that DeMeritt Hall is comparable to a Silver LEED building. What's more, the renovation of James Hall (to be completed in December of 2009), which not coincidentally houses the departments of natural resources and earth sciences, will include designs and renovation that facilities energy efficiency, emissions reduction, water conservation, and beyond. The James Hall Renovation has been officially registered with the U.S. Green Building Council (USGBC) to seek LEED Certification.

Energy Efficiency: Ranked by the U.S. Department of Energy's Oak Ridge National Laboratory (ORNL) in the top 5% of universities in its peer group for energy efficiency and by the Association of Higher Education Facilities Officers in a 2006 survey of over 100 universities as one of the most energy efficient four-year colleges with graduate programs through the post-doctoral level, UNH has conducted an on-going energy efficiency program for over 30 years. All 204 buildings on campus are followed for energy and water consumption (some with the ENERGY STAR® Portfolio Manager). If we consumed energy at the mean rate for our peer group, we would have spent over \$20 million for energy during Fiscal Year 2006; because of our ongoing energy efficiency programs, we actually spent only FY06 \$13 million, resulting in a yearly savings of \$7 million.

How do we keep energy usage on campus at such a low rate?

1. ***Efficient Lighting:*** UNH has used energy efficient compact fluorescent lighting

(CFL's) for several years. In combination with T-8 and T-5 fixtures, UNH uses CFL's as a matter of routine on new construction and major renovation projects. UNH has also done some specific lighting upgrade projects using this technology. It is UNH Facilities policy to remove all incandescent lighting through attrition and replace this lighting with CFL's. What's more, no new purchases of incandescent bulbs (unless specific conditions are required that cannot be attained through CFL's) are allowed.

2. ***Efficiency Retrofits:*** Several million dollars have been invested in retrofit projects across the UNH Durham campus, including high efficiency lighting, motor, heating, and cooling, control systems; window upgrades; conversion of electric clothes dryers to natural gas dryers in residence halls; and conversion of domestic hot water conversions from electricity to natural gas.

3. ***Proper Use of Equipment:*** Just installing energy efficiency equipment is not enough to save energy, however. UNH Facilities staff play a crucial and role in properly maintaining and operating systems and equipment.

4. ***Use of hand dryers in restrooms:*** Electric hand dryers in restrooms are our campus standard for new construction and renovation. Even taking the energy used into consideration they are usually more economical than paper towels and more sanitary. Unfortunately, to retrofit restrooms whose buildings are not undergoing renovation is an expensive undertaking and cannot be accomplished all at one time. However, UNH is working to escalate retrofits from paper towels to hand dryers where feasible.

5. Education and outreach on climate and energy:

For example:

- a. Student Energy Waste Watch Challenge,
- b. annual Thanksgiving and Winter Break Powerdown campaign,
- c. ENERGY STAR® discounts for UNH students and parents,
- d. a virtual energy efficient ENERGY STAR® dorm room. See http://www.sustainableunh.unh.edu/climate_ed/vdorm/virtual_dorm.html.

UNH ENERGY STAR® Discount

The Office of Sustainability at UNH has coordinated an ENERGY STAR® discount program with Best Buy and MicroFridge, where students can receive a 10% discount on all ENERGY STAR® appliances at Best Buy in Newington, NH and they can purchase ENERGY STAR® MicroFridge units without having to pay the \$129 shipping fee. Anyone with proof of enrollment at UNH (student ID, tuition bill, class registration, etc.) can get a 10% discount on ENERGY STAR® qualified appliances and electronics at Best Buy® Newington, NH.

Steps for UNH students and parents to take advantage of this UNH/Best Buy partnership.

1. Print the UNH ENERGY STAR® Discount postcard (PDF) and take it with you to Best Buy® Newington, NH.
2. Find qualified appliances and electronics with the ENERGY STAR® logo.
3. Show your proof of enrollment and postcard when you purchase your items to get the 10% discount.

ENERGY STAR® Showcase Dorm Room

UNH is showcasing an ENERGY STAR® residence hall room to further promote the use of energy efficient appliances on campus. The ENERGY STAR® showcase residence hall room will serve to educate the UNH community, be advertised online, and be toured by visiting parents and prospective students. A study comparing the energy demands of the ENERGY STAR® showcase room and a Non-ENERGY STAR® room will be conducted.

Student Involvement: Students who agree to participate in the ENERGY STAR® showcase residence hall room will be given ENERGY STAR® appliances by Best Buy™ to use for the full academic year beginning in the Fall 2009 and ending in the Spring 2010. Please see a list of appliances to be provided free of charge below:

- Compact Refrigerator
- LCD Screen TV
- 2 Laptop Computers
- Blue Ray player
- CFL bulbs for desk and floor lamps along with energy-saving power strips

The students will be able to keep the laptop computers and Best Buy™ will provide new laptops for the an ENERGY STAR® showcase room the following year. The LCD Screen TV and the refrigerator will not be replaced and will be returned in good condition so they may be used for an ENERGY STAR® showcase residence hall room the following year. If students wish to participate for another year, the program will be evaluated and a new agreement will be reached with all partners involved.

As participants in the ENERGY STAR® showcase residence hall room, students will be expected to be available for campus tours during the University Open House dates on Saturday, October 3rd and October 31st, and on a few Saturday tour dates that will be

determined in the fall. In the Spring, students will need to be available for 2 or 3 of the Admitted Student Visit Days for all college divisions in June and a couple of other tour dates still to be determined. Laminated signs will be supplied to students by the University Office of Sustainability and the Energy Office that explain the ENERGY STAR® program to tour groups and should be displayed by the students during all tour dates next to the appropriate ENERGY STAR® appliances.

Also, a study will be conducted that will require data loggers to be placed by the Energy Office in the residence hall room outlets to record energy usage. The Energy Office will gather data throughout the year and the University Office of Sustainability will generate a report comparing energy used in the ENERGY STAR® showcase residence hall room to a non-ENERGY STAR® residence hall room. Residential Life and the Energy Office will work together to select the non-ENERGY STAR® room and to install data loggers.

Lastly, photos of the ENERGY STAR® showcase residence hall room will be posted on all participating departments' websites (i.e., Admissions, Residential Life, Housing, Energy Office and University Office of Sustainability). The students living in the ENERGY STAR® room will write narratives detailing why they chose to participate in the ENERGY STAR® showcase residence hall room and their experiences giving tours and participating in the promotion of ENERGY STAR® products.

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Also see “ENERGY STAR® Showcase Dorm room” in previous section as well as the University Office of Sustainability website which provides a wealth of information on our energy efficiency programs to the campus community and the larger Durham community: http://www.sustainableunh.unh.edu/climate_ed/index.html.