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CAMPUS ecology®

Middlebury College
Middlebury, Vermont
Energy

SCHOOL

Middlebury College is a 4-year private college with 2,400 students in Middlebury, Vermont.

ABSTRACT

In January 2012, Middlebury College announced plans to build a solar farm consisting of 34 solar trackers from AllEarth Renewables, a company based in Williston, VT. AllEarth manufactures the innovative solar energy systems, called AllSun Trackers, that feed electricity into nearby power lines. This array will produce an average of 200,000 kilowatt-hours annually, and adds to our renewable energy portfolio, which consists of our biomass plant, a wind turbine, smaller installations of solar panels, and numerous efficiency projects over the past decade. The 143 kW installation is located on about 1.5 acres of college land on Route 125, west of McCardell Bicentennial Hall, Middlebury's science facility. Students provided the initial impetus and research behind this project, which continues to demonstrate the importance of student interest and action with sustainability on campus.

GOALS AND OUTCOMES

Goals

Middlebury's solar tracker project aims to produce clean energy while it earns revenue for the school and provides a source of leaning and research for students. The solar trackers are expected to produce renewable PV electricity equivalent to the usage of one of the college's residence buildings the size of Battell Hall, which houses nearly 250 students. The system is expected to net the college about $5,000-$10,000 a year through the 5-6 year lease.

Accomplishments and Outcomes

The solar trackers are installed and have been producing PV electricity successfully since April 2012. In the first five months of operation the College has netted about $1,000 per month. This is a long-term project and we will continue to measure the success and financial return in the upcoming years. At the end of our five year lease agreement with AllEarth Renewables, a study will assess the costs and benefits of the solar farm, which will inform the decision as to whether we buy or return the trackers.

Changes in Vermont legislation surrounding costs and revenues associated with renewable energy affected the timeline of the project. The project followed close behind The Vermont Energy Act of 2011, which provides financial incentives from utility companies for customers who use solar power.

Challenges and Responses

Balancing the interests of students and administration while also recognizing the importance of input from utilities, farmers, landowners, neighbors, and manufacturers presented a significant challenge throughout the process of implementing the proposal. As a result, a great deal of negotiation and close

consultation took place demanding time and energy from all parties involved. In the future we anticipate more challenges and questions such as, how will the solar trackers be maintained over a long period of time? What is the most sustainable use of the land where the solar trackers are currently located?

Campus Climate Action: Your School's Carbon Footprint

Middlebury set a goal in 2007 to reach carbon neutrality by 2016, a campus objective that has been largely driven by student initiated ideas and projects. The introduction of solar energy reduces our carbon emissions by providing a significant source of alternative renewable energy.

Commentary and Reflection

Beyond cutting energy use and exemplifying the promising potential of solar energy, the project has provided influential hands-on learning experience for students. While implementing energy projects on campus, inviting students to play a major role enables them to learn about key issues surrounding energy initiatives, the problems that arise during implementation and the need for effective analysis and communication during the process.

ENGAGEMENT AND SUPPORT

Leaders and Supporters

The project emerged out of a senior Environmental Studies seminar in 2009 taught by Professor Stephen Trombulak in which students proposed a solar energy plan for the college. Due to changes in the administration at Middlebury and legislation in Vermont, the proposal was temporarily dropped. In the Fall of 2011 Professor Jon Isham's class, "Environmental Economics," took the new legislation and incentives that had emerged and put forth new recommendations resulting successfully in negotiations with the solar tracker manufacturing company. The task group included faculty and staff members including the Director of Sustainability, Jack Byrne, Dean of Environmental Affairs, Nan Jenks-Jay, VP for Finance and Treasurer, Patrick Norton, and Special Assistant to the President, Tom Corbin in the Assistant Treasurer's Office, and Mike Moser, Assistant Director of Facilities.

Funding and Resources

The project is financially self-sustainable. The electricity from the solar farms is sold at a price higher than the lease payments resulting in the net revenue to the College. Upfront costs included staff costs for managing the installation of the farm and converting the use of two acres of pastureland to solar farm.

Education and Community Outreach

College officials communicated with neighbors concerned about the aesthetics of the solar farm and its impact on open pastureland. After carefully addressing these worries, the response from the surrounding community was generally positive and supportive.

National Wildlife Federation's Campus Ecology Program
We consulted the Campus Ecology blog when working on this project.

CONTACT INFORMATION
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MORE ABOUT YOUR SCHOOL
Campus Sustainability History
Middlebury has been engaged in making sustainability a prevalent part of campus culture and activities for many years now with various successes and lessons learned. As mentioned above, we are currently working towards our goal of carbon neutrality by 2016. This fall we are focusing on this mission along with increasing the amount of local food purchased for dining and furthering the greening of athletics. Our Campus Sustainability Coordinators, a student group on campus concerned with sustainable living, are focusing this semester on the issue of waste at Middlebury College. In addition, interns in the Sustainability Office are working with professors and staff members to implement an energy literacy and conservation initiative. To learn more about our Sustainability Integration Office and past projects please visit our website http://www.middlebury.edu/sustainability.

Image Credit: Brendan Mahoney