

Saving Energy, Saving Money & Growing for the Future

The Jessie Ball duPont Fund helps colleges and universities reduce energy consumption, improve the bottom line and create more sustainable operations.

For the last eight years, the Jessie Ball duPont Fund has been on a mission to help colleges and universities reduce the amount of energy that is consumed on campus. Using a combination of research, educational convenings and grantmaking, the Fund has urged college presidents, administrators, faculty and students to track and monitor energy use, to develop institutional plans to manage energy use and to invest in retrofits that increase energy efficiency.

Results to date are impressive and encouraging:

Twenty-nine small, independent, liberal arts colleges and universities have taken steps to lower energy use and reduce energy bills.

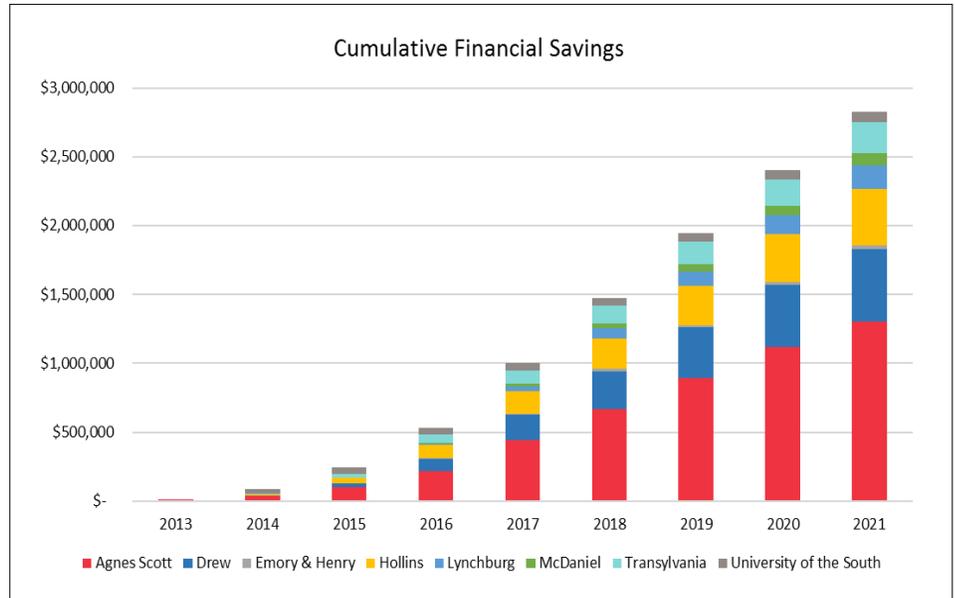
The eight schools that have been the most aggressive in their commitment to reducing energy consumption are on track to save more \$2.8 million by 2021 (see chart) – more than four times the amount the Fund invested in their efforts.

“This is a real triple bottom line,” said Sherry Magill, president of the Jessie Ball duPont Fund. “These are significant dollar savings, and derive from intentional reductions in energy consumption. They equate to removing more than 3,000 homes off the grid — good for these colleges, good for the environment, and positions these institutions for long-term sustainability.”

HOW IT BEGAN

The Jessie Ball duPont Fund supports about 70 institutions of higher education, three dozen of which are small, private liberal arts colleges and universities located primarily in the South and East. Among the Fund’s hallmark grantmaking strategies has been helping these schools build their organizational capacity so that they can continue to thrive in a changing environment.

In 2007, Magill and staff visited with 17 small college presidents to better understand the challenges they were facing and



the ways in which the Fund might be helpful.

“We heard about the pressures colleges faced from accrediting institutions and the rising costs of maintaining a functioning campus,” Magill said. “The presidents also emphasized the importance of environmental sustainability and their desires to ‘go green.’ Many had signed the American College & University Presidents Climate Commitment, agreeing to develop and implement a plan to go climate neutral, but they had little knowledge about how to do it.”

The Fund did not have a great deal of knowledge about environmental sustainability at that point, either. To learn more, staff connected with the Association for Advancement of Sustainability in Higher Education (AASHE), which provided introduction to a range of resources and a network of experts. Eventually, staff met Walter Simpson, former energy officer at the University of Buffalo and author of *The Green Campus: Meeting the Challenge of Environmental Sustainability*. Simpson and his colleague, Bob Kennedy, director of energy at EYP engineers and architects, played critical roles in the development and

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design of the Jessie Ball duPont Fund Energy Initiative.

“They really taught us what we needed to know about energy consumption and energy conservation and the unique characteristics of college campuses,” Magill said. “I had served as a small college administrator so I understood how colleges budget and are governed, but I did not understand how wasteful physical plant management deference to academics can be. Walter and Bob helped us see how the campus energy systems work, and, seeing that, how we might make them work better – that is, more efficiently, using less energy.”

Expanding access and creating opportunity by investing in people, organizations and communities that were important to Jessie Ball duPont.

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Agnes Scott College: Commitment From Top Drives Success

In 2008 — as the Jessie Ball duPont Fund was exploring options for an energy initiative — Susan Kidd began working with Agnes Scott College, leading that school's sustainability efforts. Agnes Scott, a liberal arts college for women located outside of Atlanta, had signed the President's Climate Commitment and the college's president, Elizabeth Kiss, was fully committed to meeting the challenge.

"She saw it as a critical national leadership initiative for higher ed," Kidd said, "and a strong fit for Agnes Scott," where young women are taught to "think deeply, live honorably and engage the intellectual and social challenges of their time."

Today, Kidd heads a high-profile Center for Sustainability on campus that oversees a host of programs to keep the campus green and the 950 students mindful of their environmental responsibilities.



President Kiss

President Kiss' strong leadership has been a major driver in the success of Agnes Scott's sustainability efforts, Kidd says. She fully engages the board of trustees, which has not opposed any of the sustainability initiatives. Having that strong commitment from the top "sets the stage that helps the day-to-day things flow better," Kidd says.

Take the College's Green Revolving Loan Fund, for example. As of December 2015, the fund had met its goal to raise \$1 million. Since then those assets have been spent down on retrofits and energy conservation projects, whose savings will replenish the fund in about five years, Kidd said.

Rather than seeing sustainability as a fundraising challenge, college leaders see it as an opportunity. "We have attracted funders we would not have had otherwise," Kidd said, adding that the sustainability initiatives also have inspired existing donors to increase and expand their giving.

"Sometimes colleagues from other schools ask me if we are ever at odds with our development office," Kidd said. "Quite the opposite. They see us as an advantage."

Magill and staff quickly saw how helping institutions reduce energy consumption aligned with the Fund's strategy to build organizational capacity. Reducing consumption naturally lowers energy costs, which can enhance the college's bottom line. It also conserves energy resources and can reduce the school's carbon footprint, which appeals to students, parents and donors and can help the institution meet its Climate Commitment goals. All of these factors help position the college for longer-term success — the Fund's ultimate goal.

STRUCTURING THE INITIATIVE

The Jessie Ball duPont Fund typically is not overly prescriptive with its grantees; the trustees generally support well-reasoned proposals that are consistent with an organization's mission. The Energy Initiative, however, was different. The precise and data-rich nature of energy management coupled with the steep learning curve facing most grantee institutions prompted the Fund to take a more direct approach.

In 2009, the Fund invited all 36 of the small liberal arts colleges it supports to attend a conference on energy conservation. There were two requirements: Each school would send three representatives: the president, the facilities manager and a representative from the finance office. And each school would complete a questionnaire, prepared by Simpson and Kennedy, about its energy consumption and energy costs.

Thirty-five of the 36 schools chose to participate. At the opening session, representatives of each college received a detailed analysis of their institution's energy consumption and costs and how each compared to the other schools in the cohort. For many schools, this was the first comprehensive and comparative look at their campus energy consumption. Seeing energy costs as a percentage of total operating budget, for example, compared with the same measure for three dozen peer institutions was eye-opening.

Equally eye-opening were the conversations that followed between college presidents and facilities managers, as the group discussed strategies schools could use to lower consumption and reduce costs. For many facilities managers, this was a rare chance to have the president's ear; for many presidents, the conversations prompted new awareness of the critical role the facilities managers play in the life and health of the campus.

Across these conversations the core message delivered by the Fund and its consultants was the importance of data, data, data.

You can't conserve until you know what you are consuming. You can't know what you are consuming if you don't measure — month by month, building by building. You can't build a strategy for the future unless you can quantify what you are doing today.

At the conclusion of the conference, then chair for the Fund's trustees Leroy Davis announced that the Fund would offer grants of up to \$150,000 per college to launch energy conservation programs. The Fund was specific in what it would support: The grants were intended to help colleges collect and analyze energy-use data, adopt and implement energy conservation policies and design long-term energy conservation strategies. Specifically, grants were to support:

Data Collection: Energy audits, submeters and software to track and monitor energy use.

Energy Policies: Establishing energy goals and ensuring compliance.

Co-curricular Programming: Energy awareness projects that engage students, faculty and staff in reducing energy consumption.

Staff and Training: Staff such as energy managers or sustainability coordinators specifically to monitor and analyze data, enforce energy policies and engage the campus community in reducing energy use.

"Some people wanted to talk about curriculum around conservation and other activities, and we have no problem with any of that, but it is not what we were interested in funding," said Davis. "We wanted to stimulate institutional change and that had to be rooted in data and action."

GETTING TRACTION

To date, 29 small colleges or universities have received 35 duPont Fund Energy Initiative grants valued at \$3.6 million. As with any new program, the Energy Initiative had early adopters as well as those who took longer to come to the table.

Six schools applied for and received grants within the first six months of the program. Some, such as Agnes Scott College, already were active in efforts to reduce energy consumption. Others, such as Lynchburg College, found the Fund's initiative to be a launching pad for nascent efforts. By the end of 2011 — 2 ½ years into the program — 18 schools had received grants supporting energy audits, hardware and software to collect data, personnel to support coordination of sustainability efforts, campus energy plans, facility upgrades (e.g. programmable thermostats, energy efficient

lighting, windows and boilers) and a host of projects designed to engage students and faculty.

Additional gatherings along the way helped to build knowledge and encourage participation. In both June 2011 and October 2015, colleges in the cohort were invited to gather and hear from their peers about on-campus experiences and lessons learned.

As momentum built among the colleges and universities, the Fund considered ways to expand the initiative to churches and community-based nonprofits that it supports. The Fund provided energy audits for cohorts of churches in certain regions and for nonprofits that owned buildings in select communities. It required organizations seeking certain capital grants to have a current energy audit. While there was modest success with some of these efforts, none gained the traction that has been seen with the colleges and universities.

"The reality is that colleges and universities – even small ones – have significant physical plants and complicated systems to manage

those plants," Magill said. "They enjoy the staffing, budgets and operational heft to tackle energy conservation on a meaningful scale. At community-based nonprofits, the CEO is often the facilities manager and few discretionary dollars exist to invest in facility upgrades. Churches frequently have even less capacity. While opportunities for energy savings at these institutions exist, the effort needed often is just too great."

PHASE II - BUILDING ON SUCCESS

The Energy Initiative originally was about helping small colleges and universities build the discipline and the systems to monitor, manage and reduce energy consumption while motivating the campus population – from students to administrators – to change their behavior. As schools gained success in these initial efforts, they saw greater opportunities in larger projects. But those larger projects often required a substantial upfront investment and many colleges struggled to find funding given the competition for limited resources on campus.

In 2012, the Jessie Ball duPont Fund launched Phase II of the Energy Initiative, helping college and university leaders find sustainable ways of financing larger investments in energy operations on campus through what are known as Green Revolving Loan Funds. Phase II grants range from \$50,000 to \$125,000 depending on the size of the school's endowment and require some matching dollars. Funds are used to seed a new, or enhance an existing Green Revolving Loan Fund.

A Green Revolving Loan Fund is a pool of capital dedicated to financing retrofits on campus that will result in energy savings. As colleges invest in energy-saving capital projects, they calculate and track the value of the energy savings. Those dollars then are reinvested in the Green Revolving Loan Fund to grow the fund and enable it to finance additional projects. (See *Financing Sustainable Energy Projects at Small Liberal Arts Colleges* at www.dupontfund.org.)

To apply for a Phase II Energy Grant, schools must have successfully completed a Phase I



Lynchburg College's 'Early Adopter' Approach Pays Good Dividends

One might call Lynchburg College an "early adopter" of energy conservation practices and the sustainability ethos.

Years before Green Revolving Loan Funds were a popular topic of discussion, Lynchburg's leaders recognized the benefits of investing in energy retrofits. In 2010, the administration reviewed a list of campus needs and decided to borrow the funds to invest in \$4.6 million of energy conservation projects across campus. The upgrades were expected to pay for themselves in less than 10 years.

"As we looked at these projects, we realized this was a good business move for the college," Stephen Bright, vice president for business and finance, said in 2011.

Today, he has the data to back up that early assessment.

Since 2010, Lynchburg College has saved 4,557,600 KWH in electricity and 13,421,364 gallons of water.

Electricity savings were achieved chiefly through retrofitted lighting and heating and cooling systems, while water savings have come from low-flow toilets, showers and faucets and smart irrigation systems.

Today, sustainability efforts can be seen across the Lynchburg campus.

Buildings feature Energy Star rated windows and dormitories have air conditioning units that shut off when windows are opened. A rain garden and underground

stormwater tanks manage runoff and reduce erosion. Solar panels atop dormitories help power hot water systems. A community garden provides fresh produce and gardening experiences for students. A "Bike Shack" provides repairs and maintenance for bicycles belonging to students and community members in an effort to encourage more biking and less driving.

Lynchburg College also purchases electricity through Collegiate Clean Energy, which produces power by burning landfill gasses.

Energy grant, ensuring that they have the infrastructure needed to track and monitor energy use and energy savings. In addition, the Jessie Ball duPont Fund supports schools' participation in the Green Revolving Investment Tracking System (GRITS), a web application that allows institutions to more easily manage and analyze complex energy projects and track financial savings.

To date, 11 institutions have received Phase II grants, with eight of those grants having enough longevity to track financial savings. As of the end of 2016, those eight schools had saved more than \$530,000 in energy costs and were on track to save \$2.8 million by 2021, according to GRITS calculations. That is the equivalent of taking 3,114 homes off the grid or 6,229 cars off the road.

"To achieve these gains, the Jessie Ball duPont Fund invested \$600,000 in these eight schools," Magill said. "To think that that investment will reap \$2.8 million in savings in a decade – that's a great return on investment. And that doesn't count the benefit to the colleges and the environment."

LESSONS LEARNED

As with any new body of work, there are many lessons learned. Among them:

It is critical to understand how systems work and develop the capacity to manage them. College leaders could not begin to lower energy consumption until they understood how energy was consumed on campus. In most cases, the college needed new tools and resources to measure and monitor consumption.

Leadership from the top is vital to success. At many colleges, facilities managers had long wanted to make needed changes to reduce energy consumption and save money. But they lacked either access to or support from the president's office. It takes leadership from the top to decide that energy conservation is a priority, to sanction the necessary investments and policy changes, and mediate the inevitable conflicts that will arise from competing forces.

Accessing Renewable Energy from Landfill Gas

Five of the small Virginia colleges supported by the Jessie Ball duPont Fund have found a way to convert virtually all of their electric use to renewable resources.

The key? Landfill gas.

The colleges — Hollins University, Emory & Henry College, Sweet Briar College, Randolph College and Lynchburg College — now purchase their electricity from Collegiate Clean Energy, which uses the gas from landfills to generate electricity.

"This effectively eliminates their carbon footprint from electricity," said Tom Loehr, who is the founder of Collegiate Clean Energy.

The gas generated by landfills, Loehr explained, escapes into the atmosphere, even in landfills that have been capped. And that gas is 21 times more destructive as a greenhouse gas than carbon dioxide. By capturing that gas and burning it to produce electricity,

its negative environmental effects are abated, and the electricity produced is considered renewable.

The benefits to colleges are significant.

On a typical campus, Loehr said, electricity accounts for 60%-70% of the carbon footprint. By using landfill-gas-generated electricity, the school gets not only carbon credits, but also Renewable Energy Credits. And the price is virtually the same as the cost of "brown" energy, or fossil-fuel-generated electricity.

Moreover, there are no real capital costs for the school to make the transition.

The landfill-gas-generated electricity is provided to the electric grid. The college's local utility continues to be the distributor of electricity from the grid to the college. The college gets two electric bills: one from Collegiate Clean Energy for the electricity, and one from the local utility for distribution.

Cross departmental engagement makes a great difference. Colleges successful at energy conservation exhibit teamwork among facilities managers, faculty and staff, finance departments, students and administration. All areas must work together to maximize savings and ensure a comfortable, welcoming and well-functioning campus.

Energy conservation has appeal among students, parents and donors. For many colleges, energy conservation efforts are a marketing advantage, attracting students and parents with an interest in environmental sustainability. Similarly, Green Revolving Loan Funds and other energy-saving activities can be appealing investments for donors, who see the potential of strong returns over time.

Opportunities for creative ideas abound. There are a number of obvious places to look for energy savings on a college campus. But there also are endless opportunities for creative solutions. Once the commitment to saving energy is firmly planted, faculty, staff and

students find excitement and enormous satisfaction in discovering new strategies and tracking the results.

TO LEARN MORE

Association for the Advancement of Sustainability in Higher Education (AASHE) www.aashe.org/

Second Nature, supporting the power, potential, and imperative of higher education in shaping a sustainable society. www.secondnature.org

Sustainable Endowments Institute, which encourages investment in Green Revolving Loan Funds and offers the Green Revolving Investment Tracking System (GRITS). www.endowmentinstitute.org

Higher Education Sustainability Initiative (HESI) <https://sustainabledevelopment.un.org/sdination/hesi>

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