



Creating a Campus Sustainability Revolving Loan Fund

A Guide
for Students

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AASHE
Association for the Advancement of
Sustainability in Higher Education

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AASHE is a professional, membership-based association of colleges and universities in the U.S. and Canada. Its mission is to promote sustainability in all sectors of higher education - from governance and operations to curriculum and outreach - through education, communication, research and professional development.

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Preface

We began the effort to create a campus sustainability revolving loan fund as students at Macalester College during the Spring semester of 2006. The further we got into it, the more we got excited about this financial mechanism. We found ourselves meeting with tax lawyers, investment experts and administrators about cost-savings, non-profit legal status, state renewable energy incentives, and the like—concepts that usually don't arouse much interest among students. Yet hidden behind the mundane financial lingo was a powerful idea for greening our campus—one that is as revolutionary as it is practical: the idea of funding environmental projects through the savings that they generate. A revolving loan fund can enable projects both amazing and ordinary that reduce environmental impacts while creating opportunities for even more projects. We call our fund, which is oriented toward energy efficiency, conservation, and renewable energy, the Clean Energy Revolving Fund (CERF).

At the time of this writing (spring 2007), we have received commitments of nearly \$70,000 for the fund, formed a diverse managing board, and started to develop projects. Most of the work has been done by members of the Macalester Conservation And Renewable Energy Society (MacCARES), a student organization. We're currently researching innovative energy technologies for our campus, working on final negotiations for a stake in an industrial-scale wind turbine and creating an "EcoHouse" dorm as a model for green retrofitting. Our Environmental Studies Senior Seminar is fundraising for the CERF as its major project. We have been surprised and excited by the speed with which this project has taken shape and the dynamism propelling it forward.

Realizing what a powerful tool such a fund can be for campuses across the county, and encouraged by the support that the CERF has received from the college's administration, experts, and our fellow students, we have decided it is important to disseminate the idea. Many thanks to AASHE for making this possible.

This guide contains key background information about revolving loan funds and provides step-by-step directions for establishing a student-led revolving loan fund on your own campus. It's a work in progress, as our own fund is still in its infancy. Even so, we hope that you will be as excited as we are about the power of revolving loan funds, and that our work will help you in yours.

Best of luck,

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The Case for a Revolving Loan Fund

All revolving loan funds operate on a fairly simple premise: An initial sum of money is set aside for the fund. The fund then finances sustainability projects that have a quantifiable monetary savings or return - such projects abound in the realms of renewable energy, energy efficiency, and energy conservation. A portion of the returns from these projects is reinvested into the fund until the project has been paid off. The money is then reused for more projects. Some loan funds are designed to grow over time, so they can provide ever-greater benefits. These funds require that projects return slightly more money to the fund than the inflation-adjusted project cost. This does not deter projects because even with this requirement, loan fund money is easier to get and less expensive than borrowing from traditional sources, such as banks.

This simple mechanism has a number of benefits:

Reduces the negative environmental impact of the college or university.

Investing in alternative energy sources and improving the efficiency of heating, insulation, lighting, or water use can significantly lessen a campus's environmental impact—while reducing college utility bills. *Having a revolving fund addresses a major roadblock in campus greening: high initial costs make many sustainability measures difficult for colleges and universities to finance, despite the fact that these projects often have long-term cost savings. A revolving fund capitalizes on the long-term profitability of sustainability projects by covering these initial costs while securing the return they produce for future initiatives, making such projects much more feasible.*

Saves the college money.

This is a crucial selling point for university administrators. Savings or returns from projects funded by Macalester's CERF are divided between a "project recipient" (Facilities Management, for example) and the fund. The recipient pays a pre-determined percentage of its savings—typically 90%—back into the CERF until the initial costs plus an additional percentage (allowing for growth) are repaid to the fund. After that point, the recipient receives the full cost savings of the project, which can amount to over 30% of the project's costs per year. By reducing an institution's energy consumption, the fund can also help protect the institution from energy cost spikes, which can place considerable financial pressure on colleges.

Educates and empowers students.

Colleges and universities are traditionally the cradle of social change, educating around 14.5 million students annually in the U.S. Today, campus greening is rapidly gaining momentum, as colleges and universities embrace green building, innovative recycling, local food initiatives and other environmentally conscious practices. There are many forces encouraging campus greening, but action is often delayed because of the initial cost of projects. Revolving loan funds could become engines for the college sustainability movement, financing the projects of student environmental leaders while simultaneously raising awareness, generating funding for larger projects, and giving campuses an effective, reliable method for financing projects with both short and long payback periods.

Steps for Creating a Student-led Revolving Loan Fund

This section describes five key steps you can take in order to create a CERF-like fund for your campus.

1. *Develop a proposal*

The first step is to write a proposal laying out how your revolving fund will operate. The proposal should specify: a) how savings will be split between the project recipient and the fund; b) how funds can be used; c) who will comprise the board; d) how the board will make decisions; and e) what the legal status of the fund will be. Each of these issues is discussed in greater detail below.

a. Allocation of savings

At Macalester, 90% of the estimated savings from CERF projects are paid back to the fund annually until 110% of the project cost, adjusted for inflation, has been repaid. Alternatively, for longer term projects, 50% of the estimated savings may be paid back annually until 125% of the inflation-adjusted cost has been repaid. There are many workable formulas for distributing the savings. Some are designed to grow the fund over time, while others maintain a constant pool of money, only growing in response to inflation. Whatever formula you choose, be sure to create a structure that is flexible enough to work with both long-term and short-term payoffs.

b. Usage of funds

In specifying how loan funds can be used, make sure you allow your fund to do everything you want it to do. For instance, we created the option to invest CERF funds in socially responsible mutual funds and other investment instruments so that we would have the flexibility to use these strategies to generate start-up income for the fund. At the same time, it's important to build in enough rules to ensure that the fund will stick to the original goals. Some revolving loan funds include stipulations that funding can only be used to finance projects with a certain payback period (often 5 years or less). Such a provision can help achieve a strong overall return on investment; however, it also means that worthwhile sustainability projects with longer payback periods could go unfunded.

One way to get around this is to allow “bundling” of projects with quick paybacks and those with longer paybacks into a single application that has an overall payback within the limit. Under such an approach, it is important to realize that each time an “unbundled” project with a quick payback is funded, an opportunity to finance a project with a longer payback is lost. We opted not to require a particular payback period, and instead gave the CERF Board the responsibility to choose a mix of projects that will achieve a reasonable overall return on investment.

c. Composition of the board

Who will decide how your fund invests its money? It is important that relevant campus bodies have an opportunity to appoint board members and remain represented, and that no single campus entity has full control over the fund. It's a good idea to keep the board small so that it can remain effective - perhaps three to seven people. Our board consists of two students (one chosen by the Campus Environmental Issues Committee and the other by Student Government); an administrator appointed by the president; a faculty member approved by faculty committee; and an alumnus chosen by the rest of the board. We may ultimately include a trustee as the fund grows in resources and campus impact. As you design the board for your fund, make sure that students maintain their voice in the fund's management. Think also about how to

Campus Sustainability Fund Examples

By Julian Dautremont-Smith

There are many possible ways to structure campus sustainability revolving loan funds and similar funds. This section highlights several different funds that might provide useful models for your own campus.

Harvard University Green Campus Load Fund (GLCF)

Started in January 2002, Harvard's GLCF provides zero-interest loans for projects that reduce the University's environmental impacts and have a payback period of 5 years or less for existing buildings and 10 years or less for renovations and new construction. For renovations and new construction the fund can only be used to cover the cost difference between a code compliant option and the high performance option. The fund began with a \$3 million allocation from the Harvard bank to the Harvard Green Campus Initiative (HGCI). In its first two and a half years of operation, GLCF-funded projects saved the University just under \$900,000 a year, for an average return on investment of over 30 percent. As a result of this impressive performance, Harvard's President doubled the fund size in December 2004, and again in April 2006, producing a total fund size of \$12 million. In 2006, President Summers said that "The best investment in the University is not the endowment but the Green Loan Fund."

Innovatively, loans of up to \$20,000 are available for feasibility studies supporting early project start-up efforts, and loan funding is also available for solar photovoltaic (PV) projects, though PV project loans must still be repaid within 5 years even though actual pay back periods are much longer for PV. In addition, applicants are allowed to "bundle" multiple projects into a single loan fund application, as long as the payback period of the bundled projects does not exceed 5 years. The fund is administered and marketed by the staff of HGCI, which works across Harvard's schools and departments to assist in continuously identifying viable proposals. In 2007, an annual administration fee was applied to all future loans to cover the general costs of running the GCLF. A GCLF Advisory Committee, made up of central administrators and facilities staff, reviews project applications. This peer review process is designed to facilitate sharing best practices between facilities staff. To date over \$8 million has been invested in over 160 projects across the campus.

Macalester College Clean Energy Revolving Fund (CERF)

As described in this report, Macalester's CERF was established in spring 2006 with \$27,000 in funding from the Macalester College Student Government and Macalester's Environmental Studies department. CERF provides loans

for projects that save money and advance sustainability on campus. CERF may also fund projects that don't have a financial return if it provides striking sustainability advantages and doesn't threaten the long-term viability and success of the fund. CERF is administered by a 5-member board comprised of two students, one college administrator, one faculty member, and one alumnus.

Connecticut College Energy Conservation & Efficiency Fund (ECEF)

The ECEF was established in 2005 with a \$1000 donation to the Renewable Energy Club from an alumnus/trustee. The fund provides capital to help finance infrastructure upgrades or conservation campaigns that make a measurable and demonstrable reduction in Connecticut College's energy use. The College then uses the savings generated by the project to repay the ECEF loan plus market interest rates. The interest rate and loan repayment schedule are negotiated on a project-by-project basis. The ECEF is administered by the College's Environmental Model Committee with the assistance of the Finance Office and Physical Plant. The Committee is made up of representatives from all areas of the campus community.

University of Maine Green Loan Fund

In December 2005, the University of Maine Board of Trustees authorized the Treasurer to allocate up to \$300,000 from the University of Maine Foundation for the purpose of establishing a Green Loan Fund. The fund provides loans to campus departments for sustainability projects with a payback period of less than 5 years. The recipient departments use the savings to repay the principle, but pay no interest on these loans. However, University of Maine's student government pays interest on all loans at one percent above the going rate of five-year federal treasury bonds. The fund is administered through the Office of Vice President for Administration and Finance.

University of Michigan Energy Conservation Measures Fund (ECM Fund)

University of Michigan's ECM Fund does not make loans and is not technically a revolving loan fund. However, it is similar in how it helps bridge the disconnect between Capital and Operating budgets that often hinders financing of sustainability projects on campus. It provides an alternative model that may be more appropriate or feasible for some institutions than a revolving loan fund. The ECM Fund was established in 1987 with initial seed funding of \$2 million from the General Fund Utilities Budget

continued...

to help finance energy conservation measures in General Fund buildings. Approximately 50 energy conservation proposals receive support from the fund each year. The fund is administered by a 4-member Energy Conservation Committee that includes facilities staff and a faculty member who review energy conservation proposals submitted by energy management engineers.

The fund has been through several different phases since its creation. From 1987-1997, a calculated reimbursement of savings from funded conservation projects was deposited into the fund at the end of each fiscal year. From 1997-2003, the fund received an annual allocation from the General Fund Utilities Budget of \$2.5 million (instead of the reimbursements). This allocation was made on the basis of a study projecting annual savings of up to \$5.7 million that would come with the allocation of \$2.5 million dollars annually over a 6 year period. During this phase, funded projects had to have a payback period of less than 5 years. Since 2003, the fund has received an annual allocation of \$1.5 million, again on the basis of projections that savings of \$1 million annually would result from such an allocation over a 5 year period. In this current phase, projects utilizing durable equipment with a 20-year expected lifespan and up to an 8-year payback are eligible for funding. Energy savings generated from projects financed by the ECM fund are tracked annually through

metering and other data analysis to justify and support the annual funding allocations.

Texas LoanSTAR

The Texas LoanSTAR (loans to Save Taxes And Resources) Program was initiated by the Texas Energy Office in 1988. The statewide program provides low interest rate loans for energy efficiency and renewable energy projects in public buildings, including those owned by state agencies, school districts, state colleges and universities, and local governments. Projects financed by LoanSTAR must have an average simple payback of ten years or less. LoanSTAR's New Construction Program offers loans to finance the incremental cost increase between standard efficiency equipment and high efficiency equipment in buildings not yet constructed. As of April 2006, the \$100 million fund had made 187 loans, including 46 to institutions of higher education, and achieved cumulative energy savings of over \$199 million dollars. The initial funding source was petroleum violation escrow funds from the federal government. Texas LoanSTAR is administered by the Texas State Energy Conservation Office. Texas LoanSTAR is a useful model for public institutions to consider, especially when the funds to start a revolving loan funds are unavailable at the institutional level. In these cases, it may be appropriate to join with other institutions to advocate for the creation of a statewide (or system-wide) revolving loan fund.

For more information about these and other similar funds, please visit:

<http://www.aashe.org/resources/rifs.php>

ensure that the board remains responsible to the campus community—board members should be actively and personally interested in the fund as well as responsible to the various campus bodies they represent.

d. Decision-making process

Will decisions be made by consensus, majority vote, or weighted majority? Will there be a chair of the board, and how much power will the chair have? How often will the board meet, and how will it communicate in the interim? All of these concerns should be worked out in your proposal. When crafting the fund, think about the long term. Design it so that creative engagement will be encouraged but abuse will be avoided. You won't be here to manage the fund forever so you have to make sure things don't go wrong once the original creators graduate.

e. Legal status of your revolving loan fund

You will need to find out under what status your fund can operate: as an independent fund under the college or university charter, as a campus program, as an affiliated non-profit, or with some other status. An important goal is to ensure both strong student affiliation and connection to the school itself. The Macalester CERF is a "dedicated fund" that is part of the college. In this way, we are under Macalester's non-profit status and have an explicit connection to the college. We have a "covenant" with the college that precludes the use of money in the fund for any other purpose than that specified in the covenant. Our hope is that Macalester's CERF will one day have a very large amount of money, and that the covenant will keep it from being raided for other expenses. Our charter details how the CERF works. We recommend that you talk to

a wide variety of campus leaders and experts before writing the charter, and be willing to modify it as needed.

Both the Covenant and Charter for the Macalester CERF are included in the appendices to help you draft your proposal. Our original proposals looked a lot like the Charter. We have re-written the Charter dozens of times to avoid any confusing language and to rule out obvious opportunities for misuse.

2. Build support from a wide variety of campus leaders

To build support for the creation of a revolving fund, you will need to have lots of personal meetings with people from all across campus.

At Macalester, we discussed the creation of a CERF extensively with administrators, faculty, facilities staff, student leaders, community members, alumni, and others. While each project is unique, you will probably want to talk to the following people at minimum: a) an administrator adept in sustainability projects and/or campus independent funds, b) a student government leader knowledgeable about campus administration and governance, c) faculty in diverse fields, from environmental studies to economics to physics, who can offer excellent advice and support, d) professionals - including community members, alumni, and staff - with expertise in sustainable investments; energy law or environmental law, and finance, e) the institution's facilities manager, who will be a central partner in implementing campus projects, f) the treasurer or chief financial officer, and finally g) the president, whose support will be essential in reaching the Trustees for additional backing and expanding your fund in the future. The expertise and support these people can provide is priceless, and the wider the variety of people you talk to, the better you can fine-tune the proposal to serve everyone involved. Be open-minded about suggested changes to your proposal. In order to be successful, a loan fund has to appeal to each member without compromising its overall vision.

When describing a proposed loan fund to a specific audience it is important to tailor your presentation to how the group defines success. For example, trustees will want to hear about the financial benefits for the college, while students might be more interested in discussing specific projects that a fund will enable. Make sure administrators understand both the financial and college-prestige appeal of your fund; that faculty understand its utility as a hands-on educational tool to design, propose, and implement sustainability projects using a variety of skills; that alumni and parents understand how a loan fund acts as an innovative opportunity for environmental leadership; and that students realize how they can use the revolving loan fund to make a difference on campus and in the wider world.

In addition to guiding the initial design of your fund, these conversations will help you identify individuals who would be interested and qualified to serve on the board and can continue to guide its development over the long-run. At Macalester three people from whom we sought advice (an independent-fund administrator, an environmental studies faculty member, and an alum with expertise in sustainable investments) are now members of the board.

3. Set funding goal and identify best funding sources

Don't be afraid to think big and include long-term goals, but be realistic. You want the fund to be big enough to have a real effect, but practical enough to pitch to administrators. Harvard designated several million dollars for its centrally managed fund; by comparison, Macalester's fund has an initial goal of \$100,000. When planning to raise money consider several sources (see the sidebar for a list of potential funding sources). Starting with a small amount of funding and implementing some successful demonstration projects can be a way to secure much more significant funding from powerful decision-makers. You will likely need a variety of funding sources to reach your goals.

As you seek funding, make sure you have some initial project ideas so that potential funders have some idea of what you're talking about. Example ideas for campus-based projects include installing water conservation devices, purchasing energy efficient appliances, generating biodiesel from cafeteria oil, renovat-

Potential Funding Sources

There are many potential funding sources that can help provide the initial capital to establish a revolving loan fund.

a. Student Government

The Macalester College Student Government provided \$20,000 in seed funding for the Macalester CERF. We believe it is important to get at least some funding from a student-controlled source because it gives students a clear stake in the fund, shows student support for the fund, and provides leverage in persuading administrators to provide funding. Further, demonstrating that the fund will exist even without support from the administration will affirm the strong intent of students, and will invite more powerful backing from administrators who are anxious to be involved in any major initiatives. In our experience, administrators sometimes oppose projects like the creation of a revolving fund simply because they don't want to be left in charge of running and funding such projects. Once they realize the depth of student support for such a fund, they are likely to be more interested in working with students to create the fund.

b. Student Fees

Students at some institutions have raised substantial funds for sustainability projects by increasing their student fees. Such increases usually must be approved by the student body through referendum, and they generally receive wide student support. Raising student fees to fund the creation of a revolving fund provides a guaranteed infusion of funds each year and offers leverage in convincing administrators to provide funding.

c. Academic Departments

The Macalester CERF was given \$7,000 by the Environmental Studies department, which has a history of being very supportive of student initiatives. The same may be true on your campus. Engineering, economics, or other departments may also be interested.

d. Campus Administration

Administrators can be a huge funding source if you can demonstrate that a revolving loan fund would provide significant benefits for the financial, environmental and competitive status of your school. Look over your college or university's budget and see where there might be money available. Large investments will probably need to be approved by the Board of Trustees or

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ing science labs with energy recovery ventilation systems, and installing glazed panes on campus buildings to reduce heat demand. There are many other possibilities, and if you have a really innovative project in mind, tell people about it. The most important thing is that your project ideas have the support of the people who will actually implement them, such as your facilities manager. If the potential funder asks the facilities manager about the project, you want them to get a positive response.

We made it clear that the majority of our projects would be campus-based, but we also allowed off-campus investments, including a very specific opportunity only available in Minnesota: Community-Based Energy Development. Through this unusual mechanism, a community partner (e.g., Macalester) finances a small percentage (ours will be 1%, or about \$30,000) of an industrial-scale wind turbine that is financed primarily by a corporate equity investor. For the first ten years, the community member, who is technically responsible for managing the turbine, receives a maintenance fee of around \$10,000-\$15,000 depending on the contract, allowing rapid recovery of investment. After the first 10 years, ownership transfers primarily to the community partner through a legal mechanism known as the Minnesota Flip model; we could potentially receive over \$100,000 a year in energy sales after this point. This incredible opportunity gave us a clear immediate target for financing (\$30,000, which we reached) and a sense of urgency, since such deals are very attractive and go quite fast.

As this initial project and other smaller campus projects progress, we will push for administrative financing of the CERF, arguing that we have ensured its long-term viability, but that immediate funding is needed to create a big impact over the short term.

4. Target key decision-makers for funding and support

You'll need to identify who the key decision-makers are. This is connected to how you expect to be funded and how the revolving loan fund will be managed. For instance, as an independent fund, Macalester's CERF does not need approval, only funding. Tailor your argument to those decision-makers and try to understand what their concerns will be.

We started by soliciting letters of support from the Chair of Environmental Studies and from the Campus Environmental Issues Committee, which coordinates the initiatives of a coalition of environmental

its equivalent. They can be convinced of the importance and financial reasons for such an investment, as well as inspired by the visionary leadership it proposes. For instance, the president of Macalester College committed \$40,000 to the CERF from his discretionary spending budget.

e. Outside Grantmakers

Most foundations and funds do not want to make grants to other funds so it can be difficult to secure outside funding for the establishment of a revolving fund. However, there are sure to be exceptions, and there may be ways around this restriction. We are seeking grant funding for specific projects that the college would agree to incorporate into the CERF as if they had been funded directly from it. Some grantmakers may be more willing to fund these projects if a revolving fund is involved because their investment will have a long-term financial multiplier effect by its connection with such a fund.

f. Alumni

An innovative environmental student initiative like the creation of a revolving loan fund can be a potential fundraising asset for an institution since alumni are often interested in these projects. Your institution's alumni relations department may be able to help you make connections with and solicit funding from alumni. However, when approaching your alumni relations department, be aware that they may see your proposed alumni funding solicitation as competing with other alumni fundraising campaigns and will therefore be reluctant to work with you. Being sensitive to this fact, and designing your proposed alumni solicitation to minimize competition with other fundraising campaigns should help alleviate these concerns.

groups on campus. Environmental Studies was easy to convince, since the CERF will provide a perfect opportunity for academic field experience.

Securing financial support from the Macalester College Student Government (MCSG) was more challenging, but the democratic design of the CERF and the widespread student desire to support renewable energy and campus sustainability ultimately led MCSG to fund CERF. MCSG has a Capital Fund devoted to on-going campus projects: our \$20,000 request was a major portion of that fund for the year and we needed a strong effort to ensure its approval. We talked directly with a number of reps who we were not sure would support the proposal and made sure both they and the Financial Affairs Committee knew what we proposed and that the representatives were well-informed before the vote. If someone does not support the need for a CERF, talk to them! We discovered that a majority of those opposed simply didn't understand enough of the proposal to allocate such a large amount of money. We presented at two Legislative Body sessions, held once a week at Macalester, just to explain the idea. Next, a session scheduled for 15 minutes became an hour of intense debate, after which the CERF was approved by an overwhelming majority, despite a few vocal dissenters. We had forgotten to remove a line related to a previously rejected idea from the charter; this caused a lot of problems. Review your proposal *very often* as it changes to make sure it says what you actually mean. MCSG added a few stipulations to the charter: first, that one student member should be chosen by the student government, and second, that a committee had to be established to ensure that the final charter was as expected.

MCSG's support was critically important to our success – it was our primary initial funding source, and gave us leverage in asking for financial support from the Macalester administration.

As you work to gain support from key decision-makers, keep in mind that there are multiple ways to reach them. Getting articles in campus newspapers, generating buzz among students, and building support from student leaders, key faculty, and alumni will ensure that decision-makers hear about the revolving fund from many different sources.

5. Formalize your revolving loan fund and get moving!

Once you have funding and general approval from a wide range of campus stakeholders, it's time to get the fund set up. In addition to a finalized charter, a revolving loan fund will need a covenant - a written statement of the intended relationship between the fund and the college. The covenant will require statements of which actions are forbidden and which are encouraged. This is meant to guide the fund, and prevent future use of the funds for purposes contrary to its intended vision. This covenant may or may not require the formal endorsement of the college administration—in our case it did not, as the small scale of the campus community and the independent nature of the fund made recognition of the covenant much simpler.

At this point, you will also need to establish your board, the members of which you should have identified and invited to participate beforehand. As stated earlier, they need to be committed individuals from diverse backgrounds who all want to help design projects, review financial proposals, deal with legal issues, and work with campus administrators, faculty and students.

You should make sure that the candidates for the board receive formal approval from the appropriate decision-makers as stated in your charter and that the campus bodies being represented feel fully comfortable with the person who will be representing them. It's always important to make sure that the people you are trying to work with are both excited about the idea and responsible to the campus body—student, faculty, or administrative—that they are representing. Finally, you don't want to alienate an important funding source or decision-maker by not allowing them input or influence on the composition of the Board.

When you're ready and have a starting project, meet, ratify the charter, and start working. Assuming you haven't received a huge chunk of money and don't have great publicity up front, the board will probably be involved in securing further funding, publicizing the availability of the fund for public involvement, and in identifying individuals to fill remaining Board slots, such as (in our case) the trustee board member. Make sure you consult all relevant stakeholders; many projects will involve liability issues, changes to the physical campus, and changes in student life, all of which need to be discussed thoroughly with appropriate decision-makers and publicized to the whole campus. Try to work with the local community as well—integrate community members into the process by funding projects off campus (if you allow this in your charter) and getting the transformative power of revolving funds going!

Closing Comments

Campus environmentalism has too often been viewed as yet another interest group shouting for its own "pet" concern. To redefine our image, we must propose integrated actions with widespread impacts. We must position ourselves as offering a new way to do business, guided by a world-view that puts its faith on the continued functioning of the planet. We do not just want "sustainable" practices implemented—we want to implement them. It's not just the "impact" we care about, it's also the relationships we're creating. Revolving loan funds are structurally rooted in a systems-based logic that works well within bureaucracies, yet their guiding vision and ideology fosters community, democratic decision-making, creativity, and ecological re-connection. The Macalester CERF is not about resource management; it's about collectively building a better operating system. We sincerely hope that this guide will inspire you in the construction of your own revolving fund to ride the waves of change to a better future.

Appendix A: Macalester CERF Charter

Mission

The mission of the Clean Energy Revolving Fund (CERF) is to encourage global sustainability¹ on campus and in the community, by funding innovative projects that demonstrate environmental leadership and economic benefit. CERF will empower Macalester College and its students to build a sustainable community. CERF will foster local projects that further the worldwide movement for a sustainable future. As an independent fund at Macalester College and administered by members from all parts of the Macalester community, CERF will fund renewable energy, energy efficiency and other cost-saving projects that demonstrate sustainable design.

Goals of CERF

- To foster sustainable design and environmentally sound technologies and practices on the Macalester College campus.
- To respond to budget shortfalls caused by energy prices by funding energy efficiency or renewable energy projects that benefit Macalester College.
- To educate and inspire all members of the Macalester community about the potential for—and benefits of—conservation and renewable energy innovation.
- To act as an exemplar of socially and environmentally responsible financial practices.
- To serve as a role model on sustainability initiatives for other institutions of higher education, community groups, non-profit organizations, businesses, and governmental bodies.
- To sustain itself financially and functionally into the foreseeable future without compromising— where possible supporting—other student, community, and institutional initiatives for a socially and environmentally just, benign, and sustainable world.

After receiving initial start-up capital, CERF will be entirely self-funding and will grow over time. Through a revolving mechanism drawing cost-savings from projects, CERF will replenish the fund while providing cost-savings to Macalester. CERF will make it easy and efficient for students and other Macalester community members to design projects. This will provide an unrivaled hands-on opportunity for individually structured environmental education while raising the awareness of the entire community. Furthermore, it will demonstrate that, contrary to common belief, self-funding sustainability projects are a crucial part of fiscal stability.

Structure of CERF

CERF will be managed by “The CERF Board,” a body composed of one trustee, one college administrator, one faculty member, one alumnus/ae, and two students. The CERF board will act as a decision-making, financing, and implementing body for conservation, renewable energy, and sustainability initiatives on Macalester College’s campus.

[1] Sustainability as defined by the Brundtland report: meeting the needs of the present generation without compromising the ability of future generations to meet their needs.

One member must be a Macalester college trustee approved through the board of trustees.

One member must be a Macalester College administrator approved by the president of the college.

One board member must be Macalester College faculty appointed by the faculty, if possible from environmental studies or a related field.

One board member must be a Macalester alumnus/ae. Alumni board members with relevant interests and experience will be selected by the CERF board.

Two members must be Macalester students. One will be appointed by the Campus Environmental Issues Committee (CEIC) while the other will be an elected member of the Macalester College Student Government (MCSG). The MCSG representative will be approved by the MCSG.

Terms will be for two years, excepting the MCSG representative who shall be approved annually. Terms can be modified based on scheduling. Any board member can be reappointed by the designated body for further terms. New, qualified board members, however, should be appointed when possible. Should a board member resign, a replacement should be chosen through the established method at the earliest available opportunity.

Procedural Process for CERF

The CERF board members will communicate primarily via email on smaller proposals and ideas. The board will meet at least three times a year—while classes are in session—to discuss and approve larger projects, investments and management strategies. Co-chairs will be elected by the board for a one-year term. Any board member may propose a project, and other members of the Macalester community may also present proposals to the Board. While unformulated ideas may be presented briefly for Board discussion, suggestions, and help with proposal development, only thorough proposals with a clear target, financial plan, implementation plan and time line will be voted on.

It is expected that Macalester Conservation and Renewable Energy Society (MacCARES) will serve as a primary agency to help community members develop proposals, and anyone with an idea will be encouraged to work with the organization to develop a plan, although proposals from any source will be accepted for review. Cooperation, involvement, and discussion with CEIC, Facilities Management, and any other committees, departments, or other entities relating to the project will be strongly encouraged.

At meetings, the board will discuss policy, management strategies, and large proposals, and may modify these proposals either by scale, implementation plan, or financial parameters before voting on the proposal. Any board member may call for a vote. Consensus should be achieved where possible, but decisions will be made by majority rule subject to the consensus requirements cited below. Proposals for projects under \$2,000 may be proposed through e-mail (other members must be emailed with notification of the proposal) and the co-chairs may approve such proposals two weeks after email notification, unless another member objects.

Should a proposal pass, the board and non-board participants must proceed with implementation as rapidly as possible, including funding, installation, advertising and education. Students who are not board members should be involved in proposal implementation whenever possible, particularly in publicizing the project and community education.

The board may approve by consensus a finance mechanism for a particular project other than the ones outlined below, should the nature of the proposal or existing conditions merit such a change. The board may also modify existing payment plans by consensus at the request of the cost-savings recipient, as long as the alternative maintains the long-term financial viability of CERF. Special flexibility should be given in cases where energy cost pressures, such as unexpectedly high fuel prices, result in the need for a modification, as in allowing the cost saver to receive a higher percentage of the cost-savings immediately by

deferring more of the payment into the future. Requests for such plan modifications, with an alternative proposal, can be proposed to the board by the financial recipient of a project's cost-savings.

The board may send suggestions to various campus bodies as to how they can operate in a more sustainable and/or cost-saving fashion without necessitating additional funding. Such suggestions should be approved by consensus.

The representatives on the board are responsible for presenting a report on the activities of CERF, on an annual basis, to the body they are representing. This report may highlight items of particular interest to their constituency, but should all contain a summary of projects funded by the CERF board, the long-term financial outlook, and the level of community involvement in project activities.

The board may amend this charter by consensus.

Funding Projects

This funding will primarily be used for projects that save money for a specific recipient(s) on fuel, electricity, water, building maintenance, storm water fees, or some other (or multiple) cost source(s) while making a positive impact on sustainability. The designer(s) of the proposal should choose one of the two funding parameters below based on feasibility and financial pressures on the recipient in terms of project size and pay-back period. The board may modify these plans, or an alternative strategy may be developed in the proposal.

From a project's calculated (or best estimate) annual savings, 50% of the cost savings will be paid to the fund by the cost-savings recipient. The other 50% of savings will accrue to the recipient of the project, providing some immediate financial relief. This process will be repeated over subsequent years until 125% of the initial project cost (adjusted for annual inflation) has accrued to the fund. After this point, all further savings will accrue to the project's recipients.

From a project's calculated (or best estimate) annual savings, 90% of the cost savings will be paid to the fund by the cost-savings recipient and the other 10% of savings will accrue to the recipient of the project. This process will be repeated over subsequent years until 110% of the initial cost (adjusted for annual inflation) of the project has accrued to the fund. After this point, all further savings will accrue to the project's recipients.

If at all possible, exact cost-savings measurements should be obtained, but in cases where this is unfeasible or costly, an educated estimate should be used. For example, the known energy savings ratio of a compact fluorescent light-bulb (CFL) should be used where the exact effect on electricity usage of a certain number of CFLs may be hard to measure quantitatively through electricity readings. The CERF board will decide whether exact or estimated savings are appropriate for each project.

Modified payment plans may be designed or approved either from the start or later in project lifespan by request of the cost-savings recipient and approved by the board by consensus should conditions merit. All modifications may adjust the overall inflation-adjusted return goal in accordance with the change in project payment lifespan—accelerated payback should decrease overall return—so modifications should be seen as an adjustment of the balance between the period and the size of payback.

In all cases, project proposals should take advantage of local, state, or federal incentives for renewable energy or efficiency investments. In particular, state revolving loan funding can be used to maximize project investment, by buying back 50% of a project's debt to 0% interest. These incentives are liable to change due to new legislation and the CERF board should advise groups developing project proposals to research governmental incentives to include in their financing plan.

Occasionally, in exceptional circumstances, CERF may approve a project by consensus that does not produce a financial return should it:

- Provide striking sustainability advantages or
- Offset unusually high energy costs, as long as
- Such a project does not threaten the long-term viability and success of CERF because other projects are adequately funding CERF to make up for the loss.

Funds for projects may be used for:

- *Materials or products that constitute the project*—often the primary cost.
- *Professional work, installation, or design*—costs should be minimized when possible, but for some projects, this may be the primary cost.
- *Research and testing or monitoring equipment*—costs should be minimized, barring exceptional circumstances, which must be approved by the board by consensus.
- *Community education, outreach, and publicity*—costs should be minimized, barring exceptional circumstances which must be approved by the board by consensus.
- *Proposal Development*—costs should be eliminated, if possible. Student, staff, and faculty volunteer work should be utilized to the greatest extent possible. The research of proposals, technologies, existing campus conditions, and implementation strategies should be conducted through independent studies with professors to the greatest extent possible. Any campus surveying or similar work should be conducted through student groups such as: MacCARES, the Macalester Conservation Corps (MCC), Macalester's Minnesota Public Interest Research Group (MPIRG), Mac Bike, or MULCH. If possible, any funding required to develop the proposal itself should be found elsewhere, but the board may approve such funding by consensus.
- *Staff and work*—the board may approve a salary by consensus—if possible, for a student employment position—for a work position(s) for a designated project(s) should conditions merit and the added cost still yields cost-savings to repay CERF. In some cases, a work position could be a proposal on its own, as long as over-all cost savings would still be realized. CERF should accept a minor loss should such a position yield dramatic benefits to campus sustainability or show potential to lead to other projects with better financial potential.

Investments and Revenue Generation

CERF may also invest in conventional investment strategies that support its financial viability such as green investment funds, community investing, or money markets, as well as make innovative investments generating direct revenue such as the C-BED project proposal, as long as such investments further one or more goals of CERF without significantly compromising any of the others. To this end, investments that are highly liquid, or have a high rate of return will be particularly favored since they are less likely to lock up funding from core cost-saving projects. However, long term fiscal responsibility and the goals of sustainability, innovation, education, and community engagement should also be kept in mind. Since such investments are not savings-inducing, they will not be subject to revenue-splitting as funded projects are, and should instead be viewed as methods to manage CERF's funding flow in a socially and environmentally responsible manner. Specifically, CERF should not invest in any projects, businesses, or companies which pro-

mote unsustainable practices, non-renewable resources—particularly fossil fuel, nuclear, or large scale hydroelectric—or a culture of disposal.

In certain cases, CERF may solicit loans from outside financiers interested in promoting innovation in environmental sustainability at Macalester. Such loans should be used for large projects yielding a return which can be used to repay the loan.

CERF should identify and apply for grants that support its core mission. In particular, it should seek to partner with grant providers to fund particular projects.

Management and Project Type Parameters

The CERF Board should be open both to smaller, rapid pay-back projects and larger, longer-term ones. All projects should seek to maximize the overall benefits of sustainability in a financially responsible manner. The Board should not exhaust the fund or over-use long-term projects in a single year to the extent that the amount of funding available for projects in the subsequent year is less than half that available in the current year. That is, at least 50% of the fund's value in a current year must either be held in a liquid investment or be regenerated through project or investment revenue or payback by the beginning of the following year. This target should be seen as flexible, and should not preclude the funding of any important, large, and long-term financially viable projects.

Applicable sustainability initiatives vary widely in type, source of savings, scale, and pay-back period. Simple projects such as refitting all incandescent light-bulbs on campus with compact fluorescent lamps or weatherizing old windows with more insulating glass and frames (lighting or weatherizing) tend to have one to two year payback times while others (photovoltaic cells for example) have pay-offs around 15+ years and are relatively expensive for installations of any size. Others, such as solar thermal or geothermal (alternative heating systems), are somewhere in the middle, but paybacks depend highly on fuel prices, which are highly variable but tend to rise over time. Specific campus conditions (for example, an efficient district heating system) also affect pay-off rates. All proposals should therefore be developed with a finance plan reflecting such conditions as accurately as possible and with the participation, advice, and/or help of many campus community members.

Appendix B: Macalester CERF Covenant

MISSION

The Clean Energy Revolving Fund's mission is to encourage global sustainability¹ on campus and in the community, by funding innovative projects that demonstrate environmental leadership and economic benefit. CERF will empower Macalester College and its students to build a sustainable community. CERF will foster local projects that further the worldwide movement for a sustainable future. As an independent fund at Macalester College and administered by members from all parts of the Macalester community, CERF will fund renewable energy, energy efficiency and other cost-saving projects that demonstrate sustainable design.

GOALS OF CERF

1. To foster sustainable design and environmentally sound technologies and practices on the Macalester College campus.
2. To respond to budget shortfalls caused by energy prices by funding energy efficiency or renewable energy projects that benefit Macalester College.
3. To educate and inspire all members of the Macalester community on the potential for, and benefits of, conservation and renewable energy innovation.
4. To act as an exemplar of socially and environmentally responsible financial practices.
5. To serve as a role model on sustainability initiatives for other institutions of higher education, community groups, other non-profit organizations, businesses, and governmental bodies.
6. To sustain itself financially and functionally into the foreseeable future without compromising— where possible supporting—other student, community, and institutional initiatives for a socially and environmentally just, benign, and sustainable world.

Through a revolving mechanism drawing revenues from projects, CERF will replenish the fund while providing cost-savings to Macalester. This will provide an unrivaled hands-on opportunity for individually structured environmental education while raising the awareness of the entire community. Furthermore, it will demonstrate that, contrary to common belief, self-funding sustainability projects are a crucial part of fiscal stability.

FUNDING PROJECTS

This/CERF funding will primarily be used for projects that save money for a specific recipient(s) on fuel, electricity, water, building maintenance, storm water fees, or some other (or multiple) cost source(s) by making a positive impact on sustainability. The CERF Board should be open both to smaller, rapid pay-back projects and larger, longer-term ones. All projects should seek to maximize the overall benefits of sustainability in a financially responsible manner.

[1] Sustainability as defined by the Brundtland report: meeting the needs of the present generation without compromising the ability of future generations to meet their needs.

EXAMPLES OF PROJECTS

Efficiency Investments: Installation of high-efficiency pumps, equipment, lighting, boilers, and air conditioners. The weatherization of campus windows with modern high-insulating glass and frames, and installing energy recovery ventilators on Olin-Rice ventilation hoods. Payment of the marginal difference between more efficient models of equipment.

Water Conservation: Repairing water leaks and installing additional low-flow appliances, installation of systems that recover or reuse wastewater.

Renewable Fuels: Manufacture of biodiesel from waste oil from cafeteria and local businesses or other uses of clean biomass-based fuels not requiring extensive additional fossil energy inputs.

Renewable Energy: The installation of on-campus renewable energy systems, such as wind power, solar thermal or photovoltaic, geothermal, biomass, biogas, and micro-hydro-power. Investing in community-based renewable energy projects.

Green Building: Investing in equipment or design of green building, like passive solar heating or green roofing, that provides measurable cost-savings.

EXAMPLES OF INAPPROPRIATE PROJECTS

Fossil Fuels: CERF should not invest in any project using fossil fuels, unless the project leads to a significant net decrease in the consumption of fossil fuels and greenhouse gas emissions.

Non-renewable Resources: CERF funding should never be invest in or used to develop projects using technologies such as nuclear energy, large-hydroelectric dams, toxic building materials, and other unsustainable practices.

Renewable Energy tags/offsets: CERF funding should not be used for the purchase of green tags, renewable energy certificates, or other offsets. Instead, CERF should aim to invest in projects that provide economic savings and environmental leadership to the college.

Budget Shortfalls: CERF funding should never be used to cover college budget shortfalls, except by investing in projects that meet CERF standards.

Staffing/Salaries: CERF funds must never be used for the following: faculty or staff salary or wages except for in association with a CERF project.

INVESTMENTS

CERF may also invest in conventional investment strategies that support its financial viability such as green investment funds, community investing, or money markets, as well as make innovative investments generating direct revenue, as long as such investments further one or more goals of CERF without significantly compromising any of the others. However, long term fiscal responsibility and the goals of sustainability, innovation, education, and community engagement should be emphasized. Such investments should be viewed as methods to manage CERF's funding flow in a socially and environmentally responsible manner.

CERF should not invest in any projects, businesses, or companies which promote unsustainable practices or use non-renewable resources—particularly fossil fuels, nuclear, or large-scale hydroelectric—or a culture of disposal.

STRUCTURE OF CERF

CERF will be managed by “The CERF Board,” a body initially composed one college administrator, one faculty member, one alumnus/ae, and two students. The faculty representative will be appointed by the appropriate faculty committee. The administrator will be appointed by the President of the college. Of the Macalester student representatives, one will be appointed by the Campus Environmental Issues Committee (CEIC) while the other will be an elected member of the Macalester College Student Government approved by the MCSG. The Macalester alumnus/ae will be selected by the CERF board. A member of the college Trustees may join the Board as is appropriate for its role in broader Macalester management.

The CERF board will act as a decision-making, financing, and implementing body for conservation, renewable energy, and sustainability initiatives on Macalester College’s campus.

Terms will be for two years, excepting the MCSG representative who shall be approved annually. Terms can be modified based on scheduling. Should a board member resign, a replacement should be chosen through the established method at the earliest available opportunity.

PROCEDURAL PROCESS FOR CERF

At meetings, the board will discuss policy, management strategies, and large proposals, and may modify these proposals either by scale, implementation plan, or financial parameters before voting on the proposal. Any board member may call for a vote. Consensus should be achieved where possible, but decisions will be made by majority rule subject to the consensus requirements cited in the Charter. Proposals for projects under \$2,000 may be approved by the co-chairs between board meetings unless another member objects.

The board may send suggestions to various campus bodies as to how they can operate in a more sustainable and /or cost-saving fashion without necessitating additional funding.

Appendix C: Macalester CERF Financing Plan

A fund designated solely for efficiency and sustainability projects will prevent rising energy costs from inhibiting projects which would reduce the pressures from those costs. Such an innovative solution would make Macalester a national leader with a creative model for financing sustainability which other institutions could follow. Harvard's example has shown that revolving mechanisms for sustainability projects are very lucrative economically (Harvard's \$6 million Green Campus Loan Fund has achieved an average annual Return On Investment of 27.9%¹). However the full integration of community led educational innovation with the financing technique has not been utilized by Harvard or other revolving funds. Thus our fund would be a particularly apt representation of Macalester's engagement, diversity and dynamism.

FINANCING CERF

Pending approval, CERF will receive phased start-up funds totaling \$100,000 from the following sources:

Phase I: Spring 2006 – \$27,000

Approved:

\$20,000 from the MCSG capital fund. Approved by the MCSG LB on April 18, 2006, conditional on the inclusion of a MCSG representative to the CERF board – included April 22.

\$7,000 from Environmental Studies, approved April 11.

Phase II: Fall 2006 – \$40,000

Approved:

\$40,000 from the president's discretionary funding, allocated as CERF develops projects to utilize it.

Phase III: Spring 2007 – \$33,000

Goal updated early 2007: upon clarification from the administration that CERF will be expanded increasingly in the future should it prove that it can achieve cost savings through student leadership, the students developing CERF have focused on implementing an initial series of projects rather than on securing the original \$100,000 goal. Supporting projects are engaging additional grant opportunities.

If managed well, CERF should have a high rate of return. A similar fund at Harvard University that did not split savings between the recipient and the fund (all savings went directly to the fund until pay-off) achieved average 27.9% return on investment (ROI) through a mix of short and long-term projects. The Midwest provides even more lucrative renewable energy and conservation potential. We should expect a similar average ROI, although it will be split between CERF and project recipients (primarily the college itself), which is more favorable for Macalester since it lacks the unusual financial assets of Harvard.

[1] see <http://www.greencampus.harvard.edu/gclf/achievements.php>

Appendix D: Sample Project Ideas

These are just a handful of project ideas to help you get started:

- Installing motion sensors (vending misers) on vending machines to reduce power usage.
- Installing motion sensors in class rooms and other areas that are unoccupied for long periods of time.
- Renegotiating a washing machine contract and paying the marginal difference of more efficient, front-loading washing machine models, which can further displace dryer usage.
- Paying for building re-commissioning.
- Installing low-flow water appliances.
- Installing high-efficiency pumps, equipment, boilers, and air conditioners.
- Payment of the marginal difference in cost between more conventional and more efficient equipment models.
- Replacing single-pane campus windows with modern high-insulating glass and frames.
- Replacing all incandescent light bulbs with CFLs.
- Installing energy recovery ventilators on science building ventilation hoods.
- Installing solar thermal systems and other renewable heating systems.
- Installing photovoltaic panels.
- Installing wind turbine(s).