

Clean Energy Fund Evaluation & Review
Richard Watts: Sept 1, 2015

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REPORT SUMMARY

Visionary student leaders initiated a Clean Energy Fund (CEF) in 2007, winning university support for a \$10 per student increase in the student comprehensive fee. Seven years after the funds started being collected, more than \$1.2 million has been allocated to 36 projects. The campus has seen the impact of the Fund in physical projects and programming, research, and st

Clean Energy Fund Revenue

During the first seven years, the Fund generated an average of \$231,000 a year. In total between FY 2008-2009 and FY 2014-2015 the Fund has raised \$1,619,388.

Table 1. Clean Energy Fund Revenue by Year

Project Development

In the fall of 2009, the Office of Sustainability put out the first call for proposals. Interested faculty, staff, and students nominated what they believed to be innovative ideas for clean energy. The Office of Sustainability created the Clean Energy Fund Committee, which includes students, faculty, and staff who review projects and make selection recommendations. The program coordinator in the Office of Sustainability vetted projects and met with project leaders. UVM's newly hired Green Building Coordinator helped with the initial projects. To help administer the Fund, the Office of Sustainability hired a graduate student to conduct outreach and staff the committee selection process.

Program Goals ¹

The Clean Energy Fund seeks to engage students in education, outreach, and research, related to reducing energy use at the University of Vermont. The program goals are as follows:

1. Develop high-impact projects that bring clean energy to UVM
2. Engage students
3. Increase awareness of renewable energy and energy alternatives

Funding falls into four main categories: infrastructure, education, research & studies, and program operations. (Note: these categories were developed for this report in consultation with the Office of Sustainability.)

Infrastructure are those projects that require a physical installation on campus and by definition then involve staff within UVM's administrative units, for example Physical Plant and Campus Planning. Education involves the academic side of UVM and is usually in combination with a class or a UVM faculty member. Projects in the research category are original research. Combined with research are a variety of studies that the CEF has funded examining campus issues ranging from transportation to compost.

Table 2. Analysis of Fund expenditures by end-use 2008 through June 30, 2014 (expended) TJ ET Q q 72 (j)-19

End Use of Fund	Total	N
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It is difficult to quantify the direct impact of the Clean Energy Fund projects on reducing UVM's energy use. Energy savings can be calculated for a few of the infrastructure projects, such as the solar trackers on Spear Street which off-set about 30 percent of the Aiken Building's electrical use. The solar panels on the roofs of Votey Hall, the Heating Plant, and the Miller Farm have somewhat limited impact on UVM's overall energy costs because of the scale of the projects. On the other hand, CEF funding or projects may have forced some important discussions about policies. The process for designing solar installations on roofs and the complexity of renewable energy installations on campus

Research & Studies

The CEF has funded seven campus-based feasibility studies. These include a Biomass Feasibility Study for Trinity Campus (\$1,800); Improve Bicycle Access at UVM (\$8,000); UVM Electric Vehicle Charging Station Feasibility Study (\$5,000); Johnson House Renewable Energy Feasibility Review (\$250); UVM/Community 2013 Biomass Feasibility Study (\$27,000); Comprehensive Campus Renewable Energy Feasibility Study (\$63,000); and the Green Labs Program (\$39,000). Most of these funds have been allocated to campus operations or consultants to manage. CEF interns have had some involvement in several of the studies.

There have been three original research projects funded through the CEF. One was led by a professor in the College of Engineering and Mathematical Sciences to develop a hybrid street lamp system using helix bamboo wind turbines and solar panels (\$34,000) and two student-led projects looked at the heat output of different types of compost at and around Slade Hall. The first of these was led by two undergraduate students in the College of Agriculture and Life Sciences and involved building compost piles and a new greenhouse (\$67,000), and the other project was led by two graduate students (\$27,000).

The three funded research projects received mixed reviews. The first compost research project led by the undergraduate students experienced cost overruns and was eventually abandoned. The bamboo wind research project received positive reviews, but some interviewees question whether CEF funds should be used to support faculty research. Interviewees have identified the feasibility studies as useful data sets and information that could be used and disseminated more widely.

Program Operations

The program operations category includes two separate programs. In the Implementation and Education Program, the CEF has funded graduate students to assist with fund outreach and to staff and support the committee and to follow-up with projects. One goal of the graduate student program has been to connect the data and results from funded projects with the academic side of the University. Projects ranging from the solar panels to the studies have produced considerable information and data. Four graduate students at a cost of \$156,000 have been funded over the seven years of the fund. These have all been two-year Master of Science students in the Rubenstein School.

The second program in this category, Services & Materials and Contingency (\$85,000) includes money for project cost overruns and to pay for other related expenses incurred by the Office of Sustainability (for example this evaluation and summary report).

The cost of the two staff in the Office of Sustainability was not charged to CEF, and has been an in-kind contribution to the CEF activities. One of these staff has spent about 30 percent of their time supporting the fund and managing budgets.

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9. Undergraduate Internships and Research Funding

Fund money should be used to increase internship, research, and conference attendance opportunities for undergraduate students. This could be done with low CEF overhead costs by simply creating CEF branded placements through UVM's Internship and Office of Undergraduate Research (both offices have said they would welcome this opportunity).

10. Graduate Students

Fund managers should be cautious about funding graduate students for administration-related duties. And if the practice continues, then all UVM departments should be made aware of the opportunity.

11. Program Operations

Fund managers should attempt to spend about 10% (about \$22,500 per year) on managing the Fund. This number is stated in some of the Fund's founding documents.

12. Transportation and Heating

The use of the CEF should broaden mandate beyond electricity. Burling (p)1 (or)]TJ(y. B)3 (i)-202 Tc -0.007Bi

Use existing staff to support and manage the Fund, rather than graduate students. There could be an opportunity here to provide additional funding to a staff member that is currently employed less than full-time.

19. Faculty Course Release

Use funds to buy out faculty courses (about \$11,000 each) so that faculty can devote time to working with students on a research or applied education CEF-related experience.

20. Sustainability Fund

Broaden the fund to make it a “sustainability fund.”

21. Investments

Put the funds into renewable energy investments.

¹ These goals are not clearly written in any document. And over the years, the goals have changed from a focus on renewable energy to a broader focus that includes transportation for example. I developed these goals through reading the materials and early founding documents and in interviews with the Fund’s managers.

² Interviewees were asked an open-ended question: “As you think about the Clean Energy Fund, what are some of the successes?” Interviewees almost unanimously pointed to the seminars as a successful use of the money. However, the principal author of this report (Richard Watts) is also the manager of several of these seminars so it is possible they were biased in their responses by the interviewers known association with the seminars.

³ This clarifying statement was inserted by the Vice President of Finance.

⁴ “Up to 10% of the fund may be used for administrative needs associated with the fund” Clean Energy Fund web page <http://www.uvm.edu/sustain/cef/about>, web access Sept 3, 2015.

⁵ This statement was inserted by the Vice President for Finance based on information published on Burlington Electric’s webpage.