The Green Campus
MIDDLEBURY SETS THE STANDARD FOR SUSTAINABILITY

The Middlebury College campus is a learning laboratory for environmental studies. Students and faculty work together to investigate environmental problems, devise solutions, and take action to implement them.

Our efforts to create a sustainable living and learning community have resulted in carbon dioxide reduction and energy savings through improved efficiency, greater use of renewable energy, local purchase of food and other products, and reductions in pollution and use of harmful chemicals on campus. Those same steps have enabled Middlebury College to save money and increase community pride and morale.

The College has achieved a gold rating for sustainability from the Association for the Advancement of Higher Education based on its Sustainability Tracking Assessment and Rating System (STARS). The system measures an institution’s progress toward sustainability in three principal categories: education and research; operations; and planning, administration, and engagement.

BECOMING CARBON NEUTRAL

Efforts to reduce Middlebury’s carbon footprint began in 2002 and were reinforced by a 2004 trustee resolution to lower carbon emissions to 8 percent below 1990 levels by 2012. In 2006, at the urging of students, the trustees raised that goal, challenging the campus community to achieve carbon neutrality by 2016. Since then, our carbon emissions have been cut by about 50 percent.

The principal steps the College is taking to reduce its carbon footprint are: switching to renewable fuels; improving efficiency and conservation of energy and other resources; educating the campus community to increase awareness of sustainability issues and carbon-reduction

BY THE NUMBERS

- 50% reduction in Middlebury’s CO2 footprint as result of the biomass plant
- 70% reduction in FY13 in #6 fuel oil
- 1.4 million fewer gallons purchased in FY13
- $2 million savings in fuel costs in FY13
- 340 tons of food waste composted annually
- 66% landfill diversion rate through recycling
- 838 tons of material recycled annually
measures; and adopting new technologies as they become available and feasible. Using carbon offsets (buying into someone else’s carbon-reducing projects) is not a significant part of Middlebury’s plan to achieve carbon neutrality. Carbon offsets will be purchased only to balance any marginal carbon emissions that cannot be eliminated or offset by changes on campus.

The first 50 percent: Burning fuel oil for heating accounted for 79 percent of the College’s carbon-dioxide emissions in 2006, so it was obvious that major reductions had to be made there. A new $12 million biomass gasification plant went online in 2009, fueled by locally produced woodchips. The new heating plant cut the annual use of #6 fuel oil significantly (saving 1.4 million gallons in FY13) and reduced overall carbon emissions by 50 percent. It saved Middlebury $2 million in fuel cost in FY13, while putting nearly a million dollars of new money into the local forest-products economy.

The remaining 50 percent: The next big step toward carbon neutrality is already in progress. The College has signed a contract to purchase biomethane gas from a local energy company to replace the 600,000 gallons of fuel oil that is still burned each year for heat. The gas will be produced on a local dairy farm, where an anaerobic digester will convert manure into gas, fertilizer, and bedding for animal stalls. Like the wood chips used in the biomass gasification plant, biomethane is a carbon-neutral fuel. When it is burned, the global-warming effect of the cow manure is reduced by 95 percent. And by using it, the College will benefit the farmers who will be paid for the manure.

Other measures, such as energy conservation, upgrading buildings, using wind and solar power, and reusing and recycling waste, are also helping to move the College toward its goal.

BUILDING A GREEN CAMPUS
Middlebury has been working to improve sustainability on campus for more than two decades with guidance from the Environmental Council. The council works on policy and outreach efforts related to management of College lands, environmentally preferred purchasing, energy, transportation, food, and carbon neutrality. It also awards grants to members of the college community for sustainability projects. These resources have given students, faculty, and staff an opportunity to create and participate in more than 70 projects that further Middlebury’s sustainability goals.

The Office of Sustainability Integration develops and coordinates Middlebury’s sustainability initiatives. It guides the College in achieving high recycling rates, energy efficiency, and local-materials sourcing in its new buildings, pulling together all environmental activities on campus and beyond to bring sound practices to projects and institutional goals. It also conducts an annual greenhouse gas inventory, tracking the College’s carbon dioxide emissions and progress toward carbon neutrality.

The College has adopted sustainable-design guidelines for buildings based on the U.S. Green Building Council LEED (Leadership in Energy and Environmental Design) silver criteria. New College buildings incorporate local and recycled-content materials, passive solar designs, and other sustainable features. When feasible, older buildings, such as McCullough and Proctor, have received major efficiency upgrades.

The Franklin Environmental Center at Hillcrest and the newly renovated president’s house are both LEED platinum-rated buildings. The new squash facility and the field house that is currently under construction will also be LEED certified in 2014.

Building with energy efficiency and human health in mind pays off. For example, the new field house will be 80 percent larger than the facility it replaces, but it will use only about half as much energy. The Franklin Environmental Center has realized similar savings and is a favorite place for students to study because of its appealing indoor environment.
THE FRANKLIN ENVIRONMENTAL CENTER

When looking for a suitable building to house its environmental programs, Middlebury decided to create a model of resource conservation and energy efficiency by repurposing the 1875 Vermont farmhouse known as Hillcrest House. Completed in June 2007, the Janet Halstead Franklin ’72 and Churchill G. Franklin ’71 Environmental Center at Hillcrest serves as the hub of environmental leadership and learning at Middlebury.

The building was the first in Vermont to achieve a LEED (Leadership in Energy and Environmental Design) platinum certification from the U.S. Green Building Council and the seventh in the nation under LEED NC 2.2 standards. Local materials, lumber certified by the Forest Stewardship Council, groundwater-exchange air conditioning, energy-efficient windows and lights, low-flow faucets, abundant natural light, and solar panels are just a few of the building’s sustainable features.

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RECYCLE, REUSE, AND COMPOST

Middlebury has long been a leader in the wise use of resources. This applies both to the careful stewardship of our land and to everything we use on campus. The College runs its own recycling center and compost operation, which keeps more than 66 percent of our waste out of the landfill and turns nearly all food waste into more than 340 tons of compost annually.

The College’s building-deconstruction policy ensures that most of the material from old buildings is reused and recycled. For example, when the Bubble that served as a temporary field house for more than 10 years was removed to make room for the new field house, it was disassembled and moved to nearby Castleton State College, where it has been put back into service as a field house.

VALUING THE ECOLOGY OF THE LAND

Land is more than real estate, and the College recently completed a thorough assessment of the ecological and natural assets of the 6,000 acres it owns in Addison County. This assessment was undertaken to guide decisions about how to use the land. Knowing the natural communities and ecologically significant features of each parcel and how they relate to one another enables the College to make responsible choices about what to do with the land it owns. It also helps the College to be a better steward of its many ecological assets.

Trustee Emeritus Willard T. Jackson ’51 recently gave Middlebury 378 acres of land bordering the main campus to the west. This represents the largest gift of land the College has received since 1915, when Joseph Battell bequeathed 30,000 acres in Ripton, Vermont. Larger than the main campus of 350 acres, the new tract includes a diverse landscape of fields, woodlands, and wetlands that have been ecologically managed for many years.

The College will use this extraordinary gift to strengthen its environmental leadership through continued good stewardship, while making the land available for use in teaching and research.
STRENGTHENING THE FOOD SYSTEM

Middlebury is committed to using fresh, local food in the dining halls. Buying local not only supports the regional farm economy, it also cuts our share of the fossil fuel and carbon dioxide produced by the food-shipping industry.

Dining Services buys food from nearly 50 Vermont producers. The College also buys produce from the student-run organic farm.

Middlebury participated in the national Real Food Challenge this year. Four winter-term student interns analyzed a month’s worth of food purchasing receipts to assess whether food bought was local, ecologically sound, fair trade, or humane. The analysis showed that 20 percent of all food purchased in October 2013 met one or more of those four criteria.

GREEN FUNDS

In 2007 the College established the Green Funds, a family of endowed and expendable funds that give alumni, parents, and friends an opportunity to join in Middlebury’s sustainability efforts. From stewardship of College lands to experiential programs for students, the Green Funds keep Middlebury a leader in sustainability practice and education.

The funds allow Middlebury to promote sustainability on campus and around the world through lectures, campus events, and support for programs. Examples include the Sustainable Study Abroad Grants (for student research projects or participation in events or projects related to sustainability issues in host countries) and the weekly Howard E. Woodin Colloquium Series.

Among the projects that have been funded by Green Funds grants are: establishing a community bike shop; studying the wind power potential at the Snow Bowl; developing the organic farm; creating an inventory of campus trees; and creating biodiesel fuel from waste vegetable oil generated by Dining Services.

BILLION DOLLAR CHALLENGE

In 2011, Middlebury joined 32 other colleges and universities in launching the Billion Dollar Green Challenge. Participating institutions (the number now stands at 41) plan to invest a total of $1 billion in revolving loan funds to finance energy-efficiency upgrades on their campuses.

Middlebury’s fund, named the Green Revolving Loan Fund, was started with an initial $300,000 anonymous donation. Ultimately the fund will total $1 million, with the College raising the remainder from a combination of donations, capital budget allocations, and endowment investments. Students, faculty, and staff are encouraged to submit applications for any energy- or resource-conservation projects that will produce sufficient savings to pay the loan back in seven years or less.

The first loan from the Green Revolving Loan Fund went to the Middlebury student chapter of the U.S. Green Building Council. The 78 students used data collected by motion and light sensors to calculate how much electricity was being wasted in campus laundry rooms when lights were left on. They received an $1,800 loan to install motion sensors in laundry rooms, which will save the College nearly $350 a year.

MORE SAVINGS, LESS CARBON

Middlebury has taken a number of steps to reduce both the cost and the carbon emissions associated with the use of electricity. The most cost-effective way to do that is through increased energy efficiency. Over the past 10 years, the College has invested $1.7 million in energy-efficiency projects that have yielded a total savings of nearly $500,000 a year.

As a result of research done in the classroom and advocacy by the students who did it, the College was persuaded to install a 147 kW solar farm on campus. In 2013, that facility produced 223,500 kW hours of electricity, which is more than enough to supply a large dormitory like Forest Hall for a year. The College is also a partner in a 500 kW solar project in the town of Middlebury. Electricity generated by that plant will be credited to the Middlebury College Snow Bowl through the purchase of carbon offsets from Vermont-based Native Energy. The Snow Bowl is also the first carbon-neutral ski area in the country through the purchase of carbon offsets from Vermont-based Native Energy.

Printed on 100 percent recycled paper.

The biomass plant is a key factor for Middlebury in achieving carbon neutrality.