

## Wood Heat and Power at Mount Wachusett Community College

Over the past five years, the Mount Wachusett Community College (MWCC) in Gardner, Massachusetts has become recognized as a global leader in promoting and demonstrating renewable energy technologies. Scientists, foresters, and politicians from many countries have visited to see the wood-chip boiler that was installed in 2002 to replace an expensive all-electric heating and cooling system. This biomass unit was funded in part by the US Department of Energy and the Massachusetts Technology Collaborative, and was facilitated by technical assistance from the Marketing and Utilization Program of the Department of Conservation and Recreation (DCR) and other state agencies.

By switching to wood heat, the college has saved more than \$270,000 dollars per year and greatly reduced their carbon footprint. These economic and environmental savings are impressive, but it is only one of the many energy efficient components that have been implemented by MWCC over the past few years. Other technologies include energy-efficient lighting, variable frequency drives for air-handling units, and a domestic hot water heat exchanger. In total, these conservation measures have reduced consumption by 3.3 million kWh, which is enough electricity to power 1000 homes for a year.

***In the past three years, MWCC has reduced their greenhouse gas emissions by 18.5%. The college intends to achieve a 25% reduction by 2012.***

In addition, the college recently installed a 50 kW downdraft gasifier (BioMax 50™) produced by the Community Power Corporation (CPC) of Littleton, Colorado.



*Rob Rizzo, Director of Renewable Energy Studies at MWCC stands next to the 8 MMBTU wood fired boiler that replaced an expensive electric heating and cooling system.*

Using wood chips as the feedstock, this system will provide heat, air conditioning, and electricity for the college's daycare center. This gasifier represents the cutting edge of renewable energy and it is the only such unit in operation today in the United States.

By promoting wood energy in Massachusetts, MWCC is supporting the local economy, improving regional forest health by providing markets for low-grade wood, reducing greenhouse gas emissions, and reducing our national dependence on fossil fuels.

With funding from the USDA Forest Service Wood Education and Resource Center, and Rural Development Through Forestry Program, the DCR has begun an educational effort to promote the utilization of biomass energy in Massachusetts. Institutions like the Mount Wachusett Community College serve as real-world examples of where wood can satisfy the heating and electrical needs of businesses, institutions, and municipal facilities.