



Financing Energy Efficiency Upgrades

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Introduction/Background

Often administrators or managers feel they must postpone installing energy efficiency upgrades because they do not have the funds readily available in their current budgets. However, delaying energy efficiency upgrades for as little as one year can prove to be an expensive decision, especially when you factor in the cost of wasted energy that may be included in your organization's inefficient facilities. The U.S. Environmental Protection Agency (EPA) estimates that as much as 30% of the energy consumed in commercial buildings may be used unnecessarily or inefficiently. Sometimes, the money lost due to inefficiencies over the span of one year can total more than all the costs for financing energy upgrades over the course of the entire financing period. This makes financing energy efficiency projects a good business decision.

Replacing outdated, inefficient lighting, motors, and heating, ventilation, and air conditioning (HVAC) systems can reduce your monthly electricity or gas bills. The dollars saved may be used to finance this new, more efficient equipment. Energy-efficient equipment pays for itself and the money saved may contribute to other projects or salaries. For example,

if installing a lighting retrofit reduces the energy bill by \$3,500 a month and the cost of financing is \$2,000 a month for 48 months, you will have an additional \$1,500 in monthly positive cash flow that could be used for other projects. The first four years of the new lighting system will generate \$72,000 in avoided costs, and \$42,000 annually thereafter, assuming that future budgets reflect current expenditures.

One basic method for determining the cost-effectiveness of installing energy saving features is the simple payback period. For example, in the Lighting Comparison chart below, an organization owns a small parking garage that houses 15 light fixtures that use 400-watt light bulbs. These lights are on 24 hours a day. Over the course of a year, these lights consume 52,560 kWh of electricity and cost \$7,358 to operate at a rate of \$0.14/kWh. Replacing them with two 8 ft., 60 Watt, T-8 lamps with electronic ballasts will reduce the energy consumption to 15,776 kWh at a cost of \$2,208. If the cost to make this change is \$5,000, it will take only one year to recover the investment. After that first year, there will be an increase in cash flow of \$5,150 per year if energy prices and budgets remain the same.

Lighting Comparison

	Number of Lamps	Watts per fixture	Total Watts	Total Kilowatts (KW)	KWH per day	KWH per year	Annual Cost at \$.14/KWH
Current fixtures	15	400	6,000	6.0	144	52,560	\$7,358
Suggested Replacement Fixture (Two 60 Watt T-8, 8 ft lamps with electronic ballasts)	15	120	1,800	1.8	43.2	15,768	\$2,208

Recommendations/Key Points

When energy efficiency projects are not in the current budget, you should consider pursuing the following alternatives rather than waiting for the funds to become available:

- Aggregated purchasing
- Gifts or donations
- Conventional Loans
- Leasing
- Tax-Exempt Financing
- Performance Contracting
- Shared Savings Agreements
- Grants
- Program Related Investments (PRIs)
- Capital Campaigns

Aggregated Purchasing

For smaller nonprofits, the cost of purchasing energy-efficient equipment can be reduced by joining with other nonprofit organizations. Vendors will provide lower prices as the purchase volume increases. This can be a good way to offer your donor-base an inexpensive way to buy programmable thermostats, compact fluorescent light bulbs, or LED exit signs. For example, the Greater Washington Interfaith Power and Light's aggregate purchasing plan offers discounted prices to houses of worship on energy efficiency products.

Gifts or Donations

Providing donors the option of making donations that tie directly to climate change and/or the purchase of energy-efficient equipment increases the value of the donation and provides an opportunity to acknowledge the donor with a certificate, plaque, or other show of appreciation. Also, consider announcing any need for repairs or upgrades in a publication, stating that the organization appreciates donations of time as well as money.

Conventional Loans

Without adequate capital on hand, loans may be appropriate for an energy efficiency project. Traditional lenders may require substantial down payments and may require that you maintain an

account with compensating balances. Loans are typically secured by the asset purchased and may include other assets of the organization. The loan is repaid over time with a firm term and predetermined interest rate, which could be fixed or variable. Unless you are dealing with a non-traditional source that values the social benefit of your services (like a foundation or community investment financial institution), the interest rate on the loan will reflect the lender's perception of the credit risk.

Leasing

For-profit companies use commercial leasing as an effective tax strategy, and energy efficiency equipment that is considered personal property may be leased. From a financial perspective, commercial leases fall into two categories (operating or capital leases). The monthly payments of an operating lease are usually lower than loan payments; but the asset is owned by the lessor ("lender"). Unlike a loan or a capital lease, operating lease payments are considered an operating expense. A common capital lease is a "finance lease" which must be reflected on the lessee's (borrower's) balance sheet. A finance lease usually contains a "bargain purchase option," which is frequently \$1. A "true lease" gives the lessee the option to buy the equipment at its true fair market value at the end of the lease term, and may allow the lessee to deduct the monthly lease payments as an operating expense. Because most nonprofits are tax-exempt, tax strategies are not usually a consideration when deciding which type of lease to enter into.

Tax-Exempt Financing

If your organization is a "political subdivision" as defined under Section 103 of the Internal Revenue Code, you may qualify for tax-exempt lease-purchase financing. Because the interest component of the payment is not subject to federal income tax for the lender, the interest rates tend to be substantially lower than regular commercial rates. Although Not-for-profit organizations created under Section 501(c)(3) of the Internal Revenue Code do not qualify directly as issuers of tax-exempt obligations, they may qualify for conduit financing by working through the city, health, or education authorities.

Performance Contracting

Designed for larger projects, performance contracting allows for the use of energy savings from the operating budget instead of from the capital budget to pay for necessary equipment. Usually, there is little or no upfront cost for the organization benefiting from the installed equipment, allowing the energy-efficient equipment to free up potential savings that would otherwise be tied up in the operating budget. An energy performance contract is an agreement between the organization and an **energy service company (ESCO)** to provide a variety of energy saving services and products. Since these projects usually entail multiple buildings and include the upgrades of entire lighting and HVAC systems, the startup cost may be high and the payback period lengthy. However, the customer pays little or no upfront costs, and the ESCO will be paid based on the verifiable energy savings.

The ESCO will identify the energy saving measures through an extensive energy audit and install and maintain the equipment. The energy savings cover the costs of using the ESCO and financing for the project. The most common type of performance contract in the public sector is called a "guaranteed savings agreement," whereby the ESCO guarantees the savings of the installed energy-efficient equipment. The ESCO assumes the performance risk of the energy-efficient equipment so that if the promised savings are not met, the ESCO pays the difference. If the savings allow, a performance contract may include related services such as the disposal of hazardous waste from the replacement of lighting systems or from the removal of asbestos from the upgrading of ventilation systems. The ESCO usually maintains the system during the life of the contract and can train staff to assist or to continue with its care after the expiration of the contract period. The ESCO can also play a major role in educating the customer about its own energy use.

Performance contracts typically consist of a project development agreement that indicates what measures will be implemented to save energy (and money); an energy service agreement, which indicates what needs to be done after the

installation to maintain ongoing savings; and a financing agreement. Organizations may choose to access lower cost, tax-exempt funding rather than go through the ESCO for financing. It is important to note that savings are measured in kWh and therms, and then translated into dollars at the current market price for electricity and natural gas.

Shared Savings Agreement

A shared savings agreement is a type of energy services performance contract in which the ESCO installing the energy-efficient equipment receives a share of the savings during the term of the agreement. In a fixed shared savings agreement, the customer agrees to a payment based on stipulated savings, and once the project is completed, the payments usually cannot be changed. After the completion of the project, the savings are verified by an engineering analysis or other mutually agreed upon method. In a true shared savings agreement, the savings are verified on a regular basis and the savings payments change as the savings are realized.

Grants

Obtaining grants is another effective source of funds for implementing measures that can make your office building more energy-efficient or environmentally sustainable. Award amounts can vary in size from a few hundred dollars to hundreds of thousands of dollars to install energy efficiency measures, to subsidize required or voluntary innovative storm water management systems such as green roofs, rain gardens or pervious surfaces, or to incorporate other green building initiatives. For example, DC Greenworks and Casey Trees in Washington, DC, utilized grants from the National Fish and Wildlife Foundation and the former Environmental Health Administration of the Department of Health when they retrofitted a green roof on an office building at 1425 K Street, NW, housing Casey Trees in downtown DC and owned by Blake Real Estate.

Some other foundations or organizations that offer grants or technical assistance for green initiatives are listed at the end of this chapter.

Program Related Investments (PRIs)

In addition to grants, some foundations also offer program related investments (PRIs), which include financing methods usually associated with banks or private investors, as long as the investment furthers some aspect of their charitable mission and meets IRS guidelines. PRIs can fund a variety of projects including arts and social services projects, loans for nonprofit facility renovations and equipment purchases, and may include equity investments. PRIs are typically done at below market terms and rates.

Capital Campaigns

A capital campaign is an organized fund raising effort whose goal is to collect the money needed to finance major needs of an organization, such as a building or major repair project, which may include energy efficiency measures. Depending on who will be asked for money, it may be necessary to conduct a survey in order to match the project's needs to the potential donor's areas of interest. Utilizing consultants or companies that specialize in managing capital campaigns can help with the design of promotional materials and the crafting of the message so that the appeal is effective and consistent. Foundry United Methodist Church in Washington, DC, raised \$1 million to upgrade its electrical system, make improvements on their windows, and install a new fire detection and alarm system. These improvements were implemented in a wing of their church that was constructed in the early 1960s.

Choosing a Financing Strategy⁶

Making the decision of what financing to utilize requires a concerted effort. Factors to consider include the balance sheet or fund balances, the initial payments, ownership, and performance risk.

- **Financial Statements** – Existing liabilities, fund balances and the organization's cash flow can determine whether you will be able to take on additional debt.

- **Initial payment** – A large initial payment may be prohibitive for many nonprofit organizations. Options include utilizing grants or seeking gifts from donors.
- **Payments** – Depending on your cash flow, you can set the terms of financing so that your monthly payments are less than the energy savings realized.
- **Ownership** – Leasing and performance contracting may limit ownership when the financing terms end and clearly indicate who is assuming the equipment performance and savings risks. Make sure you fully understand the terms of the contract.
- **Performance Risk** – All energy investments have some level of risk involved. To reduce this risk, make sure to interview several ESCOs, installers, contractors, or financiers to make the best choice. Properly calculated savings and effectively performed work will reward you with a more secure return.

ENERGY STAR® Tools and Resources

EPA's ENERGY STAR no-cost tools and resources can help nonprofits make better, informed decisions about their energy efficiency projects and operational budgets. Of particular interest is ENERGY STAR's Cash Flow Opportunity Calculator, which addresses three common questions: (a) how much new equipment can be purchased from the energy savings, (b) should the equipment purchase be financed now or is it better to wait until funds are available in a future budget, and (c) is money being lost by waiting for a lower interest rate? You can download this spreadsheet from http://www.energystar.gov/ia/business/cfo_calculator.xls. For more information on ENERGY STAR, please see the next chapter.

Additional Resources

The Kresge Foundation – Their Green Building Initiative is intended to increase the awareness of sustainable or green building practices among nonprofits and encourage them to consider building green through educational resources and special grants. (www.kresge.org)

The District Department of the Environment, Energy Division – The Renewable Energy Demonstration Project grant has funded up to 50 percent of the cost to implement a project that produces meterable electricity using a renewable source of fuel (i.e., solar photovoltaic, biomass CHP, wind, or hydropower where applicable). The Nonprofit Energy Efficiency Initiative provides information to nonprofits to help make their work spaces and buildings more energy efficient. (<http://ddoe.dc.gov>)

The District Department of the Environment, Watershed Protection Division – annual Low Impact Development (LID) Request for Proposals (RFP) Reimbursable Cash Grant Program for innovative storm water control measures such as green roofs, rain gardens and permeable surfaces. Only nonprofit organizations are eligible.

The District Department of the Environment, Watershed Protection Division – The Low Impact Development Design/Build Services program, in conjunction with US Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), is a competitive program providing complete design and construction services, not cash grants, for installation of innovative storm water control measures on public and private properties. (<http://ddoe.dc.gov>)

DC Greenworks – The Green Roof Subsidy Program will provide a subsidy of approximately \$3.00/sq ft towards retrofitting older commercial structures (pre-1988) with greenroofs over 3,500 sq ft. (www.dcgreenworks.org)

National Association of Energy Service Companies
www.naesco.org

The Foundation Center – resource for grants and other resources
www.foundationcenter.org

US Department of Agriculture Natural Resources Conservation Service
www.nrcs.usda.gov

The National Fish & Wildlife Foundation
www.nfwf.org

Environmental Protection Agency, Low Impact Development
www.epa.gov/nps/lid

Center for Neighborhood Technologies Green Values Storm Water Calculator
<http://greenvalues.cnt.org/calculator>

Natural Resources Defense Council
www.nrdc.org/water/pollution/storm/stoinx.asp

Green Roofs
www.greenroofs.org

Glossary

Cash flow

The dollars saved from utility bills after the completion of an energy efficiency project, plus any avoided maintenance expenditures minus the cost of financing.

Energy Service Company (ESCO)

A business that develops, installs, and finances projects designed to improve the energy efficiency and maintenance costs for facilities over a seven to 20 year time period. ESCOs act as project developers for a wide range of tasks and assume the technical and performance risks associated with the project.