

Iowa State University

Live Green Revolving Loan Fund

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Summary

Location: Ames, Iowa

Full-time student enrollment: 23,500

Combined gross square footage of all buildings on campus: 11,095,418

Endowment:
\$412 million as of March 31, 2010

Type: Public

The \$3 million Live Green Revolving Loan Fund (LGRLF) at Iowa State University (ISU) was launched in 2008. The LGRLF is unique in its decentralized implementation structure which allows each department and building to reap the benefits of their own efficiency measures and gives individual departments the incentive to propose resource-saving projects. After modifying budgeting processes to allow for this decentralized structure, ISU administrators created the fund under the leadership of the university president. Since then, ISU's fund has provided capital for more than 11 unique projects throughout campus, focusing on areas such as waste diversion, energy conservation, and efficiency.

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History

Establishing the Fund

ISU has been engaging in sustainable activities for nearly two decades, but it was the launch of the Live Green! Sustainability Initiative in 2008, led by President Gregory L. Geoffroy, which reestablished campus goals and propelled additional efforts to reduce the school's ecological footprint.¹

Under the president's leadership, the university administration laid the groundwork for a revolving fund to finance sustainability projects.

The seed money used to establish the \$3 million fund was collected from interest on previous university investments.

Establishing a Decentralized Budget Structure

When Iowa State University administrators analyzed campus infrastructure and budgeting processes to identify opportunities for efficiency improvements, they discovered a system-wide disincentive for undertaking sustainability projects: the school's centralized budgeting of utilities. Under the existing structure, the school's overall utility budget was determined by total campus energy consumption. In this way, any changes in individual buildings' utility use would be absorbed by the overall campus utility budget. This structure provided very little incentive for individual colleges, departments, and buildings within the university to initiate cost-saving projects.²

Additionally, since individual buildings were not metered to track resource consumption, building owners had no way of calculating their own energy consumption or utility costs. They thus had no understanding of how their buildings impacted the utility budget or complied with campus sustainability goals.

To address these barriers, Facilities Planning and Management staff devised a two-pronged strategy in 2008 that facilitated the success of the Live Green Revolving Fund. First, they implemented a new model for budgeting building operations and maintenance, requiring each individual building to be responsible for paying its own utility bills. Each college or department housed in a building became directly affected by the costs of its building's energy and water consumption. Second, Facilities Planning and Management also installed meters and monitoring technologies for electricity, chilled water, and steam in nearly all buildings.

The decentralized billing system and building meters catalyzed participation in ISU's Live Green Revolving Fund. Merry Rankin, ISU Sustainability Director and Chair of the Live Green Loan Fund Advisory Committee, noted that colleges and departments within the university are now considering ways to reduce their consumption and lower building maintenance costs.



Part of Iowa State's Live Green Revolving Loan Fund has sponsored lighting efficiency projects on campus, such as the TWO-PHASE \$100,000 loan for lighting retrofits in the university's College of Design in 2009. The project has a payback period of 4.6 years and is expected to have an annual savings of approximately \$37,092 per year.

Operations

ISU Live Green Revolving Loan Fund Overview

Year Created: 2008

Size: \$3 million

Source: Administration

Average payback period 3.4 years

Administrator: Director,
Office of Sustainability

Largest project financed:
College of Design lighting retrofits: \$200,000, 4.6 year payback

Fund Oversight and Operations

The LGRLF fund is managed by an advisory committee that reviews and makes recommendations on project applications during the submission process. This committee consists of four administrators, one faculty member, one staff member, and one student representative. Project applications are reviewed on a rolling basis, with the fund's advisory committee recommending projects for approval once a month. The director of sustainability handles all administrative paperwork and procedures following the committee's recommendations; the president gives final approval for a project before implementation begins.³

Building owners go to the LGRLF to secure upfront loans for efficiency projects. The fund's \$3 million is sustained by repayment of project costs as a direct result of realized utility savings. Payments on each loan are expected to begin one year after completion of the project and are due annually until the loan has been repaid. The total amount borrowed from the Live Green Fund must be repaid within five years of a project's completion, even if actual cost savings are not able to cover the repayment amount

on time. The loan recipient is responsible for submitting an annual progress report each year until the loan is repaid. These reports are published and available online to demonstrate the university's Live Green! Initiative in action.

Though the fund charges no interest on loans, it does have the opportunity to increase in size through additional contributions from university donors.

Project Eligibility

To be eligible for loans from the LGRLF, projects must both advance ISU's sustainability goals and accrue sufficient cost savings to fully pay back the loans within a five-year period.⁴

Aside from these requirements, there are few limits to receiving LGRLF loans: any Iowa State department or administrative unit can apply for a loan through the fund, there is no maximum loan amount or maximum construction period, and there is no limit to how often an entity can apply for project funding, although applicants may not have more than two projects being implemented simultaneously.

Performance

Project Data

As of December 2010, \$539,519 has been loaned from the fund in the 2010-2011 academic year.⁵ At that time, the LGRLF had received 16 applications for projects, having fully funded 11 and completed three. Rankin noted: “We have just started to get reports in from some of our projects that have been completed for one [whole] year and are able to make before-and-after comparisons with respect to savings.”

The fund anticipates a 29.1 percent return on investment, equivalent to a \$156,788 annual return per year, out of the \$539,519 invested to date.

Payback periods average 3.4 years for all projects, but active projects range between payback periods of five years to less than one year.

Eight projects are currently in the process of construction and implementation, including:

- Lighting retrofits in the College of Design,
- Air exchange systems updates in the Carver Co-Lab,
- Energy efficiency upgrades in the College of Engineering,
- Heating efficiency upgrades in the College of Human Sciences, and
- Occupancy sensor installations in Reiman Gardens.

The following are illustrative examples of some projects that have been supported by the revolving fund.

Example 1: Dining Compost Initiative⁶

The Dining Compost Initiative aims to divert food waste from landfills and water treatment facilities. The project was proposed by ISU Dining Services staff members, and focused on the installation and maintenance of equipment for collecting pre- and post-consumer food

waste in a campus dining location. The initial project loan was \$45,000. Following the equipment's installation in the fall of 2009, all compostable materials were taken to the new ISU Compost Facility for processing.

The project is expected to generate savings due to reduced landfill and water treatment costs. Additionally, the university's production of compost will result in reduced purchasing of topsoil and soil amendment materials necessary for campus grounds and landscaping needs.

The Dining Compost project's initial costs are estimated by the university to be between \$50,000 and \$100,000. The project's projected annual savings will amount to \$9,000 per year, with a payback period of five years and a realized savings period of 5.5 years. Currently, the initiative is still under observation as a pilot program in the campus' residential dining facilities. If the program produces significant net savings, expansion to other campus dining locations and into the greater Ames community will be considered.

Example 2: College of Human Sciences Computer Power Management Plan⁷

The College of Human Sciences proposed a LGRLF project that focused on energy-saving opportunities in ISU's computer systems. Using \$3,039 from the LGRLF, the College of Human Sciences purchased and installed energy-conservation software on 500 faculty and staff computer stations.



Through start-up funding offered by the Live Green Revolving Loan Fund, campus composting was able to expand its impact through the inclusion of campus dining center food waste.

Scheduled power control systems allow departments to monitor compliance with computer use policy and its related impact on energy consumption. According to ISU's IT desktop support specialist David Wallace, "in some departments idling computers were wasting energy up to 75 percent of the time. On the power management system, waste is down to 25 percent in most cases."⁸

The initiative is projected to repay the loan in less than one year—far quicker than the five-year maximum payback period. The power management system serves as a demonstration project that may one day be replicated throughout all IT-managed computer systems on the ISU campus.

Lessons Learned

Challenges Faced

According to President Geoffroy, “there weren’t too many challenges we faced. Certainly we had to set up all the guidelines, identify funding for the loan fund, and install building meters. But as far as advocating the idea of creating a loan fund, everyone was very supportive.”⁹

However, in its current operations there are minor barriers that have prevented the fund from reaching its full potential. Due to current economic restraints, many departments and schools must make tough decisions about decreasing budgets. These concerns have caused hesitation from potential loan applicants due to the staff time required to manage and complete additional projects. As a result, ISU’s revolving fund experienced some difficulty soliciting loan proposals in the first few months of its operation.

The Future of the Fund

“We have high hopes for the Live Green Revolving Loan Fund. Faculty, staff and students are excited about Live Green efforts and already have offered many good

suggestions for future projects and initiatives,” said President Geoffroy. “This fund will help them put some of those ideas into action.”¹⁰

Because it was an administration-driven initiative, the fund encountered few obstacles in its early development stages.

Merry Rankin also spoke optimistically about the fund and its future projects. She noted that the Office of Sustainability is watching many unique and exciting projects take off on campus, and is waiting to see whether veteran departments will propose new requests for funding in order to augment previous loan fund projects. She said that these conclusions will depend on the success of current investments, in addition to how well the department or building will take advantage of these new initiatives upon completion.¹¹

Many of the current projects have great potential to be expanded and duplicated in other university departments and colleges. The possibility of implementing a targeted marketing program for different areas of campus may also be forthcoming.

Recommendations for Starting New Funds

“One thing we realized very early on was that if the Live Green! Initiative was to be successful, it was vital for every member of the Iowa State University community to have an incentive—beyond doing what is right—to take part in it,” said President Geoffroy. “This led to a decision to revise our university budget process to incorporate building metering of utilities and a revised billing system that allowed energy savings to be retained by building occupants.”¹²

For colleges and universities advocating for new campus revolving funds at their institutions, Rankin advised that fund proponents should be patient and persistent. She suggested that proponents should take the lessons learned from other schools’ existing models but be prepared to show examples of how the fund would operate on their own campuses.

Rankin also noted that it is helpful to identify “champions in the field” at one’s own institution to assist proponents of the fund.



The ISU Live Green Loan helps to support sustainable design on campus, like the doors on the Bergstrom Indoor Training Facility. The \$30,000 door project was installed to be a physical barrier between the building’s 2,250 sq. foot entryway and the 92,000 sq. foot practice area, an installation that the university will expect to see savings of about \$6,000 dollars per year in reduced heating costs.

Collaborating with facilities and management staff, key faculty members, or department administrators—who will be allies to the fund and engaged in its development—is crucial to success.

Likewise, it is also helpful to keep these champions involved even after the fund’s creation. These individuals will be helpful in encouraging proposal submissions in their various roles throughout campus.

Lastly, Rankin emphasized that it is important to engage and educate the entire campus community. Charging campus departments and individual colleges to take ownership of the fund management is vital to the process of applying for loans. Once people understand the opportunity to design and implement their own projects, the potential of a new fund can be maximized.

Endnotes

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