



An Initiative of the Sustainable Endowments Institute

Billion Dollar Green Challenge

Information Packet – 2016



Information about The Billion Dollar Green Challenge, including information on green revolving fund operation and benefits, participating institutions, frequently asked questions, and how to join.

Revised May 2016



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Summary of The Challenge

The Billion Dollar Green Challenge (The Challenge) encourages nonprofit institutions to invest a combined total of one billion dollars in self-managed revolving funds that finance energy and resource efficiency improvements. The reason they are called “revolving funds” is because the funds loan money to specific sustainability projects which use the cost savings from the resulting reduced operating bills to repay the loan and then “revolve” money back to the fund to reinvest in future projects.

Funds can take many different forms and are adaptable to the funding availability, institutional priorities, types of projects, and stakeholder support on each campus or organization. What unites them is a common aim to reduce a campus’ environmental impact and operating expenses, freeing up funding that can be used for additional projects or sent to more budget-starved departments.

Through The Challenge, institutions commit to creating or growing a green revolving fund (GRF). As participating institutions and organizations, they commit to engage with other institutions on the best practices of fund operation, share expertise, and contribute to the Green Revolving Investment Tracking System (GRITS), the online webtool for green revolving fund tracking and management. Participating institutions achieve reductions in operating expenses and greenhouse gas emissions while creating a regenerating funding stream for future projects.

The Sustainable Endowments Institute launched The Challenge in October 2011 in collaboration with 17 partner organizations:





Advisory Council

The Billion Dollar Green Challenge is guided by a distinguished 28-member Advisory Council.

Jenn Andrews

Clean Air – Cool Planet

Carter Bales

NewWorld Capital Group

Beth Bogart

Progressive Source Communications

Blaine Collison

U.S. EPA Green Power Partnership

Tony Cortese

American College & University

Presidents' Climate Commitment;

Second Nature

Silda Wall Spitzer

NewWorld Capital

Felicia Davis

Building Green Initiative

Douglas Foy

Serrafix Corporation

Heather Henriksen

Harvard University

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Practice Greenhealth

Holmes Hummel

Robert Hutchinson

Rocky Mountain Institute

Scott Johnstone

Vermont Energy Investment Corporation

Van Jones

Rebuild the Dream

Greg Kats

Capital E

Julian Keniry

National Wildlife Federation

Elizabeth Kiss

Agnes Scott College

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GreenerU

Jonathan Lash

Hampshire College

Bill Moses

Kresge Foundation

Judy Nitsch

Nitsch Engineering

John Onderdonk

The California Institute of Technology

David Orr

Oberlin College

Louisa Plotnick

Clinton Climate Initiative

Debra Rowe

U.S. Partnership for Education

for Sustainable Development

Leith Sharp

Illinois Green Economy Network

Gus Speth

Vermont Law School

Dano Weisbord

ActionAid International



The Case for Green Revolving Funds

With buildings consuming almost half (49 percent) of all energy used in the United States, and three quarters of all electricity, there is a compelling need for investment in energy efficiency upgrades. These energy saving improvements “represent a significant opportunity to save money, reduce climate impact and generate jobs,” according to *United States Building Energy Efficiency Retrofits*, a recent report by Deutsche Bank Climate Change Advisors and the Rockefeller Foundation.¹

The analysis supported by these two prominent institutions shows that investing \$279 billion in building retrofits nationwide could “yield more than \$1 trillion of energy savings over 10 years.” This would be the equivalent to savings of approximately 30 percent of the annual electricity spending in the entire country.

Recognizing such bottom-line and sustainability benefits, leading corporations such as Dow Chemical², General Electric³ and News Corporation⁴ have invested in improving the energy efficiency of their own buildings, operations and products. Without having access to the capital resources of large corporations, what innovative and affordable methods can higher education institutions use to invest in significant energy efficiency improvements?

One cost-saving and carbon-reducing method with a successful track record is the green revolving fund (GRF). GRFs invest in energy efficiency projects, thereby reducing operating expenses and greenhouse gas emissions. The cost savings boost the bottom line and replenish the fund for investment in the next round of green retrofits, establishing a sustainable funding cycle. The Sustainable Endowments Institute (SEI) surveyed colleges and universities in the United States and Canada to learn how they are implementing self-managed green revolving funds in the report, *Greening the Bottom Line 2012*. The survey provides insights into the various approaches to green revolving fund creation, structure, and management as well as environmental and financial performance. Based on data from the 79 active green revolving funds at the 76 institutions in the survey, the following findings emerged:

¹ Dow. *The Future of Energy*. <http://www.dow.com/energy/> (12 October 2012)

² GE Ecomagination. *Efficiency*. <http://www.ecomagination.com/efficiency> (12 October 2012)

³ News Corporation. *Long-term Vision*. <http://www.newscorp.com/energy/index.html> (12 October 2012)

⁴ The Rockefeller Foundation. *United States Building Energy Efficiency Retrofits: Market Sizing and Financing Models*. <http://www.rockefellerfoundation.org/news/publications/united-states-building-energy-efficiency> (18 October 2012)



- 31 U.S. states and 2 Canadian provinces have higher education institutions with established GRFs.
- \$180 million in capital has been collectively committed among established GRFs.
- More than 1,200 energy efficiency projects have been initiated using GRF funding.
- 15-fold increase in the number of GRFs on campus over the past decade.
- A wide variety of colleges and universities with varying sizes, diverse geographic locations, and spanning the spectrum of endowment wealth have adopted GRFs.

Reported Benefits

Institutions report a variety of benefits to operating a green revolving fund, including:

Boosting Return on Investment (ROI) – Established green revolving funds report a median annual return on investment (ROI) of 28 percent. This suggests that GRFs can significantly outperform average endowment investment returns while maintaining strong returns over longer periods of time.

Achieving Short Payback Periods – Institutions reported a median payback period of 3.5 years, which means on average more than a quarter of all money invested in projects can be reinvested after one year (given that savings are typically paid back into the fund on an annual basis).

Initiating A New Mindset – GRFs overcome the limitations of budgeting efficiency upgrades by transforming them from perceived expenses into high-return investment opportunities for the campus and general operations that will reduce costs over time.

Facilitating Flexibility – GRFs allow for the use of a variety of capital sources to build a fund that can be scaled up over time or adapted as necessary.

Hedging Against Rising Energy Prices – GRFs are an effective strategy for hedging against rising energy prices without the downside of traditional energy price hedges, which incur losses if energy prices stay flat or decline.

Advancing Educational & Community Goals – GRFs foster greater community engagement by creating student and staff leadership opportunities and strengthening awareness of sustainability.

Participants



The following 57 North American organizations are recognized as participants in the Billion Dollar Green Challenge.

Agnes Scott College *Decatur, GA*
Arizona State University *Tempe, AZ*
Berkshire School *Sheffield, MA*
Bethany College *Lindsborg, KS*
Bon Secours Health System *Marriottsville, MD*
Boston University *Boston, MA*
California Institute of Technology *Pasadena, CA*
California State University, Fullerton *Fullerton, CA*
Catawba College *Salisbury, NC*
Champlain College *Burlington, VT*
City of San Antonio *San Antonio, TX*
Cleveland Clinic *Cleveland, OH*
Daemen College *Amherst, NY*
Dartmouth College *Hanover, NH*
Dartmouth-Hitchcock Health *Lebanon, NH*
Denison University *Granville, OH*
Edgewood College *Madison WI*
Ferrum College *Ferrum, VA*
George Washington *Washington, D.C.*
Georgia Institute of Technology *Atlanta, GA*
Green Mountain College *Poultney, VT*
Hampshire College *Amherst, MA*
Harvard University *Cambridge, MA*
Hiram College *Hiram, OH*
Lane Community College *Eugene, OR*
Mars Hill College *Mars Hill, NC*
Middlebury College *Middlebury, VT*
Northland College *Ashland, WI*
Oregon State University *Corvallis, OR*
Pine Cobble School *Williamstown, MA*
Portland State University *Portland, OR*
Princeton University *Princeton, NJ*
Saint Joseph's College *Standish, ME*
Rollins College *Winter Park, FL*
Sewanee: The University of the South *Sewanee, TN*
Simon Fraser University *Burnaby, British Columbia*
State of Vermont *Montpelier, VT*
Thompson Rivers University *Kamloops, BC*
Unity College *Unity, ME*
University of Arizona *Tucson, AZ*
University of Alaska, Fairbanks *Fairbanks, AK*
University of British Columbia *Vancouver, BC*
University of California, Los Angeles *Los Angeles, CA*
University of Dayton *Dayton, OH*
University of Illinois at Urbana-Champaign *Champaign, IL*
University of La Verne *La Verne, CA*
University of Maine *Orono, ME*
University of Minnesota *Twin Cities, MN*
University of New England *Biddeford, ME*
University of New Hampshire *Durham, NH*
University of Saskatchewan
Saskatoon, Saskatchewan
University of Utah *Salt Lake City, UT*
University of Vermont *Burlington, VT*
University of Wyoming *Laramie, WY*
Vermont Law School *South Royalton, VT*
Vermont State Colleges *Multiple locations, VT*
Western Michigan University *Kalamazoo, MI*



Benefits of Joining The Challenge

The benefits of joining The Billion Dollar Green Challenge include:

- Access to GRITS Unlimited, SEI's Green Revolving Investment Tracking System, an advanced web-based tool for tracking and managing an institution's green revolving fund. Learn more and schedule a walkthrough of the tool at www.GreenBillion.org/GRITS
- Technical assistance and support: up to 16 hours of free consulting annually during the fund formation process and/or throughout the life of the fund
- Unlimited access to peer institutions' project-specific data to use for benchmarking and analysis
- Resources on green revolving fund best practices, including new reports on green revolving fund trends and best practices, case studies, and webinars
- Connections to peer support and expertise at institutions with existing green revolving funds
- Invitation to conferences and meetings related to green revolving fund development, including monthly virtual roundtable discussions on specific GRF topics
- For institutions with new funds: a quarterly benchmarking process to ensure an effective first year of fund operation through the development of strategic fund documents, identifying the highest priority projects, and connecting appropriate stakeholders
- Recognition of leadership and positive media attention through visibility on the GreenBillion.org website, press releases and announcements, acknowledgements, and PR in relevant industry articles and publications



Frequently Asked Questions

1. What is a green revolving fund?

Green revolving funds are a sustainability financing tool that invests money in projects to improve efficiency and decrease resource use, thereby reducing both operating expenses and greenhouse gas emissions. The cost savings that result from these efficiency projects are revolved back to the GRF, allowing it to return to its original size or even to grow. For the majority of fund models, after the initial project costs have been returned to the fund, additional savings accrue to the school or a specific department's operating budget.

The Billion Dollar Green Challenge defines GRFs using two criteria:

- The fund must finance measures to reduce resource use (e.g., energy, water, paper) or to mitigate carbon emissions and/or greenhouse gas emissions (e.g., renewable energy).
- The fund must revolve through a formalized mechanism, where the savings generated by reducing operating costs are tracked and used to repay the fund to provide capital for future projects.

2. What are the benefits of having a green revolving fund at a college or university?

Having a GRF ensures that a school will always be able to finance sustainability projects, which will ultimately save the school money through reduced operating costs. If a school has already dedicated money to sustainability efforts on campus, using that money to create a GRF would capture the cost savings from the projects it finances and create a continuous cycle for funding (instead of a one-time funding allocation for individual projects). By tracking and reclaiming the project savings, GRFs continue to be available as a method of funding for an unlimited number of efficiency projects and sustainability work.

GRFs provide the following benefits:

- Achieve campus or mission-related environmental goals and advance reduction in greenhouse gas emissions and resource consumption
- Boost return on investment and achieve short payback periods
- Increase tracking of energy and water use (and other sustainability data) on campus
- Hedge against rising or volatile energy prices
- Create new opportunities for collaboration and teaching among offices of Finance, Sustainability, and Facilities, as well as with faculty and students



- Foster a culture of sustainability and resource efficiency

3. How do institutions locate seed money to begin green revolving funds?

There are a variety of ways that institutions can procure seed funding for a GRF. Funding sources may be used alone, in conjunction with other sources, or in a “matching” context to help solicit donations and leverage other sources of funding. Popular funding sources include:

- **General operating budget:** The most common approach to seeding a GRF is by dedicating funds inside the general operating budget, a method used by nearly 40 percent of the first GRFs in operation in North America.
- **Administrative budget:** Allocations from central administrative or departmental budgets (e.g. Facilities, Dining, or Sustainability Office). This method has been used to begin some of the largest funds in the United States, including Harvard University’s Green Loan Fund.
- **Previous efficiency/conservation savings:** Cost savings from previously completed energy- or resource-efficiency projects can be allocated to create a long-term GRF.
- **Student body:** Student green fees or allocations from student governments can provide seed funding. Students may be involved in the formation and operation of the GRF, or may be the instigators of a campaign to raise the capital for a fund on their campus.
- **Endowment:** An institution may allocate a small portion of its endowment to be invested in efficiency projects. The endowment may also provide a loan to begin a GRF, which can then become independent of the endowment upon repayment of loan principal and interest.
- **Cash reserves:** With GRFs’ demonstrated high returns, utilizing cash reserves as a seed funding source can be a strong alternative to the traditional low-risk (yet often lower return) financial instruments that the money would otherwise be invested in.
- **Utility budgets/rebates:** Utility companies often provide rebates for organizations that curtail demand, which can then be leveraged to begin a fund. Since GRFs are able to generate cost savings, they can trigger further rebates or partnerships with a utility.



- **Donations:** Individuals, alumni, or foundations can donate the seed money to begin a GRF. Such donations can be solicited through applications for grants and charitable donations, or through alumni giving campaigns.
- **State energy-efficiency funding:** Many states make funding available to implement new energy projects or programs at public universities.
- **Combining multiple funding sources:** Many institutions have combined one or more of the above approaches to seed their GRF.

4. Who decides on the projects that get funded by GRFs?

Though fund administration varies widely from school to school, most institutions have committees that review and approve project proposals. These committees often include administrators, staff, students, and faculty. In a small number of funds, these committees include alumni and other community members.

5. What sort of return on investment (ROI) will a fund have?

As they collect utility savings from efficiency projects, GRFs provide reliable returns on investment and short repayment periods. Established funds have reported ROIs ranging from 20 percent (the Georgia Institute of Technology and the University of North Carolina at Chapel Hill) to more than 57 percent (Boston University), with a median annual ROI of 28 percent. This suggests that GRFs not only significantly outperform average endowment investment returns, but also perform at a high rate of return over the long term.

6. What is the average payback period for GRF loans?

In 2012, institutions reported an average project payback of 4.4 years, with a range from 1 year to 8 years. After loans have been repaid, additional savings begin to accrue to select school departments or distinct budgets within the organization.

Most institutions stipulate that loans must be repaid within a certain amount of time. Among the institutions that identified maximum/minimum payback criteria, the minimum reported project payback was 1.6 years, and the maximum was 7.8 years.

7. Does my school need to be wealthy to create a GRF?



A diverse set of institutions are creating GRFs, not just wealthy institutions. Twenty-five percent of funds are \$100,000 or less, with the smallest funds being under \$30,000. Approximately a third of institutions with GRFs have endowments below \$250 million. The school with the smallest endowment to create a GRF, Burlington College (Vermont) has an endowment of \$91,000.

8. Does my school need to be large to create a GRF?

Institutions of all sizes have created GRFs. Large, private universities such as Stanford, Yale, and Harvard have established funds, and so have smaller institutions like Allegheny College (Pennsylvania), Kalamazoo College (Michigan), and Lane Community College (Oregon).

9. What kinds of projects can a GRF finance?

Most institutions allow their funds to finance any project that will increase efficiency and reduce resource use. Common projects include:

- Lighting upgrades
- Water-efficiency retrofits
- Building efficiency improvements, such as HVAC upgrades
- Composting equipment installation
- Alternative-fuel vehicles
- Campus garden/local food cultivation

Any project that can demonstrate cost savings by investing in energy, resource, or sustainability concepts is a great fit for a GRF investment. For more information on projects that have been financed by GRFs, including their costs and payback periods, read *Greening the Bottom Line 2012* (available at GreenBillion.org/resources/#reports).

10. Can my institution join The Challenge if we give away grants instead of loans?

In addition to providing loans, some funds also give grants to projects that cannot demonstrate a financial savings but that will still benefit the campus. While these grants do serve to finance important sustainability projects and to engage the campus community, to participate in The Challenge a school or organization must create a loan system to finance the majority of projects inside the GRF. For more information, please contact info@GreenBillion.org.

11. How are loans repaid to the GRF?

There are two ways that institutions have reported paying back money to their GRFs.



1. **Accounting Model:** Repayment is handled through the transfer of funds to the GRF from a centrally managed budget where the savings were generated (e.g., utilities budget).
2. **Loan Model:** The project proponents have direct control over their budget. Because of this, they can independently repay their loan. This includes cases where departments or institutions control their own utility budget, or cases where GRF funding focuses on one type of operational savings that can be easily identified, such as recycling cooking oil or paper, rather than on utilities spending.

12. Do GRF loans charge interest?

While the majority of institutions do not charge interest on loans, for those that do, interest rates range from 1 percent (The University of Texas at Dallas) to 5.5 percent (The University of Minnesota, Twin Cities). The average interest rate that institutions applied to project loans was 3.3 percent.



Agreement: Principles and Action Plan

Whereas *Greening the Bottom Line* documents the proven track record of green revolving funds at more than 90 institutions in the United States and Canada,

Whereas this research and other case studies show the environmental, educational and financial benefits of investing in these efficiency improvements,

Whereas our positions as nonprofit institutions support our contributing to educational and community leadership,

Whereas green revolving funds have proven to be safe investments with relatively high rates of return,

Whereas over the course of 10 years, a cumulative one billion dollars initially invested in green revolving funds may be repaid and invested 2-3 more times, thereby generating total investments of between two and three billion dollars,

Now therefore, be it resolved that our institution will commit to finance and implement a Green Revolving Fund and join The Billion Dollar Green Challenge.

To advance this initiative, we will pursue one of the two following action plans:

1) Enlarge or maintain a green revolving fund already in existence, so that the fund size will either continue to surpass, or will surpass within six years, the smaller of:

- One percent of the institution's endowment value, OR
- One million dollars

As part of this plan, at least 50 percent of money saved through a project investment by the revolving fund will return to the fund to be re-invested in future projects— at least until the full cost of the project has been repaid. To qualify, our existing fund must also be operational and have mechanisms in place to identify projects and make investments.

2) Initiate the process of creating a green revolving fund that will meet the requirements listed above. Our progress will be tracked according to four quarterly benchmarks within the indicated time periods—starting from the first three months after our institution joins The Challenge:



- **Within Three Months:** Form a multi-stakeholder working group, or assign an existing group (which may include faculty, staff, students, administrators, or trustees), to lead the process of establishing the fund guidelines and operating procedures.
- **Within Six Months:** Complete an energy audit for approximately 10 percent or more of the building square footage on campus and complete a “GRF Plan of Action” detailing how the fund will operate. Audits may be conducted by consultants, university staff, or students with faculty or staff support. The GRF Plan of Action few short questions that will help SEI assess your progress in the GRF creation process and offer targeted support.
- **Within Nine Months:** Formalize a guiding document to outline the operational procedures for the fund including the process for reviewing project proposals, making investments, and tracking savings.
- **Within Twelve Months:** Approve fund investment in at least one project and begin to add data to the Green Revolving Investment Tracking System (GRITS).

As participants in The Billion Dollar Green Challenge, we commit to invest in energy efficiency, water conservation or renewable energy improvements at our institutions, with the goal of saving energy, reducing carbon emissions, lowering energy expenses, and creating regenerating funds for future sustainability upgrades.

Signature

Date

Name, Title

\$ _____
Size of Fund

Institution

Name of Fund

New Fund? (Y/N)



Agreement: Policy and Financial Guidelines

The following policy and financial guidelines pertain to institutions participating in The Billion Dollar Green Challenge:

Policies

For institutions in the planning or development phase of a green revolving fund:

During the process of meeting the four quarterly benchmarks during the first year, an institution may request a single three month extension. If approved, all future benchmark deadlines will be adjusted by three months.

For institutions with previously established green revolving funds:

- Engage with other institutions that make reasonable requests for advice or assistance (staff time permitting)
- Use the Green Revolving Investment Tracking System (GRITS) or compile an annual update on fund activities (including its current size, project loans approved, and other relevant information)

Financial Commitment

In order to fully participate in The Challenge and gain access to technical assistance, best practices and the Green Revolving Investment Tracking System (GRITS), an institution will pay an annual administrative fee of 1/20th of one percent (not to exceed \$2,500 and no less than \$200), based on the total committed size of its green revolving fund.

Extensions and Withdrawal

An institution may opt to withdraw from The Challenge at any time. If an institution does not meet a benchmark deadline without asking for an extension, it has three months to become current or potentially be withdrawn from The Challenge.



Additional Resources

The Billion Dollar Green Challenge offers many resources to help institutions launch and effectively manage their green revolving fund.

The Green Revolving Investment Tracking System (GRITS)

GRITS is an online GRF management tool available to all Billion Dollar Green Challenge participants that helps identify and select projects, track and manage current work, and report on past, present, and future projects and their associated financial and environmental performance. Visit GreenBillion.org/GRITS to view demos of the system, or email GRITS@GreenBillion.org with questions or to schedule a guided walkthrough of GRITS.

Greening the Bottom Line 2012

Greening the Bottom Line reports on the growing field of green revolving funds and their environmental and financial impact on campuses in North America. The report is the second in a series to examine green revolving fund trends, common obstacles, and best practices. Though many of these GRFs are young - there have been 36 new funds created since 2010 - their portfolios have already begun to post impressive returns, with a median annual reported return on investment of 28 percent. As of September 2012, there are 79 active GRFs across 76 campuses, representing 31 U.S. states and 2 Canadian provinces. Collectively, these funds have committed over \$111 million to energy and resource-use reduction projects. To read the full report, visit GreenBillion.org/Resources, or email Emily@EndowmentInstitute.org with questions.

Guide to GRF Implementation & Management

The Guide to GRF Implementation and Management draws on research and firsthand expertise from managers of successful green revolving funds (GRFs). The Guides lay out the various moving parts of a GRF, with commentary and discussion on seed funding sources, choosing project selection criteria, a thorough 10-step roadmap for starting a fund, guidance on how to build stakeholder support, and solutions to common obstacles faced by GRF proponents. To download the free Guide, visit GreenBillion.org/Resources, or email Info@EndowmentInstitute.org with questions.



GRF Case Study Series

SEI has 10 case studies on individual GRFs at institutions from across the country:

- Boston University's Sustainability Revolving Loan Fund
- California Institute of Technology's Caltech Energy Conservation Investment Program
- Harvard University's Green Loan Fund
- Iowa State University's Live Green Revolving Loan Fund
- Lane Community College's Energy Carryover Fund
- Stanford University's The Building Energy Retrofit Programs
- University of Colorado at Boulder's Energy and Climate Revolving Fund
- University of Notre Dame's Green Loan Fund
- Weber State University's Green Revolving Fund
- Western Michigan University's Quasi-Revolving Fund



What Institutions Are Saying

On The Challenge:

"New Hampshire is 50th in the nation for public funding of its state college system. If we could find the capital to create a \$1.2 million GRF and make it work, then any school should be able to."

Matt O'Keefe, Campus Energy Manager, University of New Hampshire

"We joined to gain resources to help us as we move toward becoming a more 'sustainable' campus. We are benefiting from the tools provided such as GRITS and the opportunity to learn from other higher ed institutions."

Joy Kish, Special Assistant to the President for Strategic Initiatives, Mars Hill College

"We joined because it's a smart way to prioritize energy projects among our other competing facilities needs . . . and we had a completed energy assessment that made it easy to imagine the utility of the fund. Of course, we also wanted to demonstrate participation as a viable option for other schools."

Jesse Pyles, Sustainability Coordinator, Unity College

On the Green Revolving Investment Tracking System:

"In a word, brilliant! Thanks for the demo....and the vision!"

Richard Donnelly, Planning & Development Manager, Vermont Energy Investment Corporation

"This has been an extremely effective method of enabling not only projects on campus, but quite frankly, innovation."

Heather Henriksen, Director of the Office for Sustainability at Harvard University

On Greening the Bottom Line:

"Have the administration and Board read THIS document—the report on Green Revolving Funds. THIS document is THE BEST resource for articulating how these work and how beneficial they are. Sharing last year's version of this with our Board is what tipped the scales with them."

Wendy Anderson, Professor of Environmental Programs, Drury University