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# UNH Reduces Greenhouse Gas Emissions By Five Percent In Fy '05, Report Finds

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## UNH Reduces Greenhouse Gas Emissions By Five Percent In Fy '05, Report Finds

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**Editors and reporters: The 2004 – 2005 UNH Greenhouse Gas Emissions Inventory Update is available at**

[www.sustainableunh.unh.edu/climate\\_ed/greenhouse\\_gas\\_inventory.html](http://www.sustainableunh.unh.edu/climate_ed/greenhouse_gas_inventory.html)

DURHAM, N.H. -- The University of New Hampshire (UNH) reduced its greenhouse gas emissions (GHGE) by five percent from Fiscal Year 2003 to Fiscal Year 2005, according to the UNH Office of Sustainability's Greenhouse Gas Emissions Inventory that tracks UNH's greenhouse gas footprint. UNH prepared the 2004 – 2005 UNH Greenhouse Gas Emissions Inventory Update as part of its commitment to being a climate protection campus that integrates the ethics, science, technology and policies of greenhouse gas emissions into its community identity and practices.

UNH reduced its GHGE -- despite increases in the student body and infrastructure -- by taking public transportation like WildCat Transit, powering down computers and electronics, retrofitting buildings with energy-efficient lighting and fixtures, and composting and recycling, among other initiatives. In addition, ongoing and future efforts will reduce UNH's GHGE by approximately 40% and place the University well within the goal of reducing emissions to 50,306 metric tons of carbon dioxide equivalents (MTCDE) by 2010 – a goal of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

"As a climate protection campus, UNH continually strives to increase energy efficiency and cost savings while reducing emissions," said UNH interim president J. Bonnie Newman. "We will continue to build on these efforts in order to expand our leadership as a regional model that integrates the principles and practices of sustainability throughout our curriculum, operations, research, and engagement efforts."

"The 2004 – 2005 UNH Greenhouse Gas Emissions Inventory Update demonstrates that today and into the future, UNH is leading the way in implementing technological, structural, curricular, and cultural solutions to the regional and global challenges of reducing greenhouse gas emissions and using energy wisely," said Tom Kelly, Director of the UNH's Office of Sustainability, which prepared the report.

Some of UNH's energy conservation and emissions reduction accomplishments through 2005

include:

- **Expansion of the UNH transit system.** In fiscal year 2005, Wildcat Transit ridership grew by 72%, the equivalent of removing 754 cars from the road. Wildcat Transit is one of New Hampshire's two largest public transportation systems.
- **Educational campaigns for faculty, staff, and students on energy conservation.** The campus-wide educational campaign on "powering down" computers and other electronics during the 2005 winter break saved UNH \$20,000 in energy costs and prevented the greenhouse gas emissions equivalent to taking 30 cars off the road for one year.
- **Infrastructure improvements in buildings across campus, including lighting retrofits and the installation of low-flow water fixtures.** In May 2006, three UNH residence halls were awarded the U.S. Environmental Protection Agency's first Energy Star Building Award for residence halls in the country. UNH is also ranked in the top 5% of universities in its peer group for energy efficiency by the U.S. Department of Energy's Oak Ridge National Laboratory.
- **Increased use of practices that offset emissions.** Offsets are emissions "credits" achieved through any practice or process that removes carbon from the atmosphere; they are essentially "negative" GHGE. UNH's forest preservation, composting, and recycling programs reduced the university's GHGE total by 1,861 MTCDE in 2005, accounting for 51% of the decrease in GHGE UNH achieved between 2003 and 2005.
- **Establishment of the UNH Energy Task Force (ETF).** The ETF has faculty, administrative staff, and undergraduate and graduate student members from a wide variety of departments and offices on campus and is charged with developing immediate and future actions to reduce energy costs and emissions, improve energy conservation, and promote educational and outreach programs intended to increase awareness of and behaviors around energy use, efficiency, greenhouse gas emissions, and climate change.
- **Successful second year of WildCAP.** Working with local community partner Houghton's ACE Hardware of Durham, Lee, and Newmarket, UNH sold parents, students, faculty, staff, and local Durham community members more than \$4,600 worth of Energy Star and energy efficient small appliances and electronics. The number of energy efficient compact refrigerators purchased through WildCAP in 2006 (instead of non-energy efficient compact refrigerators being purchased) was the equivalent of preventing more than 9,600 pounds of carbon dioxide from being emitted.

Other 2004-2005 UNH Greenhouse Gas Emissions Inventory Update highlights:

- Total greenhouse gas emissions (GHGE) for fiscal year 2004: 72,042 metric tons of carbon dioxide equivalents (MTCDE). Total GHGE for fiscal year 2005: 68,324 MTCDE.
- Approximate UNH sources of GHGE for 2005: 48% stationary sources (e.g. heating); 35% electricity; 17% transportation; less than 2% from agriculture, solid waste disposal, and refrigerants.
- Recycling of light iron, electronic waste, glass, plastics, and 630 tons of paper prevented the release of 17,000 MTCDE.

- Use of compressed nature gas, a clean burning fuel, by the UNH vehicle fleet increased from 1,200 therms in 2004 to 19,000 therms in 2005.

While UNH's reduction of its GHGE is good news, the report shows a historic average 1.8% increase in campus greenhouse gas emissions from 1990 to 2005 due to growth of the student body and campus infrastructure. Several ongoing and upcoming energy and climate related initiatives will significantly reduce the University's emissions beyond the 5% decrease achieved between 2003 and 2005, however. Among them:

- **Establishment of a combined heat and power facility or cogeneration plant.** Now online and scheduled to be operating at full capacity in 2006, the cogeneration plant retains waste heat normally lost during the production of electricity. Once operating at the full capacity, the plant will reduce UNH's GHGE by approximately 40% by 2010 - almost three times below what is called for in the Kyoto Protocol. The plant will also reduce UNH's emissions of sulfur dioxide by approximately 914 tons and nitrous oxides by approximately 137 tons, along with saving UNH approximately \$30 to \$40 million in energy costs over twenty years.
- **Expansion of the use of alternative fuel and clean technology options in UNH's transit and non-transit fleets.** By the end of 2006, UNH will have added to its vehicle fleet six compressed natural gas shuttle buses, the University's first all-electric non-transit vehicle, and over \$2 million worth of low-emission diesel transit buses that the University is committed to fueling with 20% biodiesel (B-20). In August 2006, UNH President Newman, New Hampshire Governor John Lynch, and officials from the New Hampshire Department of Transportation (NHDOT) officially opened a new NHDOT biodiesel fueling facility on the UNH Durham campus. The opening of this site marks the first use of biodiesel by DOT and UNH vehicles.

The UNH Greenhouse Gas Emissions Inventory Series is adapted from the guidelines of the Intergovernmental Panel on Climate Change (IPCC), a panel of more than 2,000 international scientists organized in 1998 by the World Meteorological Organization and United Nations Environment Programme. Emissions of greenhouse gases are calculated according to their ability to trap heat, which is captured by a specific Global Warming Potential (GWP) for each gas and then reported in conventional units of Metric Tons Carbon Dioxide Equivalents (MTCDE). Since the greenhouse gas carbon dioxide occurs in the largest concentrations in the atmosphere, MTCDEs indicate the contribution of each greenhouse gas contributing to climate change using the standard of Carbon Dioxide Equivalents (CDE).

The UNH Greenhouse Gas Emissions Inventory series is part of UNH's Climate Education Initiative, a program overseen by UNH's Office of Sustainability ([www.sustainableunh.unh.edu/climate\\_ed](http://www.sustainableunh.unh.edu/climate_ed)). The Climate Education Initiative is a university-wide effort to establish UNH as a climate protection campus that integrates the ethics, science, technology, and policies of greenhouse gas reductions into the University's curriculum, operations, research, and engagement efforts.