Financing

Overview

Energy performance projects may be different from many other business investments in that they provide an immediate and predictable positive cash flow resulting from lower energy bills. This feature allows them to be financed with both familiar and unconventional financing products.

Regardless of your organizational requirements or constraints, there is a financing option available to help you realize the profitability of energy performance improvements.

Financing section discusses payment and financing options and suggests evaluation criteria to help you select the option that is right for your organization, whether you are in the private or public sector. While the right financing option will depend upon many factors such as debt capacity, in-house expertise, and risk tolerance, there are viable options for virtually any type of organization. The following table summarizes financing options traditionally used in the public and private sectors.

	Public	Private
Purchasing	1	1
Cash	1	1
Loan		1
Leasing		
Capital Lease		1
Tax-Exempt Lease		1
Operating Lease		1
Performance Contracting		
Shared Savings	1	1
Paid from Savings	1	1

Payment and Financing Options

The payment and financing options discussed below include:

- Purchasing equipment and services
- Leasing
- Performance contracting
- Public and Institutional Options

Purchasing Equipment and Services

Cash

A cash purchase is the simplest method for financing energy performance improvements. A cash purchase makes sense if your organization has cash reserves and a strong balance sheet. The advantage of a cash purchase is that all cost savings realized from the upgrade are immediately available to your organization. Additionally, the depreciation of the equipment becomes a tax deduction. The disadvantage of a cash purchase is the loss of opportunities associated with not having that capital available for other investments.

Generally, relatively inexpensive, simple efficiency measures that are likely to pay for themselves in about a year are purchased with cash. Large complex projects are often financed differently.

Cash Purchase	
On balance sheet?	yes
Initial payment	100%
Payments	none
Ownership	owner
Tax deductions	depreciation
Performance risk	owner

Loan

Lenders may require up to a 40 percent down payment on loans for energy projects. Generally, a high-risk loan will have less leverage (ratio of debt to equity for the project), a higher interest rate, and a shorter term of debt. As a borrower, you may put up business or personal assets as security for the loan. Your borrowing ability will depend on your organization's current debt load and credit worthiness. Loan payments may be structured to be equal to or slightly lower than projected energy savings. In this financing arrangement, you bear all the risks of the project and receive all the benefits.

Including high performance features during new building design is simpler to justify, since energy efficiency depends on the selection and combination of components that will be purchased regardless of performance goals. Rightsizing lighting and HVAC equipment may eliminate incremental first cost increases. As a result, many of these projects need no additional funding or a slight increase for extended architectural and engineering services and commissioning.

Loan	
On balance sheet?	yes
Initial payment	downpayment
Payments	fixed
Ownership	owner
Tax deductions	depreciation, interest
Performance risk	owner

Leasing

You may procure your energy performance upgrade through leasing to spread out the term of payments. Lease payments are usually lower than loan payments. Laws and regulations for equipment leasing are complex and change frequently, so be sure to consult your financial executive, attorney, or auditor before entering into a lease agreement.

Capital Lease

Capital leases are installment purchases of equipment. Little or no initial capital outlay is required. With a capital lease, you eventually own the equipment and may take deductions for depreciation and for the interest portion of payments. A capital asset and associated liability will be recorded on your organization's balance sheet.

Based on the criteria defined by the Financial Accounting Standards Board (FASB) Statement No. 13, a lease meeting one or more of the following criteria qualifies as a capital lease:

- The lease transfers ownership of property to the customer at end of the lease term.
- The lease contains a bargain purchase option.
- The lease term covers 75 percent or more of the estimated economic life of the equipment.
- The value of the lease equals or exceeds 90 percent of the fair market value of the equipment at the beginning of the lease.

If you work for a governmental organization, you may be eligible for a tax-exempt capital lease. Because the lessor does not pay taxes on the interest from these leases, the rates are lower than typical market rates. For municipal organizations that can undertake new debt, tax-exempt capital leases can be very attractive.

Tax-Exempt Lease

A tax-exempt lease purchase agreement, also known as a municipal lease, is closer to an installment purchase agreement than a rental agreement. You will own the equipment after the financing term is over. A benefit of the lease purchase agreement is that the lessee's (borrower's) payment obligation usually terminates if

the lessee fails to appropriate funds to make lease payments. Because of this provision, neither the lease nor the lease payments are considered debt, and payments can be made from the energy savings in your operating budget. Unlike bond issues, tax-exempt lease purchase financing usually does not require a voter referendum because it is considered an operating rather than capital expenditure due to this non-appropriation language. However, lenders will want to know that the assets being financed are of essential use, which will minimize the risk of non-appropriation. In fact, your organization may already be leasing equipment, and it may be surprisingly easy to add your energy project to the existing lease agreement, especially if your organization has a Master Lease in place with a lending institution.

Capital Lease	
On balance sheet?	yes
Initial payment	none
Payments	fixed
Ownership	owner
Tax deductions	depreciation, interest
Performance risk	owner

Operating Lease

Under an operating lease, the lessor owns the equipment. It is, in effect, "rented" (leased) to your organization for a fixed monthly fee during the contract period. The lessor claims any tax benefits associated with the depreciation of the equipment. At the end of the contract term, you can purchase the equipment at fair market value (or at a predetermined amount), renegotiate the lease, or have the equipment removed.

To meet the FASB definition of an operating lease, the lease term must be less than 75 percent of the equipment's economic life, and the total value of the lease payments must be less than 90 percent of the fair market value of the equipment at the start of the lease. If the equipment has residual value as used equipment, it may be eligible for an operating lease.

Discuss the project's qualifications with a financial decision-maker before entering into an operating lease for energy-efficient equipment.

Operating Lease	
On balance sheet?	no
Initial payment:	none
Payments:	fixed
Ownership:	lessor
Tax deductions:	lessor
Performance risk:	lessor

Performance Contracting

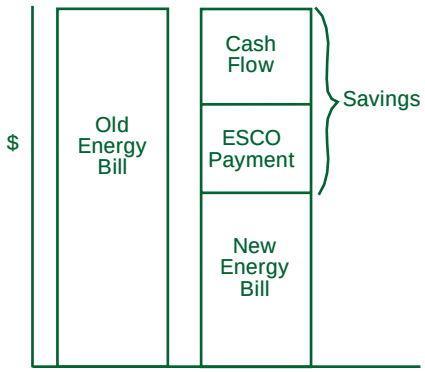
As you research financing options for your project, you will certainly hear about performance contracting. A performance contract may be the preferred financing option if your organization wants to keep the upgrade project off its balance sheet. This type of contracting can be complex, but it is becoming increasingly common.

A performance contract is one in which payment for a project is contingent upon its successful operation (see Figure 1). For an energy performance upgrade, services are rendered in exchange for a share of the future profits from the project.

A performance contract can be undertaken with no up-front cost to the building owner and is paid for out of energy savings. The service provider obtains financing and assumes the performance risks associated with the project. The financing organization owns the upgraded equipment during the term of the contract, and the equipment asset and debt do not appear on your balance sheet. Financing for performance contracts relies little on the financial strength of the building owner, but it is based on the cost savings potential of the project.

Through performance contracting, any of the financing options discussed above can be negotiated to guarantee that, as the customer, you receive the estimated cost savings from the energy performance upgrade. Performance contracting can be applied to purchases or leases.

Figure 1: Performance Contract



In a performance contract, an outside party provides a services package. This package can range from a simple audit, installation, and monitoring to full operation of a facility's energy systems. The service provider typically conducts an energy audit, designs the cost-effective projects, obtains bids, manages the construction, guarantees energy savings, obtains financing, and maintains the energy-saving capital improvements. You use resulting energy savings to pay for the improvements.

Performance contracts are sometimes referred to as "shared savings" or "paid from savings" contracts. These terms refer to the manner in which payment is made for the upgrade.

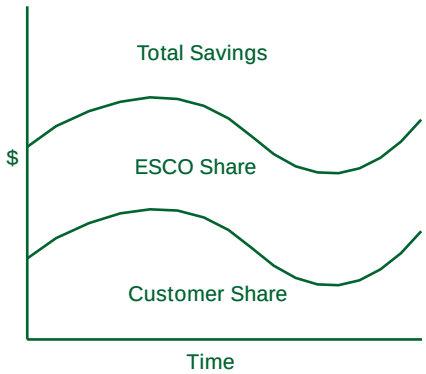
Performance Contracting	
On balance sheet?	no
Initial payment:	none
Payments:	variable or fixed
Ownership:	contractor
Tax deductions:	contractor
Performance risk:	contractor

The service provider pays the energy bill and retains the difference between your payment and the actual bill (for example, the actual bill may be only 60 percent of the expected bill). In this case, if there is an increase in energy usage, the service provider must make up the difference between your payment and the actual bill.

Shared Savings

With shared savings, the dollar value of the measured savings is divided between you and the service provider (see Figure 2). If there are no cost savings, you pay the energy bill and owe the contractor nothing for that period. The percentage distribution of the savings between the service provider and the customer is agreed upon in advance and documented in the performance contract. At the end of the contract, ownership transfers to the building owner as specified in the contract. You either may purchase the equipment at fair market value or simply assume ownership of the equipment paid for during the contract term.

Figure 2: Shared Savings

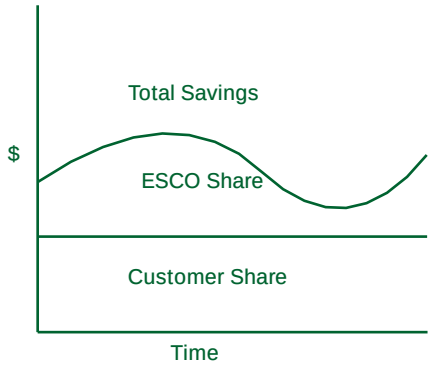


Figures 2 and 3 illustrate the distribution of the cost savings under two scenarios. The specific payment arrangements between you and the service provider are specified in your contract.

Paid from Savings

Almost all energy performance projects are paid for from the savings created by reduced energy usage. Thus, the term "paid from savings" can be used for several different types of energy-upgrade contracts. Here it is being used to refer to another performance contract payment whereby you pay the service provider a predetermined amount each period (for example, an amount equal to 80 percent of the expected energy bill before the upgrade—see Figure 3).

Figure 3: Paid From Savings



Performance contracts can be complex and take a long time to negotiate and implement. The contracts usually:

- Specify detailed work for individual facilities
- Involve large sums of capital
- Cover a wide range of contingencies
- Require significant expertise in law, engineering and finance

For a service provider and financier to make a commitment to an energy efficiency project, the potential for savings must be substantial. Performance contracts are usually arranged for facilities with annual energy costs over $150,000. However, smaller projects may be good candidates depending on the project specifics.

Entering into a performance contract is like forming a partnership with a service provider. You are arranging a complex, long-term relationship through a contractual agreement. It is important for you to remain in close communication with the service

provider during contract negotiations and project implementation. Build contingencies into the contract for any issues you can anticipate. For example, an operations change such as adding a piece of manufacturing equipment or changing operating hours can have a significant impact on energy use. By incorporating responses to likely changes up front, you can avert major operational or contractual problems down the road.

A performance contract is a major commitment for you and the service provider. As a financing tool, it offers the benefits of low-risk capital improvements off the balance sheet. Although there are no initial payments to the contractor, you should expect to spend time and resources providing data the service provider will need to perform the audit and establish a baseline from which to estimate energy savings. If you wish to select a service provider through a competitive procurement, you will have to prepare requests for qualifications or proposals and evaluate the submittals.

Defining all the terms and conditions of the contract can be a lengthy process and may require hiring independent engineers or other professionals to review the contract on your behalf. The business of performance contracting is growing, so there is an expanding pool of competent and capable service providers available to you. Although the contracting process is complex, it creates an opportunity for organizations with limited debt capacity or capital resources to undertake profitable energy performance projects that would otherwise not be implemented.

Guaranteed Savings Insurance

Guaranteed savings insurance is a method of reducing your risk. This option guarantees that energy cost savings will exceed an established minimum dollar value. Typically, this guaranteed minimum equals the financing payment for the same period to ensure a positive cash flow during the financing term.

Like any insurance policy, you'll pay a premium that compensates the guarantor for the performance risk and covers monitoring costs. This premium is added to your loan or lease payment and the guarantor will maintain and monitor the performance of your upgrade. The supplier, installer, or service provider selling the upgrade usually offers this guarantee.

Public and Institutional Financing Options

The two most common public sector mechanisms are tax-exempt lease purchase agreements and performance contracts. A performance contract can be considered a finance mechanism because it bundles together with performance guarantees one or more of the following components: financing, equipment, energy costs, and maintenance. Both mechanisms are effective alternatives to traditional debt financing, and both may allow you to pay for energy efficiency upgrades by using money that is already in your utility operating budget. By spending only operating

budget dollars, you may avoid the cumbersome capital budget process altogether. Both mechanisms will allow you to draw on dollars saved from future energy bills to pay for new, energy-efficient equipment today.

Evaluation Factors

Finding the right financing vehicle for your project requires a thorough evaluation of your options. The following factors will help define your organization's business profile and will enable you to select the financing option that best meets your organization's objectives.

- Balance sheet
- Initial payment
- Payments
- Ownership
- Tax deductions
- Performance risk

A brief description of each follows.

Balance Sheet

If your organization is near the level of debt permitted by your lenders, you may not be able to undertake additional debt without violating certain covenants. There are, however, methods that enable a company that cannot assume more debt to proceed with an upgrade and take advantage of the financial benefits.

Initial Payment

A large initial capital outlay may be an obstacle for some organizations planning energy performance upgrades. If you have large capital reserves or are planning a small project, it makes sense to pay for the project with cash. Then all the cost savings from the project will be immediately available to you to offset the original investment. There are financing options that can move a project forward with no initial capital outlay from you, the customer. If capital resources are tight, you may want to consider a performance contract.

Payments

Your goal is to obtain financing at a minimum cost to your organization. However, benefits such as off-balance sheet financing may justify paying more for your borrowed money. The general advantage of energy performance investments is that even with performance contracts, which tend to be more costly because of the amount of monitoring and verification involved, you are guaranteed to receive

Table 1: Financing Options

	Cash	*Bonds*	*Municipal Lease*	*Performance Contracts*
Interest Rates	N/A	Lowest	Low tax-exempt rate	Can be taxable or tax-exempt tax-exempt rate
Financing Term	N/A	May be 20 years of more	Up to 10 years is common and up to 12-15 years is possible for large projects	Typically up to 10 years but may be as long as 15 years
Other Costs	N/A	Underwriting legal opinion, insurance, etc.	None	May have to pay engineering costs if contract not executed
Approval Process	Internal	May have to be approved by tax payers or public referendum	Internal approvals needed. Simple attorney letter required	RFP usually required, internal approvals needed
Approval Time	Current budget period	May be lengthy - process may take years	Generally within one day	Generally within 2-3 days once the award is made
Funding Flexibility	N/A	Very difficult to go above the dollar ceiling	Can set up a Master Lease, which allows you to draw down funds as needed	Relatively flexible. An underlying Municipal Lease is often used
Budget Used	Either	Capital	Operating	Operating
Largest Benefit	Direct access if	Low interest rate because it is a general obligation of the public entity	Allows you to buy capital equipment using operating dollars	Provides performance guarantees which help approval process
Largest Hurdle	Never seems to be enough money available for projects	Very time consuming	Identifying the project to be financed	Identifying the project to be financed and selecting the ESCO

financial benefits immediately upon completion of the project. At the end of the contract term, those savings are yours.

Ownership

If you own your energy performance upgrade equipment, you are entitled to tax deductions for depreciation or interest payments and other benefits. You are also liable for any performance risk associated with the equipment.

Tax Deductions

As an equipment owner, your business is entitled to potential tax benefits such as depreciation and deductions for loan interest. If you finance your upgrade off the balance sheet, you will not be eligible for tax benefits.

Performance Risk

There is risk associated with any investment. Energy performance upgrades can be low-risk investments because they apply proven technologies with long records of performance. However, the financing option you choose will affect who bears the risk of performance failure.

Performance risk of energy upgrades depends on the accuracy of the assumptions concerning maintenance, cost of energy, occupancy, and other factors. Lighting upgrades are typically considered a lower risk investment than HVAC investments, because it is easier to predict energy savings from lighting upgrades.

More Savings Opportunities

When you begin your search for project capital, begin by bargain hunting for special programs that support energy performance. Every organization planning an energy performance upgrade should investigate the availability of utility incentives, state assistance, and other cost-reducing measures.

Utility Incentives

Utilities often provide financial incentives for energy performance upgrades through rebates, fuel switching incentives, low-interest loans, and energy audits. Check with your local utility to learn what programs are available.

State Assistance

Some states offer financial assistance to nonprofit organization or small businesses for operating improvement upgrades. Contact the state agency that monitors the type of service provided by your organization to inquire about these opportunities. For

example, Florida's Energy Loan Program was created to motivate small business owners to evaluate their total energy usage and implement energy conservation measures. Funding may be available through the State Energy Programs, energy conservation programs supported by the US Department of Energy.

Summary of Options

Whether your energy performance project involves small improvements or a complete system upgrade, there is a suitable financing option for you. A simple cash purchase yields immediate benefits to the customer and is a straightforward transaction. It is well suited for small or low-risk upgrades. Performance contracting, the most complex type of arrangement, offers the customer the benefit of risk protection. It is also the most costly financing option because of the amount of monitoring and verification required. However, even this more expensive alternative yields a positive cash flow for the customer immediately upon installation. Regardless of your organizational requirements or constraints, there is a financing option available to help you realize the profitability of energy performance improvements.

Table 2: Summary Of Options

Evaluation Factor	*Cash Purchase*	*Loan*	*Capital Lease*	*Operating Lease*	*Performance Contract*
Balance sheet	on	on	on	off	off
Initial payment	100%	downpayment	none	none	none
Payments	none	fixed	fixed	fixed	variable or fixed
Ownership	owner	owner	owner	lessor	contractor
Tax deductions	depreciation	depreciation, interest	depreciation, interest	lessor	contractor
Performance risk	owner	owner	owner	lessor	contractor

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INNOVATIVE FINANCING SOLUTIONS: FINDING MONEY FOR YOUR ENERGY EFFICIENCY PROJECTS

Are you having trouble getting energy efficiency projects approved and implemented? If so, this paper from EPA's ENERGY STAR is for you. It describes how performance contracts and tax-exempt lease-purchase agreements may offer you a practical solution when no money is available in the current budget for further improvements. This document also provides clear financial reasoning and cost modeling, which demonstrate that energy efficiency projects really can pay for themselves within existing operating and capital budgets. It equips you to persuade the decisionmakers within your school district, city, county, community college, university, or state that implementing energy efficiency upgrades is a good business decision and should be done as soon as possible.

EPA's ENERGY STAR is a voluntary government-industry partnership offering a suite of resources and tools to help businesses, government agencies, organizations, and consumers become more energy efficient in the workplace and at home. Through ENERGY STAR, an organization can learn how to apply energy best management practices and technologies that result in improved energy performance, financial well-being, and environmental protection.

Introduction

While the reasons for delaying projects may vary, most energy efficiency projects stall due to one or a combination of the following perceived barriers:

(1) Lack of money.

(2) Lack of time or personnel to design and plan the projects because of other, higher priorities.

(3) Lack of internal expertise to implement the projects.

(4) Lack of "political will" within the decisionmaking process.

This paper focuses on the perception that no money is available in your organization's budget for energy efficiency projects. As you will see later, resolving this first barrier frequently provides the solution to the others.

> *"Anyone who doesn't have an energy efficiency program is acting fiscally irresponsible."*
>
> - Walter George
> Anne Arundel County
> Public Schools, Maryland
> July 2001

EPA
United States
Environmental Protection
Agency

When you propose energy projects to the decisionmakers within your city, county, school district, community college, university, or state, the financial barriers they commonly raise can be characterized as follows:

- If it is not in this year's budget, it simply has to wait.
- Equipment improvements must be paid from the capital budget.
- Paying lower interest (by floating bonds) or no interest (by delaying the project and planning it into future budgets) saves more money and, therefore, is in the best interest of our organization.
- Taxes or fees will have to be increased to pay for these improvements.
- Performance contracting with an energy service provider (ESP) is expensive and unreliable.
- Tax-exempt lease-purchase agreements don't lend themselves to energy projects and are expensive alternative funding solutions.

Some of these comments may sound familiar. In fact, they are common misconceptions, which the information presented here can help you overcome. This paper defines some standard financial terms, presents financing options, and includes an effective "cost of delay" model that quantifies the opportunity costs inherent in energy efficiency projects. The next time you face your board, city council, chief financial officer, chief operating officer, or other decisionmaker, you will be better equipped to persuade them that energy efficiency upgrades can pay for themselves and should be implemented as soon as possible.

The brief case studies appearing in the sidebars throughout this paper illustrate how three different public entities worked through their financial hurdles to implement energy efficiency upgrades. For example:

- When officials at Brooklyn College (part of the City College of New York) realized they did not have enough money to install all the energy-efficient equipment needed to successfully complete their project, they chose a lease-purchase agreement performance contract and spent the dollars they anticipated saving from future operating budgets. As no capital budget commitment was necessary, the college purchased and installed the new equipment right away.
- In Shenendehowa Central School District, NY, officials knew that a tax increase was out of the question. Using a guaranteed performance contract, they found a way to pay for energy improvements within their existing approved budgets.
- State of New Hampshire officials insisted on minimizing any impact on the state's bond (credit) ratings while energy efficiency improvements were being implemented. After careful study, state officials settled on a master lease program that financed energy efficiency improvements using the dollars saved from future utility bills.
- The City of Amherst, NY, realized that by bundling a group of apparently unrelated city properties (ice rinks, city buildings, and the waste water treatment facility) together, they could get a very competitive bid from an ESP and low-cost financing from a lender.

What do these four examples have in common and why were the outcomes successful? The State of New Hampshire, Brooklyn College, Shenendehowa Central School District,

Brooklyn College, New York City

By 1998, most of the equipment that produced chilled water for campus air conditioning systems was approaching the end of its useful life. Because this equipment was decentralized, the college faced much higher replacement costs than it would have for a shared chilled water plant. The total cost of the project was $23 million, of which The Dormitory Authority of the State of New York (DASNY) agreed to provide $15 million. Brooklyn College officials, however, were still $8 million short of the funds necessary to install the most efficient equipment they knew should be purchased; and using capital budget dollars was not an alternative. So they negotiated an energy efficiency performance contract that included an $8 million lease-purchase agreement to cover the shortfall. The energy service provider projected the savings over 12 years and structured the lease-purchase payments to be 85 percent of the projected savings-guaranteeing that the savings realized in the project would be sufficient to cover the lease payments. The agreement also included non-appropriation language, making the lease payments an operating rather than a capital expense.

and Amherst, NY, all found that using performance contracts with reputable energy service providers (ESPs)-combined with tax-exempt lease-purchase agreements as the financing vehicle-provided the best, most cost-effective solution. Other public agencies undertaking similar energy efficiency projects include Pennsylvania's Allegheny County, which turned to performance contracting when its capital budget was reduced by 20 percent; Mississippi, Virginia, and Maryland, which initiated statewide Energy Efficiency Master Lease Programs (MLPs); and Florida's Miami-Dade County School District, which added energy efficiency projects to an existing lease-purchase Certificates of Participation (COPs) program as the lowest cost alternative.

Background: Operating Expenses versus Capital Expenses

To argue the advantages of a tax-exempt lease-purchase agreement and a performance contract, facility managers must be conversant with the roles that the operating expense budget and the capital expense budget play in their organizations. Typically, ***capital expenses*** are those that pay for long-term debt and fixed assets (such as buildings, furniture, and school buses) and whose repayment typically extends **beyond** one operating period (one operating period usually being 12 months). In contrast, operating expenses are those general and ***operating expenses*** (such as salaries or supply bills) incurred **during** one operating period (again, typically 12 months).[1] For example, repayment of a bond issue is considered a capital expense, whereas paying monthly utility bills is considered an operating expense.

The disadvantages associated with trying to use capital expense budget dollars for your energy efficiency projects include the following: (1) capital dollars are already committed to other projects; (2) capital dollars are often scarce, so your projects are competing with other priorities; and (3) the approval process for requesting new capital dollars is time consuming, expensive, and typically requires voter approval.

Understanding Performance Contracts and Tax-Exempt Lease-Purchase Agreements

Performance Contracts

Performance contracting is a common way for public sector organizations to implement energy efficiency improvements, and it frequently addresses financing for the needed equipment, should you chose not to use internal funds (e.g., bonds, Certificates of Deposit, etc.). Performance contacts can be complex agreements that address project development, energy services, and financing issues. Common financing options under a performance contract include (1) ESP-based financing, (2) tax-exempt lease-purchase agreements provided by independent third parties, and (3) state or utility funding. As a facility manager, you can overcome the "lack of time and lack of expertise" barriers mentioned at the beginning of this paper by outsourcing the work to qualified, reputable energy service providers using a performance contract.

Under a performance contract, the ESP insures that the actual energy savings will match the projected savings, and the contract identifies the procedures by which these savings will be measured and verified. In a Guaranteed Savings Agreement (GSA)-the most popular type of performance contract used in the public sector-the energy performance of the equipment is guaranteed by the ESP, who agrees to reimburse the sponsoring organization for any shortfalls. A GSA bundles equipment purchasing and performance guarantees, and it may also include financing, energy costs, and maintenance. However, ESPs usually borrow at taxable interest rates, while public agencies are able to issue lower cost tax-exempt obligations. As a result, GSAs usually take advantage of

[1] According to Barron's Dictionary of Accounting Terms, capital expenditures are "outlays charged to a long-term asset account. A capital expenditure either adds a fixed asset unit or increases the value of an existing fixed asset." Operating expenditures are costs "associated with the … administrative activities of the [organization]."

lower cost tax-exempt lease-purchase agreements as the underlying financing instrument.

Tax-Exempt Lease-Purchase Agreements

Tax-exempt lease-purchase agreements are common public sector financing alternatives that allow repayment from operating expense dollars rather than capital expense dollars. They are effective alternatives to traditional debt financing (bonds, loans, etc.) and allow public organizations to pay for energy upgrades by using money already set aside in annual utility budgets. When properly structured, this type of financing mechanism allows public sector agencies to draw on dollars saved from future utility bills to pay for new, energy-efficient equipment today.

A tax-exempt lease-purchase agreement, also known as a municipal lease, is like an installment-purchase agreement rather than a traditional lease or rental agreement. Under most rental agreements (such as those used in car leasing), the renter (lessee) returns the asset (the car) at the end of the lease term, without building any equity in the asset being leased and can postpone the decision to acquire the asset being financed until the end of the lease term. A lease-purchase agreement, however, presumes that the public sector organization will own the equipment after the term expires. Further, the interest rates are appreciably lower than those on a taxable commercial lease-purchase agreement because the interest paid is exempt from federal income tax for public sector entities.

In addition, a tax-exempt lease-purchase agreement usually does **not** constitute a long-term "debt" obligation because of non-appropriation language commonly written into the agreement. This language effectively limits the payment obligation to the organization's current operating budget period. Therefore, if for some reason future funds are not appropriated, the equipment is returned to the lender, and the repayment obligation is terminated at the end of the current operating period without placing any obligation on your future budgets.

Public sector organizations-schools, community colleges, universities, and local and state governments-should consider using a tax-exempt lease-purchase agreement to pay for energy efficiency equipment when the projected energy savings will be greater than the cost of the equipment plus financing, especially when a creditworthy energy service provider guarantees the savings. If your financial decisionmakers are concerned about exceeding operating budgets, you can assure them that this will not happen because lease payments can come from the dollars to be saved on utility bills once the energy efficiency equipment is installed. Utility bill payments are already part of any organization's standard year-to-year operating budget. The financing terms for lease-purchase agreements may extend as long as 12 to 15 years; however, they are limited by the useful life of the equipment, so are usually 10 years or less.

Tax-Exempt Lease-Purchase Payments are Not Considered "Debt." Because of the non-appropriation language typically included in tax-exempt lease-purchase agreements, this type of financing may be considered an operating rather than a capital expense. As a result, the payments are not considered "debt" from a legal perspective in most states and usually do not require taxpayer approval. You will, however, have to assure lenders that the energy efficiency projects being financed are considered of essential use (i.e., essential to the operation of your organization), which

The State of New Hampshire

The New Hampshire Building Energy Conservation Initiative of 1997 prompted the evaluation of how to improve the energy efficiency of state-owned buildings. However, the state's Treasury Department was concerned about increasing the state's debt, which might adversely affect its credit rating.

Following discussions with energy service providers and finance professionals, state officials determined that by separating the financing activity from the technical performance obligations under a performance contract, the state could obtain lower cost financing (i.e., by setting up a tax-exempt master lease program (MLP) to underwrite the performance contracts).

After a year of reviewing similar programs, all parties agreed that the non-appropriation language of the MLP would allow the lease to be repaid from operating funds and thus have minimal impact on the state's credit rating.

This low-cost financing permitted New Hampshire officials to install a broader range of energy-efficient equipment than they would have if they had used the financing bundled into the ESP's performance contract. As a result, more projects met the legislated payback requirements. New Hampshire's credit rating did not change as a result of the energy conservation MLP. And, the state got better pricing by consolidating all projects under one agreement.

minimizes the non-appropriation risk to the lender.

How is Debt Defined? "Debt" can be interpreted from three different perspectives-legal, credit rating, and accounting. As mentioned above, most lease-purchase agreements are not considered "legal debt" because the payment obligation renews from year to year. By not entering into a long-term commitment, your organization may not be required to obtain local voter approval for this financing. However, credit rating agencies, such as Moody's and Standard & Poor's, do include some or all of the lease-purchase obligations when they evaluate a public entity's credit rating and its ability to meet payment commitments ("debt service"). These two perspectives (legal and credit rating) may differ markedly from the way lease-purchase agreements are treated (i.e., which budget is charged) by your own accounting department and your organization's external auditors.

In general, lease-purchase payments on energy efficiency equipment are small when compared to the overall operating expense budget of a public organization. This usually means that the accounting treatment of such payments may be open to accounting interpretations. Most public sector entities recognize that the energy savings cannot occur if the energy efficiency projects are not installed. As such, the source of repayment for the projects' lease-purchase costs (or the financing costs for upgrades) can be tied directly back to savings in the utility budget. Outside auditors, however, may take exception to treating these payments as operating expenses if they are considered "material" from an accounting perspective.

Determining when an expense is "material" is a matter of the auditor's professional judgment.[2] While there are no strictly defined accounting thresholds, as a practical guide, an item could be considered material when it is greater than 5 percent of the total expense budget in the public sector (or 5 percent of the net income for the private sector). For example, the energy budget for a typical medium-to-large school district is around 2 percent; therefore, energy efficiency improvements would rarely be considered "material" using this practical guideline.

Know Your State's Rules. Many public entities already lease equipment. Adding an energy project to an existing lease agreement may be surprisingly easy, especially if a Master Lease is in place with a lending institution. Governing statutes vary from state to state;[3] and the use of tax-exempt lease-purchase agreements may differ across schools, municipalities, and counties even within the same state. Public sector organizations should always consult legal counsel before entering into lease-purchase agreements.

There may be cases when a lease-purchase agreement is not advisable; for example, (1) state statute or charter may prohibit such financing mechanisms from being used; (2) the approval process may be too difficult or politically driven; or (3) other funds are readily available, (e.g., bond funding that will soon be accessible), or excess money exists in the current capital or operating budgets.

States Take Advantage of Energy Savings To Fund

Energy Efficiency Projects

Many states have recognized that the savings realized by installing energy efficiency equipment can be used to finance the needed equipment. For example:

- In Pennsylvania, public sector organizations are authorized to use funds

[2]According to Dr. James Donegan, Ph.D. (Accounting), Western Connecticut State University, an amount is "considered material when it would affect the judgment of a reasonably informed reader when analyzing financial statements."

[3]California and Indiana use "abatement leases" rather than "non-appropriation" leases. Under abatement theory, the lease is not considered "debt" because the yearly payment is limited to the ability to use the asset during the current operating period; if the asset cannot be used, then the payment can be reduced or "abated."

designated for operating expenses, utility expenses, or capital expenditures to meet lease-purchase or installment payments under performance contracts.[4]

- School districts in California are authorized to enter into energy efficiency financing relationships that "can be repaid from energy cost avoidance savings."[5]
- In Florida, "it is the policy of this state to encourage school districts, state community colleges and state universities to reinvest any energy savings resulting from energy conservation measures into additional energy conservation efforts."[6]
- In Minnesota, "a district annually may transfer from the general fund to the reserve for operating capital account an amount up to the amount saved in energy and operation costs as a result of guaranteed energy savings contracts."[7]
- In Texas, lease-purchase payments are to be "made from maintenance taxes" and "shall not be considered payment of indebtedness."[8]

Many other states support the idea of funding energy efficiency projects from future utility bill savings. Obtaining your accounting department's cooperation may be easier than you think, especially if determining the legal precedent in your state is a matter of doing a little research.

Getting the Best Deal

If tax-exempt lease-purchase financing is so good, why are some public organizations reluctant to use it to fund energy efficiency projects? One reason may be the higher stated interest rate when compared to that of a bond. There is, unfortunately, a common misconception that the lowest interest rate is always the best deal. If your finance decisionmakers make this assumption, you need to remind them that two factors must be addressed to determine the best financing alternative: (1) net interest costs and (2) the costs of delay.

Net Interest Costs

Every borrower seeks the best deal. As stewards of public funds, managers in the nation's public schools, community colleges, state universities, and local or state government agencies seek to provide the best quality service for the lowest net cost. Bonds at 3.5 percent interest sound better than a lease-purchase agreement at 4.0 percent; however, the real savings become clear only when the net interest cost has been calculated. Typically, lease-purchase agreements do not include any extra costs or fees outside the interest rate (with the exception of fees related to setting up an escrow account needed to manage funds during the construction period in case "construction progress payments" are necessary). The legal opinion for a lease-purchase agreement usually requires little or no research and can be provided by internal counsel.

On the other hand, a bond will require obtaining an extensive (and expensive) legal opinion, setting up a trustee, and retaining accounting services to ensure compliance. Bond issues may also incur costs to rate the bond, obtain insurance, set aside a cash reserve for the first year, and pay for printing or marketing fees-additional costs that can easily exceed $50,000. Adding these bond issuance costs to the cost of energy efficiency projects can dramatically change the economics of a project, unless the project is fairly large. Therefore, the financing alternative that generates the lowest total payment (the net interest cost) is the best deal-and this may **not** be the one with the lowest stated interest rate.

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[4] Pennsylvania Guaranteed Energy Savings Act 29 of 1996 - §5(b)

[5] California Education Code 17651 (a)

[6] Florida Statutes Title XVI, Chapter 235.215 (1)

[7] Minnesota Statutes 2000 Chapter 123B.65 Subdivision 7

[8] Texas Statutes Chapter 271 - Public Property Finance Act - §271.004

Political, as well as financial, issues must be taken into account when determining lowest net cost. A tax-exempt lease-purchase agreement is not considered legal debt and may be easier to implement than floating a bond, which is a capital expenditure and may require voter approval. Therefore, two additional costs must be added to the aforementioned calculation: (1) the out-of-pocket cost of advertising and staffing for a referendum, and (2) the intangible political cost of asking the taxpayers to approve "new debt." Frequently, the political cost is the greater of the two.

The Costs of Delay

Quantifying the costs of delaying the installation of an energy efficiency project adds a new dimension to the financial decision. School district and local or state government officials often feel that postponing the installation of energy efficiency equipment until such time as the operating or capital budget dollars are available-rather than financing the installation immediately-is a better financial decision. They reason that if internal budget dollars are used, paying interest can be avoided completely. However, delaying the installation will delay the point at which energy savings can begin and, therefore, has an opportunity cost attached to it.

- For example, if a $500,000 project has a 5-year simple payback, the average monthly savings will be about $8,333 per month ($500,000 divided by 60 months). Under this scenario, if the project is delayed by 12 months, the public sector organization will pay the local utility $100,000 more (12 times $8,333) during the delay period than it would have if energy efficiency equipment had been installed immediately.
- If financing for the lease-purchase is available at 4 percent for a term of 7 years (reasonable conditions for a traditional project), the *total* interest paid during the 7-year period will be $74,090 in absolute dollars, or about $25,910 *less than* the energy savings realized during the first 12 months of use ($100,000 minus $74,090). In other words, the savings realized by installing the equipment immediately rather than waiting for 12 months effectively reduces the interest rate for borrowed funds to less than 0 percent!
- The savings are in fact even greater, considering that a dollar paid for interest 7 years in the future is worth less than a dollar saved this year. Allowing for a real cost of money (or discount rate) of 3 percent, the $74,090 in financing charges translates to $66,753 in current dollars, or a real savings of almost $33,247 if equipment is financed and installed right away rather than waiting for internal funds to become available. Using third-party financing initially and paying it off early with approved future budget dollars may be the way to maximize an energy project's total cost savings.
- Many organizations choose to wait until funds are available in a future year's budget rather than entering into a financing agreement that requires paying interest, believing that paying no interest is always a better financial decision than paying any interest. Because the energy savings on most projects are so large, the lost savings incurred by waiting for one year are greater than all the present value of all the interest payments combined. In this example, financing the project today versus waiting for one year has a Net Present Value benefit of $3,365 when financing versus a **loss** of $9,033 over the term of the financing (7 years).

This cost of delay calculation is more complicated when comparing two different financing alternatives with

Shenendehowa Central School District, Clinton Park, New York

In 1996, the school district was facing escalating energy and maintenance costs for seven buildings constructed between 1952 and 1969. During that period, lowest first-cost had been the primary consideration, instead of life-cycle cost, when selecting the energy equipment. Three of the buildings relied exclusively on electricity for heating and air conditioning. Shenendehowa officials needed to make capital improvements at these facilities, but budgets were already strained. Further, they were unwilling to approach taxpayers for additional bond money.

To address these problems, school officials decided to install new energy-efficient equipment that could be paid for from future energy cost savings. With assistance from the New York State Energy Research and Development Agency (NYSERDA), they issued a Request For Proposal (RFP) for an energy service provider (ESP) that could provide a performance contract to address their needs. The winning ESP guaranteed the equipment performance and energy savings, which were verified using rigorous measurement and verification techniques.

Instead of bundling the financing under the performance contract, the school district chose to obtain the funds directly from a commercial lender using a tax-exempt lease-purchase agreement for a term of 10 years. The lease-purchase agreement contained non-appropriation language, which limited payments to the operating budget savings, thereby avoiding the capital budget. This financing option allowed Shenendehowa school officials to successfully install needed energy-efficient equipment without raising taxes.

different interest rates and terms, but the result is no less stark. For example, compare a bond or loan issued at 3.5 percent interest against a lease-purchase agreement offered by a local lender at 4 percent interest for the same project. Ignore, for the moment, any additional fees that must be added to the bond and focus on the ***unavailability of the funds for 12 months,*** while the lease-purchase funds are available immediately. A comparison of the consequences of these examples, based on the same $500,000 equipment cost and 5-year simple payback results in the following:

	Option 1	**Option 2**
Instrument	Lease-purchase	Loan or Bond
Budget	Operating[9]	Capital
Term	7 years	7 years
Interest rate	4.0%	3.5%
Monthly payment	$6,834	$6,720

Surprisingly, the difference in the monthly payments on this $500,000 project is only $114 a month ($6,834 minus $6,720), while the energy efficiency savings lost would be equal to $8,333 a month (as shown in the text above).

The key question becomes: How long will it take for the lost energy savings to consume the total savings realized from the lower interest rate financing? The answer: Just over 2 months (see Appendix B for calculation).

The following chart demonstrates these costs of delay based on waiting for the 3.5 percent "cheaper money" (rounded to the nearest $100) when 4% financing is immediately available for a $500,000 project with a 60-month simple payback:

Each month the project is delayed	**Savings or Loss**
1	$200
2	($8,100)
3	($16,500)
4	($24,800)
5	($33,100)
6	($41,500)
7	($49,800)
8	($58,100)
9	($66,500)
10	($74,800)
11	($83,100)
12	($91,500)

[9] Non appropriation or Abatement leases; actual treatment may vary by state.

As shown, a delay of 12 months amounts to a loss of $91,500, or over 18 percent of the original project cost.

If you would like a copy of the Cash Flow Opportunity Calculator Microsoft Excel™ spreadsheet that calculates these costs of delay, using your own project data, please contact Katy Hatcher, ENERGY STAR National Manager, Public Sector, at hatcher.caterina@epa.gov or visit www.energystar.gov.

The true cost of delay may be even greater, as none of these calculations includes the higher administrative costs of the loan or bond, nor the environmental benefits of installing the energy efficiency equipment sooner rather than later.

Conclusion: Improving Energy Performance and Fiscal Management

Energy efficiency equipment differs from other capital equipment. Because the dollars saved by installing energy efficiency equipment can be used to pay for its financing, this equipment can be installed without having to increase operating costs or use precious capital budget dollars. In fact, as long as the finance payments are lower than the energy dollars saved, a positive cash flow is created that can be used for other projects. Extending the repayment terms will reduce the monthly payment, improving the cash flow even more.

In today's economy of tight budgets and rising energy prices, a good energy efficiency policy is a necessity. As stewards of significant assets, public sector facilities and finance managers must aggressively manage all costs and maintain effective cash management programs. Accelerating the installation of energy efficiency equipment will improve both your facilities and your financial statement.

EPA through ENERGY STAR offers resources and tools to assist your organization in developing a roadmap to better energy performance. To learn more about ENERGY STAR, contact Katy Hatcher, ENERGY STAR National Manager, Public Sector, at hatcher.caterina@epa.gov.

APPENDIX A

	CASH	BONDS	TAX-EXEMPT LEASE	PERFORMANCE CONTRACTS
Interest Rates	N/A	Lowest tax-exempt rate	Low tax-exempt rate	Can be taxable or tax-exempt
Financing Term	N/A	May be 20 years or more	Up to 10 years is common and up to 12 or 15 years is possible for large projects	Typically up to 10 years but may be as long as 15 years
Other Costs	N/A	Underwriting legal opinion, insurance, etc.	None	May have to pay engineering costs if contract not executed
Approval Process	Internal	May require taxpayers' approval or public referendum. Bond counsel opinion letter required.	Internal approvals needed; simple attorney letter required	RFP usually required; internal approvals needed
Approval Time	Current budget period	May be lengthy; process may take years	Fast; generally within a week of receiving all requested documentation	Fast; similar to the Tax-Exempt Lease
Funding Flexibility	N/A	Very difficult to go above the dollar ceiling	Can set up a Master Lease, which allows you to draw down funds as needed	Relatively flexible; an underlying Municipal Lease is often used
Budget Used	Either	Capital	Operating	Operating or Capital
Largest Benefit	Direct access *if* included in budget	Low interest rate because it is backed by the full faith and credit (taxing powers) of the public entity	Allows you to buy capital equipment using operating dollars	Provides performance guarantees which help approval process
Largest Hurdle	Never seems to be enough money available for projects	Very time consuming	Identifying the project to be financed	Identifying the project to be financed and selecting the ESCO

APPENDIX B

How long will it take for the lost energy savings to consume the total savings realized from the lower interest rate financing? The calculation is straightforward and can be done using any financial calculator or Excel/Lotus spread sheet. The variables in the formula are:

PV= present value
n= number of payments
pmt = monthly payment
FV = future value
i = interest

If you use a financial calculator, by entering four of the five values, the calculator will automatically calculate the fifth value (or unknown one). Using a financial calculator, start by entering the monthly payment of the readily available (4%) financing. We know the term (n) is 7 years, or 84 months, the Future Value (FV) is zero. Use the interest rate of the lower, "better deal" as the discount rate (3.5%) in order to calculate the present value (PV). This calculation provides the Net Present Value of the interest rate differential, which in this case is $8,108 more than the original project cost. Based on the monthly energy efficiency savings of $8,333, the break-even point is less than 1 month ($8,108 divided by $8,333).

APPENDIX C

Putting Together a Proposal

In developing a proposal for an energy efficiency project to present to your agency's financial decisionmakers, the following steps are recommended:

1. Define the decision process and decisionmakers.
   - Whose approval is needed for a decision?
   - What are the decisionmaker's sensitivities or "hot buttons?"
   - How does the project respond to organizational priorities?
   - Who are the potential "champions" of this project?

2. Quantify why this is a good project to implement.
   - How much will energy costs be reduced?
   - What are the other associated cost impacts, such as reduced labor costs, O&M costs, and life-cycle costs?
   - What are the likely employee impacts (e.g., on productivity or morale)?
   - Does the project meet/exceed established profitability criteria (such as payback period)?
   - Does it create positive cash flow? How much? How might any extra saved energy dollars be spent to support other pressing projects or programs?
   - Does this help address indoor air quality (IAQ) problems or reduce the deferred maintenance budget?
   - What are the associated environmental impacts and public relations opportunities?

3. Show how the project can be funded.
   - What subsidies/credits are available to reduce net costs (such as from your state energy office, utility, or public benefits program, if deregulated)?
   - Can a performance contract and tax-exempt lease-purchase agreement be used if other funds are not available? What would be the terms and conditions of such an arrangement?

4. Identify the costs of delay.
   - What would be the cost of waiting for internal funds to become available?
   - What would be the cost of waiting for lower interest-rate financing to become available?

City of Amherst, NY

Amherst, NY, took a holistic approach to energy efficiency by issuing an RFP for energy services companies (ESCOs) to bid on overall energy efficiency improvements under a town-wide energy conservation program. Amherst, with a population of 117,000, has an electric budget of $2.7 million and a total operating budget of $100 million. The wastewater plant's electric budget was $1.5 million, or 55.6 percent of the entire town's electric bill.

New York State Energy Law - Article 9 allows for the bundling of projects to obtain a weighed average simple payback, and the town selected the ESCO that maximized the amount of new equipment that could be purchased from the energy savings. The result was a $5.2 million project that included the city's ice skating rinks, police station, three community and recreational centers, four libraries, and a museum in addition to the waste water treatment facilities, plus other city properties that, on their own, would be too small to attract the attention of any major ESCO. This was done as a Performance Contact (Guaranteed Savings Agreement). The ESCO guaranteed $5 million of savings on these projects, which include end-of-life replacement equipment as well as energy efficiency equipment. In the first year, the actual savings exceeded projected savings by 16 percent. Amherst chose to bid the technology separately from the financing.