

SIRF: Sustainability Initiatives Revolving Fund



SIRF provides energy savings opportunities, makes good business sense

February 1, 2013

We are pleased to present you with Arizona State University's first annual report for the Sustainability Initiatives Revolving Fund (SIRF). The fund provides investments across our four campuses for both large and small energy conservation projects that provide a real return.

It is our goal to:

- **Invest wisely in projects that promote sustainability**
- **Accelerate a sustainable campus culture**
- **Reinvest savings in future energy-savings projects**

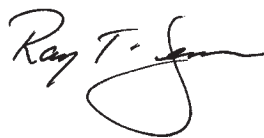
Utility savings from previous energy conservation projects allowed ASU to establish the fund. SIRF demonstrates that sustainability *should be* and *is* good business. In the past year, a number of energy-related conservation projects were identified, which allowed the SIRF investment portfolio to change substantially:

- **Twelve projects were approved for investment as of the end of fiscal year 2012**
- **During fiscal year 2013, five of the dozen FY12 projects began providing a return**
- **The one-year SIRF return is projected to be 11.5 percent**
- **Additional one-time cost savings likely will push the 11.5-percent return to at least 12.75 percent**

Unlike similar green revolving funds at other academic institutions, SIRF is uniquely integrated into the University's financial management function. The ASU Office of Planning and Budget manages the fund with oversight from a multidisciplinary review committee. SIRF investments are thoroughly vetted and investment results are integrated into the University's planning process. This ensures rigorous review and analysis of projects and assured returns to the funds.

In the coming year, we plan to identify projects that either meet the full investment return criteria or provide matching fund opportunities. Given the success during the first full year of operation, we expect that SIRF will continue to provide opportunities for grassroots conservation efforts.

On the next several pages, we invite you to review the SIRF projects that are outlined in more detail. It is our hope that these simple, no-nonsense projects will inspire you to look at the needs within your schools and departments and to seek out SIRF funds to boost your energy-conservation efforts.



Ray Jensen
*University Sustainability Officer and
Associate Vice President,
University Business Services*



Lisa Grace
*Chairman, Sustainability Initiatives
Revolving Fund Committee and
Associate Vice President,
Planning and Budget*

Arizona State University Sustainability Initiatives Revolving Fund

FY 2012 Annual Report

Arizona State University is a leader in sustainable practices across its campuses and within academia.

ASU is a Founding Circle member of the Billion Dollar Green Challenge hosted by the Sustainable Endowments Institute, a special project of Rockefeller Philanthropy Advisors. In collaboration with 15 partner organizations, the institute launched the challenge in October 2011 to drive energy savings with green revolving funds. The Sustainability Initiatives Revolving Fund (SIRF) – ASU's green revolving fund launched in FY 2010 – predates the Billion Dollar Green Challenge, which enabled ASU to participate immediately.

The SIRF mission is to be a project showcase that proves that sustainability is good business – by investing in projects that have a direct impact on expanding campus sustainability. SIRF specifically funds projects that relate to energy conservation and renewable resource development and have a direct financial return. SIRF funds are accessible to all ASU students, faculty and staff through the SIRF application and review process.

SIRF seeks projects that address the four overarching goals of ASU's Strategic Plan for Sustainability Practices and Operations:

- **Carbon neutrality**
- **Zero solid/water waste**
- **Active engagement**
- **Principled practice**

The SIRF seed funds were derived from earlier actions that resulted in utility savings. Once fully implemented, the return from active investments will increase the size of the fund to support future projects.

Many of the early SIRF investments were proof-of-concept projects. Engineers were able to scope the full impact of the investment, with the intent of expanding successful implementations to similar infrastructure.

Through June 30, 2012, \$3.7 million in investments have been approved for SIRF funding. Five SIRF projects are providing returns in FY 2013. Most projects will completely repay the fund within three to five years from the time of approval, and all have a six percent or higher rate of return to SIRF.



Oversight

The SIRF revolving fund structure is based on the fundamental premise that the investments made will result in cash flow savings that will repay the fund within a reasonable period. Fund management is situated within the Office of Planning and Budget in the ASU Business and Finance organization. This management structure ensures that the project analysis and repayment is fully vetted before approval and that savings are operationalized.

A committee of seven ASU senior administrators from the following diverse disciplines provides SIRF oversight:

- **Facilities Development and Management**
- **Financial Services**
- **Planning and Budget**
- **University Sustainability Practices**
- **W.P. Carey School of Business Department of Economics**
- **University Business Services**

The SIRF committee reviews and recommends projects for approval based on both the sustainability goals to be attained as well as the project's financial return.



Fund Structure

The scope and purpose of projects may differ, so the SIRF funding structure was created to segregate the proposed projects by investment size:

- **Tier 1 – University Community Sustainability Grants** (maximum \$50,000 in grants annually)
Investments are made in small projects, typically proposed by students, to promote engagement and to expand the campus culture of sustainability. The maximum individual award is \$5,000. No tangible return on investment is required.
- **Tier 2 – Fund Matching and Efficiency Loans** (maximum \$500,000 in grants annually)
Investments are medium-scale, capital improvements, initiated by departments from across the University. Tier 2 projects require a department to invest 50 percent of the required outlay. In return, the department shares in an equivalent portion of the benefits for up to five years, with the remaining 50 percent of the net savings returned to the fund. Projects are targeted for departments that need to upgrade and/or renovate space and equipment to improve energy efficiency.
- **Tier 3 – Capital Expansion Loans** (no maximum amount; investments are limited to available funds)
Investments include initiatives with a significant and measurable impact on ASU's sustainability profile that provide a return on investment. All savings from the investment are returned to the fund. Targeted investments include strategic partnerships to reduce carbon emissions, and to date have been largely focused on reducing energy consumption.

The SIRF committee has authorized funding for projects on all four ASU campuses: Downtown Phoenix, Polytechnic, Tempe and West. Two Tier 1 and nine Tier 3 projects have received approval. The only Tier 2 project to receive approval – the Irrigation Master Plan – predates SIRF committee formation. As of June 30, 2012, the SIRF committee has approved \$3.7 million in investments. The following table summarizes those investments.

ARIZONA STATE UNIVERSITY
Sustainability Initiatives Revolving Fund

As of June 30, 2012


	Total Investment	SIRF ROI for FY 2013
Tier 1 Projects		
Poly Gardens Wall Project	\$ 508	\$ -
Memorial Union Water Fountain Retrofits	5,000	-
Tier 2 Projects		
Irrigation Master Plan	97,000	-
Tier 3 Projects		
Energy Conservation Program Management	1,774,089	-
ASU Energy Metering Project	1,096,613	245,000
Insultech Thermal Insulation	347,335	69,000
Weatherup Center Video Room AC Units	48,825	10,000
Central Plant Cooling Towers Separator Pumps	15,645	66,000
Downtown Phoenix NHI 1 Garage Lighting Retrofit	22,541	-
Hayden Library Lighting Controls	173,700	30,000
West Campus Cooling Tower Nanofiltration	49,112	-
Mona Plummer Pool Lighting Replacement (LED)	31,350	-
Grand Total	\$ 3,661,718	\$ 420,000


A synopsis of each SIRF investment is included in the pages that follow.




sustainability is
good business

TIER 1 PROJECTS: University Community Sustainability Grants

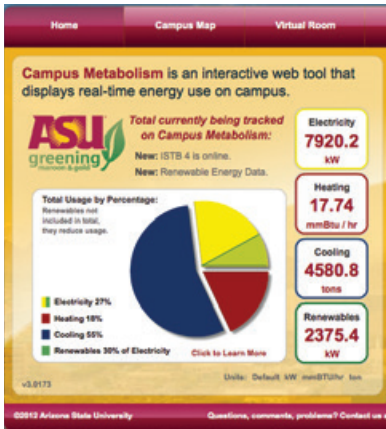
Project Name	Poly Gardens Wall Project	
Investment Amount	\$508	
Project Description	Install solar panels at CTI Lab practicum student garden to provide on-site energy source for small tools and irrigation units.	

Project Name	Memorial Union Water Fountains Retrofits	
Investment Amount	\$5,000	
Project Description	Install reusable water bottle refill stations at the Memorial Union to reduce purchase of disposable bottled waters.	

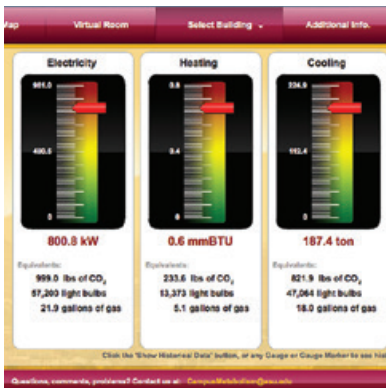
TIER 2 PROJECT: Fund Matching and Efficiency Loans

Project Name	Irrigation Master Plan	
Investment Amount	\$97,000	
Project Description	Provide irrigation system master-planning services to provide a foundation for campus landscape improvement projects.	

TIER 3 PROJECTS: Capital Expansion Loans



Project Name	Energy Conservation Program Management
Investment Amount	\$1,774,089
Project Description	
Fund three activities:	
1) Campus Metabolism – an interactive web tool that enables the user to view the current energy resource use on campus	
2) Resource Conservation Program Management to provide energy-use education and to maintain building-use surveys	
3) Distributive Billing Program Management to instill critical energy usage ownership	
This project is under construction and will begin to provide initial returns to the fund in FY 2014.	
Financial Projections:	
Net Present Value	\$23,464
Return on Investment	11.6%
FY 2013 Planned Financial Return to SIRF	\$ -





Project Name	ASU Energy Metering Project
Investment Amount	\$1,096,613
Project Description	Provide meters to the Downtown Phoenix, Polytechnic and West campuses and connect them to the Tempe-campus EIS (Energy Information System) to manage and report utility data for all four campuses.
Financial Projections:	
Net Present Value	\$83,545
Return on Investment	8.4%
FY 2013 Planned Financial Return to SIRF	\$245,000




Project Name	Insultech Thermal Insulation
Investment Amount	\$347,335
Project Description	Installed Insultech thermal insulation on pipes and equipment in the central plant and 40 other locations on the Tempe campus. Total calculated heat loss for bare pipe/equipment is 1.7M BTUs per hour. The loss drops to .2M BTUs per hour with insulation.
Financial Projections:	
Net Present Value	\$134,442
Return on Investment	20.7%
FY 2013 Planned Financial Return to SIRF	\$69,000

TIER 3 PROJECTS: Capital Expansion Loans

Project Name	Weatherup Center Video Room AC Units	
Investment Amount	\$48,825	
Project Description	Installed two, 4-ton, standalone AC units in the Weatherup Center to provide HVAC to two video rooms. The primary building air-handler units currently run 24/7. This project enables the units to be turned off when the building is unoccupied and still provide cooling to these two critical areas. The funding for the design of this project was provided by Sun Devil Athletics. This proof-of-concept submittal enables the refinement of engineering calculations and savings.	
Financial Projections:		
Net Present Value	\$6,057	
Return on Investment	10.3%	
FY 2013 Planned Financial Return to SIRF	\$10,000	

Project Name	Central Plant Cooling Towers Separator Pumps	
Investment Amount	\$15,645	
Project Description	The separators for the Central Plant's cooling towers presently run 24/7 removing dirt and particulates from the tower water. Automating the pump's ON/OFF cycle through the plant control system to coincide with the actual tower run times will save on electrical use and pump wear and tear.	
Financial Projections:		
Net Present Value	\$311,392	
Return on Investment	425.1%	
FY 2013 Planned Financial Return to SIRF	\$66,000	

Project Name	Downtown Phoenix NHI 1 Garage Lighting Retrofit	
Investment Amount	\$22,541	
Project Description	Retrofit existing light fixtures from (1) 8-foot, T12 lamp to (2) GE high efficient, 4-foot, T8 lamps. The existing ballast will be replaced with a high-efficient, multi-volt, instant-start ballast. The contractor will recycle the removed lamps and ballasts. This proof-of-concept project validated the energy savings, leading to additional projects to be submitted in FY 2013.	
Financial Projections:		
Net Present Value	\$6,636	
Return on Investment	20.1%	
FY 2013 Planned Financial Return to SIRF	\$ -	

TIER 3 PROJECTS: Capital Expansion Loans



Project Name	Hayden Library Lighting Controls
Investment Amount	\$173,700
Project Description	Hayden Library currently runs its main building lights approximately 90 percent of the time, only turning them off on weekend nights. This project installed wireless, easy-to-install zoned lighting controls throughout the building that turn on and off based on occupancy. Photo-driven technology also powers the sensors and eliminates the need for batteries. An integration device enables it to be monitored and controlled either through its own front-end, or allows it to be integrated into the ASU system.
Financial Projections:	
Net Present Value	\$22,624
Return on Investment	10.0%
FY 2013 Planned Financial Return to SIRF	\$30,000



Project Name	West Campus Cooling Tower Nanofiltration
Investment Amount	\$49,112
Project Description	Recycle the water from the West Campus cooling tower, which flows through the nanofiltration system. Approximately 60 percent of the 3.75 million gallons of annual wastewater will be returned to the cooling tower. A minimum of 2.4 million gallons of wastewater will be recycled and reused annually, with an annual estimated savings of \$10,104 based on water costs.
Financial Projections:	
Net Present Value	\$573
Return on Investment	6.37%
FY 2013 Planned Financial Return to SIRF	\$ -



Project Name	Mona Plummer Pool Lighting Replacement (LED)
Investment Amount	\$31,350
Project Description	Replace existing 1,000-watt pool lamps with 70-watt LED pool lamps.
Financial Projections:	
Net Present Value	\$11,574
Return on Investment	19.8%
FY 2013 Planned Financial Return to SIRF	\$ -

A young woman with glasses and a pink shirt is smiling and talking to a young man in a plaid shirt. They are standing in a garden filled with various types of cacti, including tall columnar ones and smaller, rounded ones. The background shows a building with a red roof and some greenery. The overall scene is bright and sunny.

**sustainable practices
and operations**



ARIZONA STATE UNIVERSITY

Arizona State University
Office of Planning and Budget
P.O. Box 877505
300 E. University Drive, Suite 320
Tempe, AZ 85287-7505
480.965.5747

Arizona State University
University Sustainability Practices
Global Institute of Sustainability
P.O. Box 875402
Tempe, AZ 85287

SIRF@asu.edu
cfo.asu.edu/sirf

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Cindi Farmer, Lauren Jordan, Vince Palermo,
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