# Appendix A:

# Sample Proposal: Clean Energy Fund

# The University of Vermont

## Campus Green Fund Implementation Guide

Association for the Advancement of Sustainability in Higher Education (AASHE)
In Partnership with: the Campus Green Fund Collaborative

November 2013

# Proposal for a UVM Clean Energy Fund


## Developed by the UVM Campus Energy Group for the UVM Board of Trustees

## April 2008

## Executive Summary: Vision and Need for a Clean Energy Fund

We envision a UVM of the future that runs efficiently on a fraction of its current energy needs, powered by clean, locally-produced renewable energy that fills university needs and supports the local economy. We believe students can and must be the "first movers" on the critical issue of global climate change, and can make meaningful differences with the support of the entire UVM, Burlington, and Vermont communities.

In this proposal, we describe a Clean Energy Fund (CEF, see Section 3.0 of this proposal), which would collect funds each semester from a dedicated student fee, and would be used to finance new clean energy projects on the UVM campus and beyond. A committee composed of students, faculty, and staff would prioritize projects and evaluate clean energy proposals. The committee would then formulate a recommendation to the Vice President for Finance and Administration, who would authorize spending of funds for clean energy projects. The fund would be reviewed every four years to evaluate its success and determine whether to increase or decrease its size. The fund could also include contributions from other parts of the UVM and outside community that promote similar goals. Universities across the nation, including UVM peer institutions, have successfully developed similar funds and offer models for UVM to build upon. Other schools that have adopted similar funds include: the University of California-Santa Cruz, the University of Colorado-Boulder, the University of Illinois-Urbana-Champaign, the University of North Carolina-Chapel Hill, the University of Oregon, and the University of Utah.

Proposed projects would be evaluated by a Clean Energy Fund Committee, which would include five undergraduate students, two graduate students, two staff members, two faculty members, and ex-officio members from the Office of Sustainability and Capital Planning. Committee membership will be open to all members of the UVM community, with the Office of Sustainability making final approvals on committee membership. The CEF Committee would be charged with evaluating projects based on criteria including academic relevance, energy cost savings, potential availability of external funds, potential partnerships with Vermont businesses, greenhouse gas reductions, and maintenance

needs. The CEF Committee would serve in an advisory role to the President's Commission on Sustainability, and ultimate decision-making power on proposed clean energy projects would lie with the Vice President for Finance and Administration. A periodic review process would take place to evaluate the success of the CEF and ensure accountability in developing projects that benefit the overall UVM student experience.

The Clean Energy Fund is supported by a large majority of UVM students, and has been endorsed by the Student Government Association, Graduate Student Senate, and Faculty Senate, along with staff support from Operations. The fund will benefit UVM on environmental, economic, and academic fronts. The fund is also highly consistent with UVM's mission and goals to be a leading environmental university. We are asking the Board of Trustees to enact a $10 per semester student fee to provide this dedicated funding source for clean energy.

# 1.0 Introduction: Vermont, UVM, and Climate Change

## 1.1 The role of universities in promoting sustainable development

Academia has traditionally been at the forefront of intellectual, cultural and technological change, and campuses once again can be the catalyst that drives this country toward sustainable energy independence. The ambitious "Leading by Design" project at UVM is developing the tools and academic infrastructure to continue the university's leadership in education and sustainability. Campuses can set an example for their communities and the nation by implementing alternative energy, energy efficiency and environmental sustainability projects on campus to demonstrate their feasibility, benefits, and cost effectiveness. Universities are centers of intellectual power, capable of leading experiments on new technologies, and using these projects as teaching tools and research opportunities to better the education of the next generation of voters, consumers, politicians, and business leaders—citizens who will be making energy decisions for years to come. Installing renewable energy capacity on campus is a great way to reduce energy bills while educating the campus community about renewable energy technologies. Depending on their location, campuses can take advantage of solar, wind, biomass, and geothermal resources. Renewable energy generation can reduce the need to purchase conventional energy (heating water with solar power, for example, means burning less fuel). Renewable energy systems can supply electricity directly to buildings, or can produce electricity to sell back to utilities via net metering mechanisms. These projects save on energy costs, help develop a market for renewable technologies, and display a visible public commitment to a sustainable future.

## 1.2 Climate change: Projected impacts to Vermont

A recent report written by an independent panel of experts titled "Climate Change in the U.S. Northeast" projects hotter summers and warmer winters in Vermont and surrounding states, with more rain and less snow in winter (shorter snow season), and more frequent droughts in late summer and early fall. This fits in with general predictions that climate change will result in generally warmer weather, but also with more erratic, less predictable, and more intense periods of heat, cold, and precipitation. These climate impacts are likely to have strong, mostly negative impacts on critical pieces of Vermont's economy, including the state's ski, maple, fall tourism, and agricultural sectors. To preserve these pieces of the Vermont's culture and economy, strong action against climate change – through renewable energy and reduced greenhouse gas emissions – is necessary.

## 1.3 The Regional Greenhouse Gas Initiative (RGGI)

Nine states in New England and the Mid-Atlantic, including Vermont, have taken initiative to reduce their greenhouse gas emissions through RGGI, a cap-and-trade system designed to reduce emissions effectively and with maximum economic efficiency. RGGI will require utilities in Vermont to reduce their greenhouse gas emissions through the cap-and-trade system. RGGI was strongly supported in Vermont by Governor Jim

Douglas' administration. Despite the challenges of climate change, the Northeast is recognized as a global center for technology, finance, and innovation, and ranked against the rest of the world would have greenhouse gas emissions equivalent to the seventh largest nation. As the state's flagship university, reducing UVM's greenhouse gas emissions is consistent with Vermont's leadership in addressing the global challenge of climate change.

### 1.4 Past comments from the UVM administration

"Our world is in crisis, and time is limited to make the changes required to achieve a sustainable and desirable future. The next 10 years will be critical in finding and implementing real, systemic solutions. We at UVM are deeply committed to transforming our University into the world leader in ecosystem thinking, learning, and sustainable design in order to meet this challenge."

- Letter from President Fogel and Provost Hughes to David Orr, November 2006

"Last fall, UVM President Daniel Mark Fogel joined more than 80 college and university presidents in the northeast U.S. by signing a pledge to support the climate goals of the New England Governors and Eastern Canadian Premiers. These goals include reducing carbon dioxide and other greenhouse gases to 1990 levels by 2010, and reducing the fossil fuel energy used at their campuses by 25% by 2012. The presidents committed to achieving these goals by reducing institutional energy use, educating students about the problem of global climate change and its solutions, and eventually shifting away from carbon intensive fuel sources to clean, renewable energy resources."

- "Climate Change and UVM", The Cynic, February 24, 2004

President Daniel Mark Fogel said, "As one of the leading environmental universities in the country, it's important that we both model sustainable practices and provide real world methods for our students and others to study and understand renewable energy technologies."

-"Eco-Mind", The Cynic, October 11, 2005

"I think it would be great to set a goal that is achievable and in our means for getting to 100 percent renewables," President Fogel said. "We want to see it as much as possible in a totalized way across the whole institution."

- "The State of the University", The Cynic, January 23, 2007

# 2.0 Background: UVM's Energy Use and Efforts to Date

## 2.1 UVM's Energy Consumption

The University of Vermont, the state's flagship institution of higher education, is a small research university with an emphasis on liberal arts, environment, and health. About 10,000 students occupy about 4 million square feet of building space on the 430-acre main campus. Energy use for heating, cooling, and powering the campus totals 57 million kilowatt-hours and 546 billion British thermal units per year, costing close to $9.5 million in fiscal year 2005.

## 2.2 Proven Success With Energy Efficiency

Since the University of Vermont established an energy policy in 1990, projects in energy efficiency and smarter energy use have saved millions of dollars in electricity, heating fuel, and water costs, and helped to reduce peak demand for power, thus helping control electricity costs for the entire city of Burlington. Efficiency projects in 2000-2005 saved an estimated 2,924,000 kilowatt-hours (kWh) and 2.2 billion British thermal units (BTUs), totaling $2,460,000 in electric savings and $1,997,000 in natural gas savings over the six year period. Projects address a wide variety of energy end uses including motors, drive applications, lighting, heating, ventilation, air-conditioning and control systems. The efficiency projects resulted from a commitment to long-term, close collaboration with the Burlington Electric Department (in partnership with Efficiency Vermont) and Vermont Gas Systems, which provide both rebates and technical assistance for energy efficiency and conservation. The funding structure and collaborative relationship is the subject of frequent inquiry from other institutions seeking to incorporate efficiency into their way of doing business to reduce costs and environmental impacts.

UVM's Energy Management Office in the Physical Plant Department targets, facilitates, and monitors efficiency projects. Funding has come from a $125,000 revolving load fund established in 1992, from bonds in 1995, 1998, 2002 totaling $3.25 million, and from taking longer term and life cycle costs into account in new building construction. The overall investment in efficiency at UVM has allowed the campus to improve ventilation, increase the intensity of building use, and add air conditioning while using almost the same amount of energy for heating, cooling, and power per square foot in 2005 as in 2000. (See Appendix 1.0).

**UVM's conservation and efficiency measures greatly slowed the rate of growth in electrical consumption that took place in the 1980s. These conservation and efficiency measures recently won UVM a Governor's Award for Environmental Excellence and Pollution Prevention.**

## 2.3 Existing Clean Energy Projects at UVM

**Solar Energy Project:** Forty-eight 120-watt solar panels cover part of the Physical Plant roof on the UVM campus. This demonstration project generates an average of 19 kWh per day. Due to its visibility, this project serves an important educational role at UVM. For more information, see http://www.uvm.edu/~solar/?Page=about.html.

**Biodiesel Buses Project:** For the last several years, UVM has run its bus fleet on B20, a mix of 20% biodiesel and 80% petroleum diesel fuel. Biodiesel is a renewable energy source that reduces air pollutant emissions from the university bus fleet.

**Wind Energy Project:** In 2005, a 10 kW wind turbine was installed on the UVM campus near the corner of Main Street and East Avenue. This turbine provides a modest source of on-campus clean energy while serving an important educational role for UVM students.

**Green Building Policy:** In 2005, UVM enacted a "green" building policy that will require new buildings to meet the U.S. Green Building Council's LEED standards. In 2007, President Fogel committed new construction to reach LEED Silver standards. The Marsh Life Sciences addition, University Heights Residential Learning Complex, and Dudley H. Davis Center are recent projects that have received or are seeking LEED certification.

**The Greening of Aiken:** The proposed Greening of Aiken project is an ambitious effort to renovate the home of the Rubenstein School of Environment and Natural Resources into an advanced "green" building that will minimize energy and water use and waste production. The Aiken Center would serve as the centerpiece building to UVM's green building efforts while providing abundant educational opportunities to students.

**Compressed Natural Gas (CNG) Buses:** Two new CNG buses debuted on the UVM campus in February 2007. CNG produces 100 times lower emissions of particulate matter and 50% fewer nitrogen oxides, in addition to being quieter to run.

## 2.4 Need for a Clean Energy Fund

Despite these impressive efforts, UVM's total energy use and carbon dioxide emissions continue to grow. At the same time, other colleges and universities are taking innovative approaches to combating climate change while providing students with real-world exposure to the growing field of renewable energy. For UVM to continue its leadership as the Environmental University, we must expand our efforts through initiatives like the Clean Energy Fund. The Clean Energy Fund will provide an additional resource to improve the return on investment for clean energy projects that is currently an obstacle to their wider use. As a recent signatory to the Presidents' Climate Commitment, UVM will be developing plans to pursue carbon neutrality in its future; the CEF can be a tangible step toward achieving this goal.

To continue our efforts towards reducing our environmental impact and to both stabilize and reduce our energy costs, the University of Vermont should implement a Clean Energy Fund for the purpose of promoting renewable energy projects on and off campus. The Clean Energy Fund will accrue capital via a student-based fee of $10 per student per semester, and will be used to fund clean energy development on campus at UVM. As modeled by some of our aspirant Universities, who have successfully implemented similar clean energy funds, the Clean Energy Fund may receive supplementary contributions from alumni, faculty, staff, or administration, various community organizations and the local utility companies and community. Once instituted, the Clean Energy Fund will provide UVM with numerous economic, environmental, and educational benefits and opportunities, which will be detailed later in this proposal.

## 2.5 Peer and Aspirant schools instituting a CEF

Colleges and universities across the nation are taking a leading role in addressing the challenge of climate change, including UVM peer and aspirant institutions:

- Over 500 campuses, including UVM, are members of the Campus Climate Challenge, an organization dedicated to student-led efforts to combat climate change.
- Over 500 campuses, including UVM, have signed the Presidents' Climate Commitment developed by the Association for the Advancement of Sustainability in Higher Education (AASHE), including UVM peer schools University of Maine, University of New Hampshire, University of Rhode Island and UVM aspirant schools University of Colorado-Boulder and University of North Carolina.
- Over 60 campuses buy renewable energy though the U.S. EPA's Green Power Challenge, including UVM aspirant schools Penn State.
- Several dozen universities have financed renewable energy in part though a nominal student fee, including UVM aspirant schools University of Colorado-Boulder and University of North Carolina. Fees typically range from $1 to $20 per student per semester. Two examples are profiled below:

**University of Colorado-Boulder:** In the Spring of 2000, in the largest student voter turnout in University of Colorado history, students voted by a 5 to 1 margin to increase student fees by $1 per semester for 4 years to purchase 2 million kWh of wind power from Public Service Company of Colorado 's Ponnequin wind farm. CU was the first school in the nation to raise students fee to purchase wind power, and has since been used as a model by many other Universities as a way to support renewable energy. In the spring of 2004, the student government voted to extend and expand the wind purchase, and CU is now purchasing 8.8 million kWh of wind, offsetting 100% of the electricity needs of the 3 student-run buildings. This clean, renewable source of energy will lower campus emissions of carbon dioxide by roughly 12 million pounds every year!

**University of North Carolina-Chapel Hill**: UNC enacted a $4/semester fee increase in 2004/05 school year, with 75% of student voters supporting this initiative. It was re-

approved in 2005 with 85% support. Funds of around $200,000 are distributed to on-campus projects by the Renewable Energy Special Projects Committee made up of students with staff and administrators acting as advisors. The committee has funded renewable energy projects on campus including a solar hot water project on a dorm renovation and a geothermal system for a new green building at the Botanical Garden. They also received a $137,000 grant to match student funds for the solar water heating project.

### 2.6 Gauging the support for a Clean Energy Fund: Fall 2006 student survey

To determine how many students would support the use of a student fee and how much they would be willing to pay, we conducted a randomized survey of UVM students during the fall of 2006. After discussing survey methods with UVM statistics and economics professors, we determined that a survey of randomly selected courses, stratified by course number, would provide the most feasible and valid study design. We also set a goal of surveying at least 400-500 students to gain a representative sample of UVM's student population. The survey form is attached to this proposal (See Appendix 2.0).

We received 419 valid survey responses (see attached sample survey form). These surveys showed broad concern for environmental, renewable energy, and climate change issues. Students generally supported a fee of $5-10 per semester designated for development and purchase of clean energy for the UVM campus (86% supported a fee of $5 or more per semester; 68% supported a fee of $10 or more per semester). As expected, support for the fund was greater among students identified as environmental majors, but support was generally strong across all majors. (See Appendix 3.0).

**A large majority of students would vote to support a clean energy fee if given the choice, with very few opposed.**

### 2.7 Support from campus governing bodies

During the 2007 spring semester, the UVM Student Government Association, Graduate Student Senate, and Faculty Senate and all unanimously passed resolutions in support of the Clean Energy Fund. These governing bodies represent key parts of UVM's population. These groups also provided valuable suggestions to develop our proposal, showing that buy-in from the campus community has been achieved on the critical issue of climate change and renewable energy. Their resolutions are attached to this proposal.

### 2.8 Lewis Foundation Planning Grant

UVM's Leading by Design Task Force is developing a proposal for the Lewis Foundation for up to $15 million and has currently received a planning grant to envision UVM as a leader in a sustainable and desirable future. This grant will help develop milestones and a road map for UVM to achieve its academic, curricular, and environmental goals over the next 10-20 years. Energy use and greenhouse gas

emissions are key components of this proposal, as President Fogel and Provost Hughes have expressed. The Clean Energy Fund provides a feasible, tangible step toward achieving the leadership goals UVM is setting as part of the planning process.

# 3.0 Proposal

## 3.1 Connecting to the Core Mission of UVM

"Our vision is to become a carbon neutral campus. We will pursue that goal through a combination of strong energy conservation initiatives, alternative energy sources, renewable and clean energy demonstration projects, and, where appropriate, purchasing carbon credits. As you know, this represents an aggressive commitment that substantially exceeds the plan of the New England Governors and Eastern Canadian Premiers Climate Action Plan and the goals established by states and universities, such as Yale, with established climate goals. Furthermore, we are committed to reinvesting funds freed up through effective conservation programs into renewable and non-carbon emitting energy."

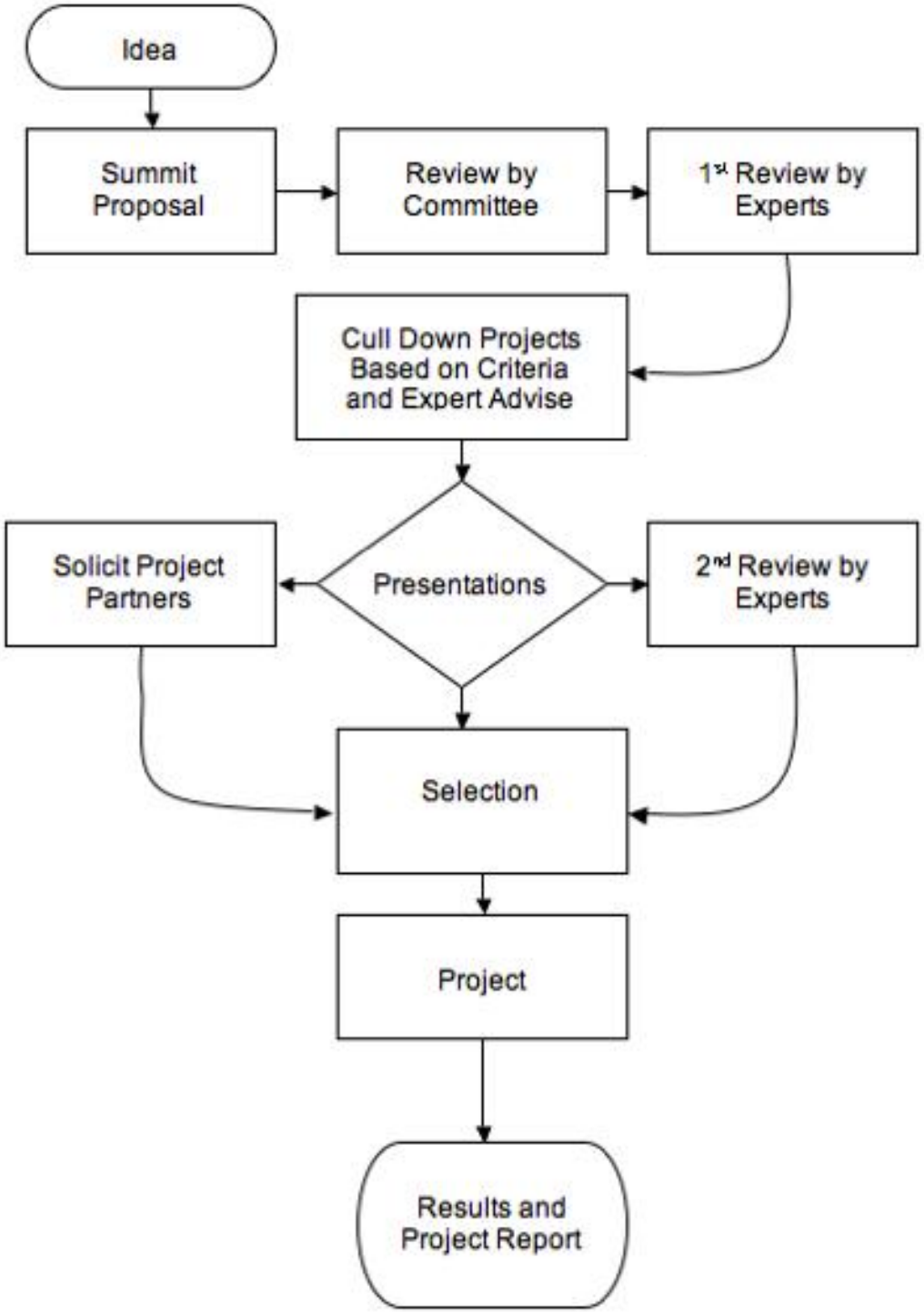
- President Fogel & Provost Hughes, November 9, 2006

UVM has established a goal of being the "Environmental University", a premier small research university, and a leader in finding and demonstrating practical solutions to the environmental problems facing our world. We see the Clean Energy Fund as a highly practical and feasible way to improve the University's performance on these fronts, continue to build relationships to the local community, economy, and businesses, and provide innovative ways to educate students about the growing field of renewable energy. In all these ways, we see the Clean Energy Fund as entirely consistent with and a desirable piece of UVM's core mission.

## 3.2 Description of the UVM Clean Energy Fund

A nominal student fee, reflecting the student support, for full time undergraduate and graduate UVM students, will generate income for the Clean Energy Fund. The fee will be in addition to each student's tuition, and be assessed every semester. The Clean Energy Fund will exist as part of the comprehensive fee, and shall only be used for clean energy purchases at UVM and will not be used as part of the University's general budget. Up to 10% of the fund may be used for administrative needs associated with the fund. An advisory committee made up of students, faculty, staff and administrators as described below will review potential projects, and make recommendations as to how the funds should be allocated. This committee will report their conclusions to the University's Vice President for Finance and Administration, who will determine whether the Clean Energy Fund should finance the proposed project.

The following is a flow chart describing how the Clean Energy Fund will move from the conceptual phase to project completion and assessment:


Idea
Summit Proposal
Review by Committee
1st Review by Experts
Cull Down Projects Based on Criteria and Expert Advise
Solicit Project Partners
Presentations
2nd Review by Experts
Selection
Project
Results and Project Report

## 3.3 Committee Structure

A major goal of the Clean Energy Fund is to foster student, staff, and faculty cooperation and involvement. To reflect this goal the Campus Energy Group recommends that the membership of the Clean Energy Fund Committee be composed of all of the following members. All university students, staff, and faculty can apply for participation in the Clean Energy Fund Committee. Applications will be solicited through campus e-mail, campus government listservs, and the student newspaper. Interested individuals will fill out an application form (attached as Appendix 7.0) and submit it to the Office of Sustainability, which will then approve members. The Office of Sustainability will approve those members with the greatest level of relevant experience and interest, and those students who are in favorable academic standing and exemplary members of the UVM community. Committee members will serve 2-year staggered terms to allow year-to-year continuity within the committee.

**Membership:** The Clean Energy Fund committee will be a student led board; chaired by a student elected from within the board's membership by majority vote.

**Five UVM Undergraduate Students**:

- SGA appointed chair of Environmental and Social Justice Committee
- Four students at large to be approved by the Office of Sustainability

**Two UVM Graduate Students**:

- Graduate Student Senate appointed member
- Graduate Student at large to be approved the Office of Sustainability

**Two UVM Staff Members**:

- Appointee from Physical Plant / Campus Energy Manager
- Staff at large to be approved by the Office of Sustainability

**Two UVM Faculty Members**:

- One faculty from Faculty Senate Financial & Physical Planning Committee
- One faculty at large to be approved by the Office of Sustainability

**Ex-Officio Members**:

- Fund Administrator from Office of Sustainability
- Appointee from Capital Planning

Clean Energy Fund Committee members will have responsibility to:

- Review proposals and recommend project ideas to the Vice President for Finance and Administration
- Ensure student involvement in the design, installation and review process
- Encourage development of cost-benefit analyses for proposed projects
- Encourage writing of grant proposals to provide supplemental funding for projects
- Make recommendations for sustainable design on other relevant new university developments

- The student chairperson will work with the Fund Administrator to schedule and announce meetings, set meeting agendas, and distribute minutes

Proposals will also be reviewed twice by an expert panel external to the CEF committee – first to assist in culling less feasible projects, second prior to final project selection (as shown in the above flowchart). The CEF committee will solicit recommendations for incorporation into the committee's decision making process. The expert panel may include additional members of UVM's physical plant, financial, and planning staff, as well as experts external to UVM (i.e., Burlington Electric Department, Efficiency Vermont, other local renewable energy experts).

The participation and leadership of students on this committee is a critical aspect of our proposal. Unlike many University expenditures, students will have a strong role in determining appropriate use of Clean Energy Fund money. Meetings of the Clean Energy Fund committee will be announced in advance to all members of the University community; meetings will be open to all in order to improve transparency and accountability. Project proposals will be submitted to the committee through the Clean Energy Fund Project Proposal Form, which will be made available and advertised to the public (attached as Appendix 8.0).

### 3.4 The Role of the Office of Sustainability

The Office of Sustainability's mission is to support campus activities and programs that enhance UVM's environmental goals. The Office is dedicated to improving excellence in academic programs, campus operations, and environmental culture on campus. This dedication extends to collaboration with all members of the University community as well as the city of Burlington, the state of Vermont, and the world at large. Much of this work is accomplished through committees, which are made up of Environmental Forum members and interested members of the community. Based on the fundamental connection the Office of Sustainability shares with what the Clean Energy Fund is attempting to accomplish, the advisory committee of the Fund will become a part of the Office of Sustainability. The Director of the Office of Sustainability, Gioia Thompson, endorses the introduction of this committee to the Office of Sustainability, and believes that this relationship will lead to more effective brainstorming, communication, and development of clean energy projects.

### 3.5 Comprehensive Fee

The Clean Energy Fund fee will be included within the comprehensive fee so that it is assessed for both full-time undergraduate and graduate students at UVM. The revenue produced by Clean Energy Fund fee will be set aside from the rest of the comprehensive fee, and only spent on clean energy projects.

During the course of developing our proposal, we discussed several forms of fee, including mandatory and optional (opt-in or opt-out) structures. Due to the fee's small size, large margin of support, and the need for action on the issue of climate change by

the entire community, we feel a nominal but mandatory fee is appropriate for funding clean energy at UVM.

### 3.6 Criteria for Potential Projects

The Clean Energy Fund committee rank projects using the following criteria, which will be given equal weight in the project decision making process:

- Is the project located on campus (priority given to on-campus projects; off-campus projects must have an academic/outreach tie to the University)?
- What is the project's teaching tie-in? Was the proposal developed as part of a class or independent study? Will it be used for future classes?
- What energy cost savings will the project provide, both on a yearly and life cycle basis?
- Are matching funds available? From what source(s)?
- Are partnerships with one or more Vermont businesses part of the project?
- What are the project's greenhouse gas emission reductions?
- What are the project's maintenance needs and what support is available for maintenance?

Acceptable sources defined as clean energy will include: farm methane, wind, and solar projects or other sources as defined by Vermont's Sustainably Priced Energy Enterprise Development (SPEED) program. Purchase of renewable energy credits (RECs) that meet these criteria will also be considered.

### 3.7 Review Procedure

The Clean Energy Fund will go through a periodic review process every four years. The review would by conducted by the Student Government Association and Graduate Student Senate, as representatives of the student body paying the fee. The goals of the review process are to judge the strengths and weaknesses of the Clean Energy Fund program and administration and to determine whether it is appropriate to raise or lower the size of the student fee used to finance the fund. The review process is important to maintain accountability and transparency in use of the fund.

### 3.8 Solicitation Process

Potential projects using funds generated by the student fee will adhere to the guidelines UVM Procurement Services has created for when a Request for Proposal (RFP) is required. Specific project proposals (Appendix 8.0) will be submitted for every project brought before the Clean Energy Fund committee.

"The RFP process is required when the total order exceeds $50,000. If you are requesting a waiver from the bid process, a non-competitive bid statement must be filled out, signed, and submitted to Procurement along with any quotes attached to the requisition. The RFP process typically requires 4 weeks - 1 week to draft the

specifications and have them approved by the Procurement & Contracting Specialist, the issuing department, and the Director of Procurement Services - and 3 weeks for the proposals to be mailed to the vendors and returned to Procurement. Departments should provide Procurement with complete specifications, including quantities, sizes, colors, and full descriptions. Departments may suggest vendors and we will provide additional names based on the approved vendor list." See: http://www.uvm.edu/~procure/?Page=requestforproposal.htm&SM=rfpsubmenu.htm

### 3.9 Projections of Net Growth

The primary goal of the Clean Energy Fund is to ensure funding for renewable energy projects every year. Assuming 10,000 students, a $10/semester fee would raise about $200,000 per year. As shown below, such a fund could raise millions of dollars over the long term, especially if combined with outside funding. (See Appendix 4.0).

### 3.10 Leveraging Additional Funds

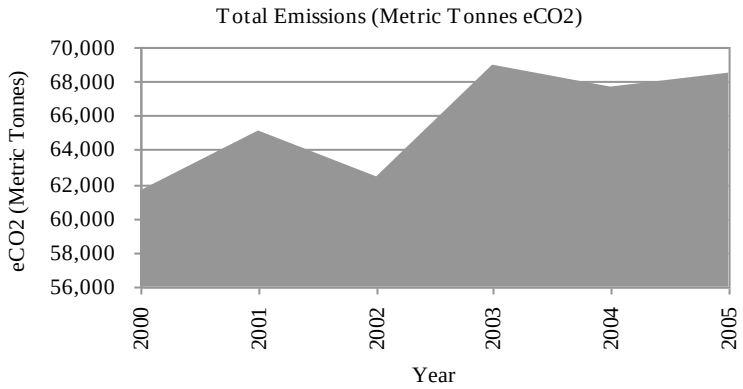
A key feature of the Clean Energy Fund will be its ability to attract additional funding sources beyond the student fee. As evidenced by their support, we view the students as willing and enthusiastic advocates for the Clean Energy Fund. Yet many opportunities exist to leverage additional funds. The Clean Energy Fund will seek to improve its effectiveness by attracting funds from all sectors of the community, within and outside of UVM:

- Donations to the Clean Energy Fund would be accepted from UVM faculty, staff, or departments showing interest
- Matching funds from the Administration have been provided by some universities using a student fee to finance clean energy
- Donations from alumni
- Contributions from the business community
- Grants or other incentives from local, state, or the Federal government for renewable energy
- Possible sale of renewable energy credits from UVM projects to individuals or businesses outside the university

## 4.0 Environmental, Economic and Academic Benefits

In closing, we envision a wide variety of benefits as a result of creating a Clean Energy Fund, including environmental, economic, and academic opportunities for UVM.

**Environmental:** Energy consumption is the main source of pollution for the University of Vermont, and has a drastic impact on our immediate collective ecological footprint. The consumption of energy emits Greenhouse Gases (GHG), which are directly responsible for Global Climate Change. Developing clean energy technologies and purchasing Renewable Energy Credits (REC) will contribute to lowering the GHG emissions of our University.




**UVM's emissions of greenhouse gases have increased since 2000, despite the university's stated commitment to reduce carbon dioxide and other greenhouse gases to 1990 levels by 2010.**

**Economic:** "With fossil fuel prices at record highs, renewables act as a means to balance the high cost of fossil fuel based energy. The cost of generating renewable energy, especially in-state renewable energy, is level and generally predictable; unlike fossil fuel its price is not influenced by international and market forces beyond our control and it does not contribute to global warming. We look forward to increasing Burlington's supply of renewables such as wind energy not only as a way of providing the citizens and business owners of Burlington with clean electricity but also providing them with an affordable and reliable supply. Renewable energy is part of a sustainable and fiscally sound power supply portfolio (Burlington Electric Department 2005).

Currently UVM spends over $6 million annually on electricity. The generation of clean and renewable energy with the UVM Clean Energy Fund will incrementally lower the consumption of fossil fuel energy, and will reduce the costs associated with electricity. The University will become the owner of electrical generation systems and will in turn require less electrical purchases future years. It is possible to envision a day when UVM will be energy independent. The budget, which had once been reserved for purchases of

fossil-fuel electricity, could then be used for other University needs. Energy conservation projects will aid this achievement, while also reducing the use of fossil fuels. UVM's energy independence will also be hastened as the University uses money saved by projects to fund further energy conservation or renewable energy generation projects. In addition, acquiring matching funds through grant proposals can dramatically reduce the time to energy independence. (See Appendix 5.0).

**Despite widespread efficiency and conservation measures, rising enrollment and building space have led to increasing electricity uses and costs in since 1990.**

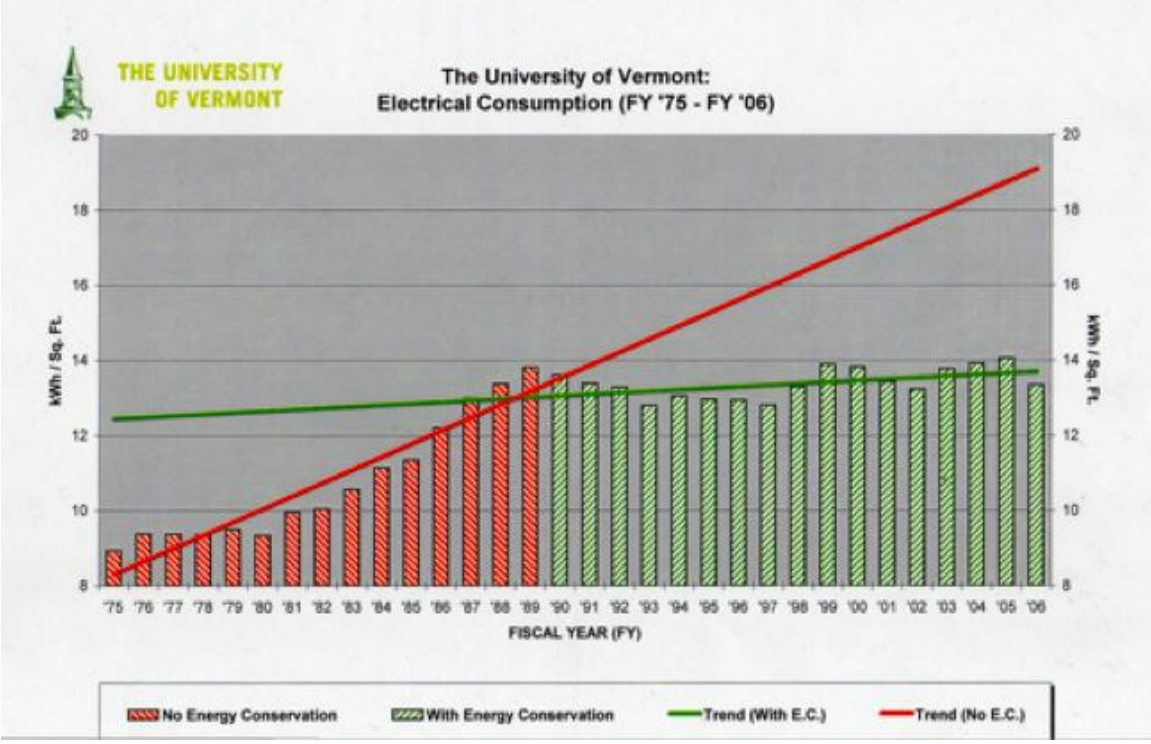
**Academic:** Student involvement is integral to the UVM Clean Energy Fund, as it is students who formulate project proposals, make final recommendations on projects for funding, and seek outside supplemental funding. The UVM Clean Energy Fund will not only offer students an unparalleled opportunity to learn about energy conservation and renewable energy technologies, it will allow the students of UVM to see these technologies implemented. This process enables students to apply the knowledge they have gained in the classroom to a tangible and significant project. The following lists some of the ways that UVM students can be involved:

- The generation of project proposals can be incorporated into the curriculum of many departments, including Natural Resources, Engineering, Environmental Sciences and Studies, Ecological Economics, Sustainable Agriculture, and Community Development programs
- The generation of project proposals can be a capstone experience or master's thesis for students
- Students on the UVM Clean Energy Fund committee could earn internship credits through a number of departments
- Students in grant writing classes can seek outside funding for projects
- Economics students can perform cost-benefit analyses of projects
- The Clean Energy Fund can generate tremendous opportunities for student involvement, and provide UVM students with marketable skills in the emerging fields of clean energy technologies, finance, and management

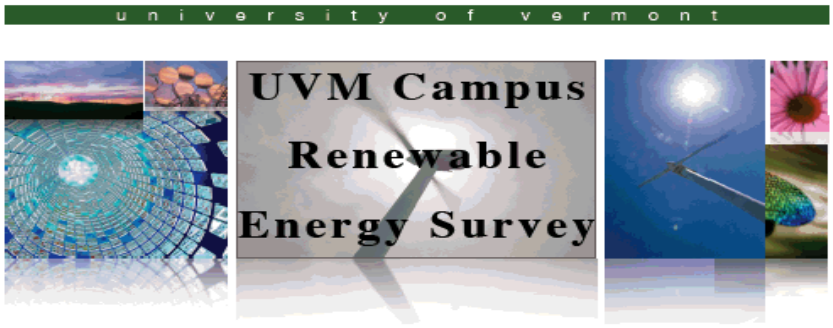
"Installing clean and renewable energy on campus is a great way to reduce energy bills and pollution, while educating the campus community about clean and renewable energy technology." (*New Energy for Campuses*, Apollo Alliance 2004).

# Appendices:

## 1.0 Energy Efficiency Chart



## 2.0 Survey




Students at a growing number of U.S. colleges and universities have taken the lead in advocating for renewable energy (commonly produced by hydro, solar, wind, and farm methane projects) through student fees of $1-$20/semester. UVM could similarly raise money for renewable energy purchases in this way. A student-led group could then determine how to effectively spend the money to reduce UVM's dependence on fossil fuels and its impact on climate change.

**1.** How much of a student fee, per semester, would you be willing to pay so UVM could purchase a percentage of its energy from renewable sources (circle one)?

**$0 $1 $2 $3 $5 $10 $15 $20 $____ (Other)**

**2.** If you gave a $0 bid, please describe why (circle all that apply):

**Not concerned about energy/climate** **Limited financial resources**
**Not students' responsibility** **Other _____**

**3.** Would you be willing to vote YES on a referendum to increase student fees by $X (average student willingness to pay survey results) per semester to purchase renewable energy?

**Yes Maybe No**

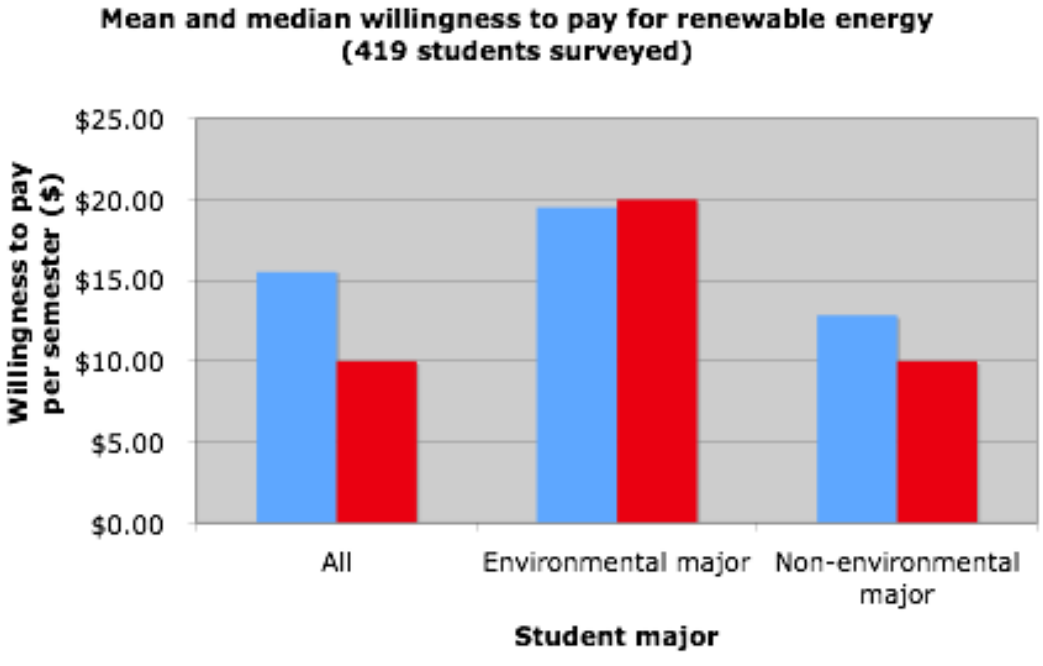
**4.** Please rate your attitudes/opinions on renewable energy and climate change, on a 1-5 scale:
1: strongly agree; 2: somewhat agree; 3: neutral; 4: somewhat disagree 5: strongly disagree

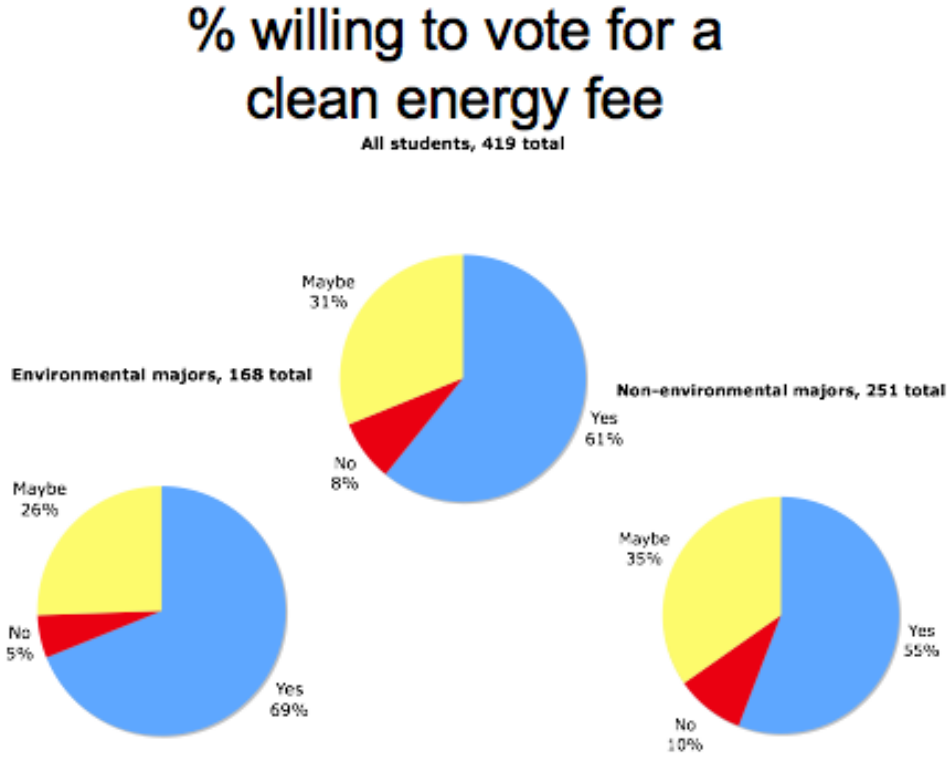
It is important for UVM to use renewable energy _____
I am concerned about climate change _____
I am concerned about supplies and/or price of fossil fuels _____
I want to support local Vermont energy projects _____
Students must show leadership on climate change/energy issues _____
UVM's administration must show leadership on climate change/energy issues _____

**5.** Circle your year (**Fr., Soph., Jr., Sr., Grad/Med**) Your academic major/department _____

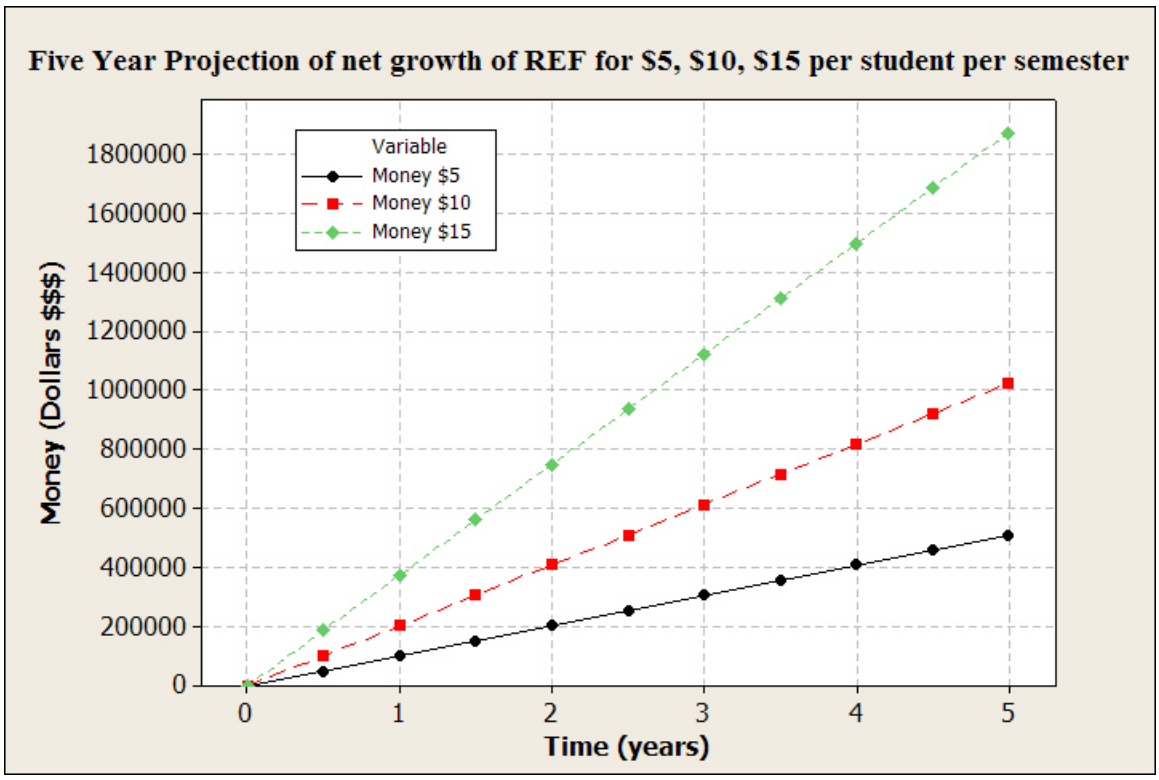
**6.** Do you work during the school year**?** **Yes No** If so, how many hours per week? _____

## 3.0 Survey Results

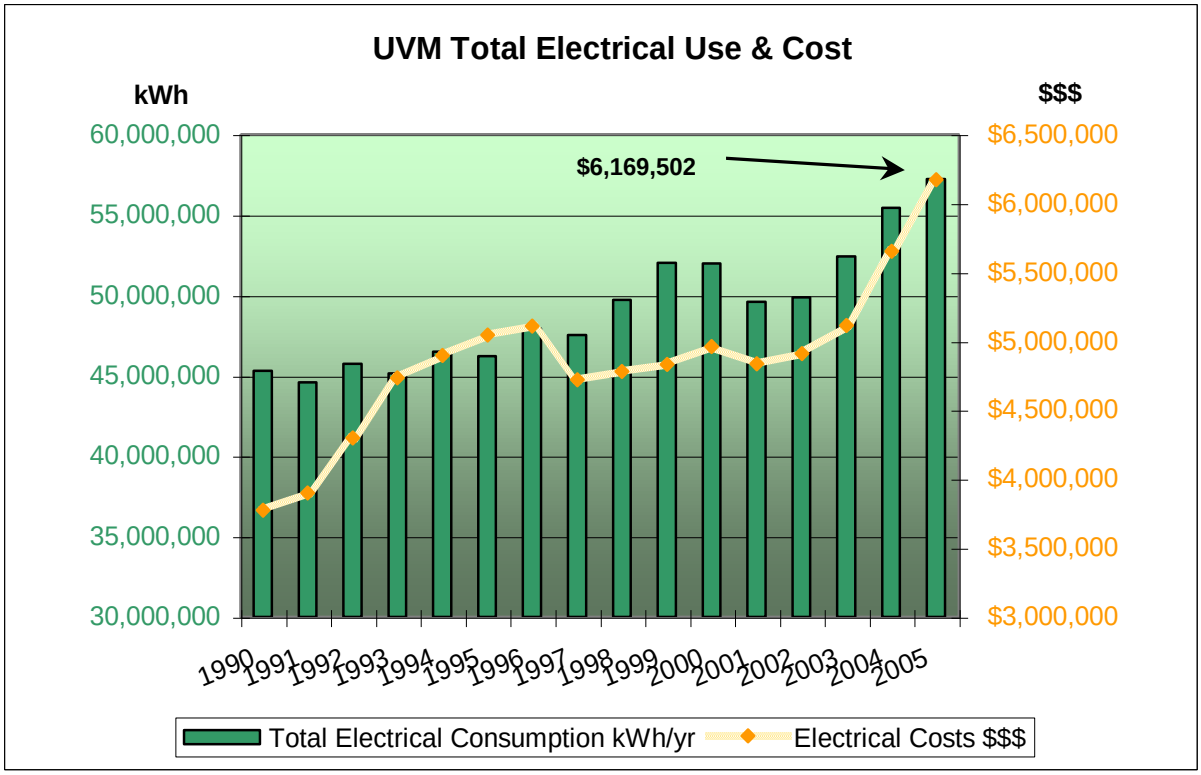


## 4.0 Projected Net Growth



## 5.0 UVM Electrical Usage & Cost



## 6.0 SGA approved resolution

THE STUDENT GOVERNMENT ASSOCIATION SENATE

THE UNIVERSITY OF VERMONT

**Senate Resolution/Bill No.:** **Date Submitted:** 3/16/2007

**Introduced By:** Senator John Colin Quinn **Date Introduced:** 3/6/2007
Student Action Committee

**Date Action Taken:** 3/16/2007 **Certified:** _____
Speaker of the Senate Hollister

_____
Senator Quinn

_____ **Signed:** _____
Senator Ram SGA President Bowden

**WE, THE STUDENT GOVERNMENT ASSOCIATION OF THE UNIVERSITY OF VERMONT, HEREBY RESOLVE:**

Title: RESOLUTION FOR A CLEAN ENERGY FUND

**Author**: Kenneth Bagstad (edited by John Quinn and Kesha Ram)

**Sponsors**: Senator John Colin Quinn, Senator Kesha Ram

**Whereas**, the University of Vermont aspires to be the "environmental university," and the Vermont State Legislature has identified climate change as a priority action item for 2007;

**Whereas**, implementing renewable energy reduces greenhouse gas emissions contributing to climate change and dependence on oil and other fossil fuels and supports local jobs in the renewable energy industry;

**Whereas**, renewable energy is the fastest growing sector of the energy industry, and represents a socially conscious, economically viable means of economic development;

**Whereas**, implementation of renewable energy on campus will afford greater student exposure to emerging renewable energy technologies, will further the University's

efforts to reduce its carbon footprint, and will offset a portion of the University's energy requirements;

**Whereas**, over 400 U.S. colleges and universities have active climate change campaigns, and at least 25 have already passed resolutions funding renewable energy by means of student fees for on-campus clean energy;

**Whereas**, a randomized survey of 419 UVM students found that 68% of students would pay $10 or more per semester, and 86% of students would pay $5 or more per semester to a campus Clean Energy Fund as part of a student fee, which would support investment in clean, renewable on- and off-site energy generation, such as farm methane, wind, and solar projects or other sources as defined by Vermont's Sustainably Priced Energy Enterprise Development (SPEED) program;

**Whereas**, contributions to the fund would be managed based on the input of an advisory committee made up of 5-9 members including undergraduate and graduate students, faculty, staff and administrators;

**Therefore, be it resolved** that the Student Government Association supports the creation of a Clean Energy Fund, financed at least in part by a student fee of at least $5 and no more than $10 per semester for the purposes of creating clean, on- and off-site renewable energy projects.

## 7.0 CEF Committee Application Form

**UVM Clean Energy Fund Committee Application**

**Please print this application out and drop off a completed copy in the SGA Offices in the Davis Center.**

**Name _____**

**Year & Major _____**

**Address _____**

**Phone _____**

**Email _____**

**Past involvement in student organizations at UVM or elsewhere, including past experience relevant to energy and the environment (list only - no description needed):**

**Why do you feel you are a qualified candidate?**

**For the upcoming semester, estimate hours per week devoted to other extracurricular/academic endeavors (write out a schedule if possible).**

**Is there anything else you'd like to tell us about yourself that will help you stand out from the crowd?**

## 8.0 Project Proposal Form

### CLEAN ENERGY FUND PROJECT PROPOSAL FORM

| | | |
|---|---|---|
| Submittal date: | | |
| Project name: | | |
| Applicant contact: | | |
| UVM Affiliation: | | |
| Company/organization: | | |
| Address: | Telephone: | |
| City: | State: | Zip: |
| Email address: | | |

**PROJECT CRITERIA**
**Project must meet these to be eligible. Indicate resource types.**

| RESOURCE TYPE |
|---|
| Wind: |
| Landfill gas: |
| Digester gas: |
| Other eligible biomass1 (type): |
| PV Solar: |
| Solar Hot Water: |
| Geothermal: |
| Eligible hydroelectric2: |
| Waste: |
| Other: |

**PROJECT INFORMATION**

| **Project Costs** | |
|---|---|
| Total cost: $ | |
| Amount requested: $ | |
| Applicant cost share: $ | |
| Key Stakeholder Endorsements/Partners: | |
| Other Funding and revenue sources: | |
| Project start date: | Project completion date: |
| Project Location: | |

| **Project Technical Details** |
|---|
| Expected power output (kW): |
| Expected annual power output (kWh): |
| Estimated lifetime of project: |
| Expansion capability: |
| Please provide technical detail of the proposed project (*Attach specifications/drawings*) |
| Maintenance needs and schedule: |

| **Benefits of Project** |
|---|
| Faculty involvement: |
| Student involvement: |
| Educational component: |
| Estimated GHG reductions: |

| **Project Value:** |
|---|

**Please indicate how the proposed project aligns with the core mission of UVM:**