4. Financing

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4.1 Overview

Chapter 3 described how to evaluate projects to determine which are sufficiently profitable to move forward. This chapter looks at the various ways to pay for those projects. Energy-efficiency projects reduce or eliminate expenses that would otherwise be incurred, typically by using proven technologies and time-tested methods. This often makes them relatively low-risk investments that are easier to finance than other projects that carry greater risk.

Today there are many opportunities for financing efficiency projects, and new opportunities are being created regularly. In addition to traditional sources of funding—financial institutions and capital markets—many utilities, governments, and nonprofit organizations offer financial support through grants, rebates, and loans. Well-designed efficiency projects are almost always fundable. With some dedicated research, a diligent organization may find special deals that save a significant amount of money.

This chapter gives an overview of financing methods and suggests criteria for selecting the best method for a given organization and project. Financing categories include purchasing, leasing, performance contracting, and unconventional opportunities, and each affords choices appropriate for private-sector projects, public-sector projects, or both (**Table 4.1**). Although the right financing option depends on many factors—such as debt capacity, in-house expertise, and risk tolerance—there are viable options for virtually any type of organization to implement a well-designed project.

Table 4.1: Financing options

There are a number of financing options for a building upgrade, whether the project is pursued by a public or private organization.

	Public	Private
Purchasing		
Cash	X	X
Loans		X
Bonds	X	X[a]
Leasing		
Operating lease	X	X
Municipal lease	X	
Capital lease		X
Performance contracting		
Guaranteed savings	X	X
Shared savings	X	X
Paid-from savings	X	X
Other		
Utility incentives	X	X
State incentives	X	X
Foundations and nonprofits	X	X

Note: a. In rare situations.

Courtesy: E SOURCE; adapted from EPA

As a first step, consider spending some time with the ENERGY STAR Cash Flow Opportunity Calculator available at www.energystar.gov/index.cfm?c=business.bus_financing. This financial spreadsheet helps organizations answer three critical questions about energy-efficiency investments:

- How much new energy-efficiency equipment can be purchased from the anticipated savings?
- Should this equipment purchase be financed now, or is it better to wait and use cash from a future budget?
- Is money being lost by waiting for a lower interest rate?

Understanding these basic considerations will help provide context when choosing a financing strategy.

4.2 Purchasing Equipment and Services

One way to finance an efficiency project is to buy the equipment and services. Organizations can use cash, a loan from a financial institution, or the proceeds of a bond issuance to make the purchases. In this scenario the organization receives title to any purchased equipment and will add fixed assets and debt to its balance sheet (cash purchases will not add debt, but will reduce cash). Equipment depreciation and any other costs capitalized into the project are tax deductible, as is interest expense (if borrowing to purchase). There may also be other incentives that accrue to the owner, such as tax credits and rebates from utilities.

Cash

A cash purchase is the simplest method for financing efficiency projects. Cash makes sense for organizations with cash reserves and a strong balance sheet. The disadvantages are reduced liquidity and a potential for lost investment opportunities that require cash.

Generally cash is most appropriate for relatively inexpensive, simple efficiency measures that are likely to pay for themselves quickly. Large and complex projects are best funded with debt or off-balance-sheet financing, as discussed below.

Loans

Banks often make loans for equipment purchases. This can be an ideal way for an organization to avoid expending cash on the "hard costs" of the project. However, it is more difficult to borrow money to fund the "soft costs"—such as consultants or the time people spend on the project—because there are no tangible assets to secure that portion of the loan. But with strong credit it may be possible to find lenders who will cover some or all of a project's soft costs.

Equipment loans normally require a down payment of 20 to 25 percent and are secured by a lien on the items purchased. Lenders will also look at the organization's financial strength—credit history, cash flow, and current debt—to determine if additional security is required, such as liens on other assets or a personal guarantee. A borrower's ability to negotiate favorable terms (down payment, soft costs, interest rate, payment structure) depends largely on the lender's perception of the risk.

A credit-worthy organization funding a solid efficiency project should be able to negotiate a loan in which the payments are less than the cash savings from the project. This allows the organization to bear all the risk of the project as well as receive all the benefits.

Bonds

Bonds are debt instruments sold by public- and private-sector organizations to borrow money from capital markets. They are complex agreements that often require attorneys, accountants, and investment bankers—and therefore have high transaction costs. Issuing municipal bonds requires approval by legislative bodies and voter referenda, so these are only issued to raise large amounts of money, generally in the millions of dollars.

Although it is rare for private-sector organizations to finance efficiency projects with bonds, it is common in the public sector. Some state energy programs raise money with bonds to create pools of money for funding smaller projects sponsored by local governments and school districts. Public-sector organizations should check with their state government to see if their projects are eligible for such a program.

4.3 Leasing

An alternative to purchasing is leasing. A lease is essentially a loan in which the lessor (the lender) retains legal title to the property being leased. A lease in which the clear intent is to return the equipment to the lessor at the end of the lease term is called an *operating lease*. Some leases are structured so that the lessee receives most or all of the economic value of the equipment—such a lease is essentially a purchase and is called a *capital lease*. The financial accounting and tax rules for operating and capital leases differ significantly and can play an important role in the financing decision.

Compared to most other forms of financing, leases are quick and easy to set up and administer. Equipment manufacturers or their affiliates will often set up the lease and arrange for equipment purchase and delivery. It is often possible to obtain a line of credit under a master lease to cover the entire project; each equipment purchase for the project would create a new schedule under the master lease, with interest starting to accrue at the time of purchase.

Operating Leases

Under an operating lease, the lessor owns the equipment and rents it to the lessee for a fixed monthly fee. At the end of the lease term the lessee may be able to purchase the equipment (usually for fair market value), extend the lease, negotiate a new lease, or return the equipment.

Operating leases are simple, funded out of operating budgets, and may be ideal for shorter-term projects or projects where owning the equipment is not desirable. Payments are usually lower than for capital leases and are 100 percent tax deductible (with a capital lease only the interest portion of the payment is deductible).

Capital Leases

Capital leases are essentially installment purchases of equipment, although legal title to the equipment remains with the lessor during the lease term. Title will often pass automatically to the lessee at the end of the lease term, or for a small charge (often $1). Little or no initial capital outlay is required. Because the economics of a capital lease are so similar to those of a purchase, both financial accounting and tax rules treat these transactions as purchases. Therefore, leased assets are depreciated, and this depreciation is a tax deduction along with the interest portion of the lease payments. Fixed assets and debt are added to the balance sheet.

The Financial Accounting Standards Board, the designated private-sector organization in the U.S. that establishes financial accounting and reporting standards, created rules for lease

classification in its Statement No. 13. A lease meeting any one of the following criteria must be treated as a capital lease:

- Ownership of the property is transferred at the end of the lease term.
- The lease includes a bargain purchase option (usually $1).
- The lease term covers 75 percent or more of the economic life of the property.
- The present value of the future lease payments equals or exceeds 90 percent of the fair market value of the property at the beginning of the lease.

Capital leases can offer advantages over bank loans. Because leasing companies are not subject to the regulations that govern banks, they have much more flexibility in setting their terms. Capital leases typically require little or no down payment, have significantly less paperwork, and are approved faster. Capital leases may also finance soft costs. Credit-worthy organizations may obtain capital leases for as much as 140 percent of the value of the equipment purchased (hard costs). In such a case, a project requiring $500,000 in equipment may also fund another $200,000 of installation and other soft costs.

Municipal Leases

A tax-exempt municipal lease purchase agreement is simply a conditional sales or installment sales agreement. It is the market alternative to a cash purchase or tax-exempt municipal bond issue. The interest portion of the lease payment (income to the lessor) is exempt from federal taxation, allowing rates to be set lower than for bonds that generate taxable interest income and therefore providing the lessee (the municipality) with significant cost savings.

A distinct advantage of municipal leases is that the lessee's payment obligation usually terminates if the lessee fails to appropriate funds to make lease payments. This allows the lease to be kept off the balance sheet. Of course, because these assets are saving money it would not make sense for the municipality to fail to appropriate these funds, so the risk to the lessor is minimal.

During the term of a municipal lease, the municipality holds title to the leased equipment while the lessor retains a security interest. With each payment the municipality establishes an equity interest in the equipment. At the end of the original lease term, the security interest is removed and the municipality has clear title to the equipment.

Municipal leases offer a number of advantages that lenders often highlight:

- *Fast, simple approval process.* Compared to issuing a bond referendum, a municipal lease purchase is fast and flexible—the time required to close financing is typically weeks instead of months.
- *Reduced transaction costs.* Most costs associated with bond financing are eliminated. With a municipal lease, the municipality borrows only the cost of the assets. With bond financing, the municipality borrows both the cost of the assets and the fees associated with issuing the bonds.
- *Lower interest rates.* The interest income on a municipal lease is tax exempt to the lessor. The municipality benefits when the lessor passes these savings to the municipality in the form of a lower interest rate.
- *Full financing.* All of the project costs can be financed with a municipal lease. No down payments are required and vendors are paid promptly upon funding the lease. Funding

into an escrow account for projects requiring progress payments ensures that the municipality can take advantage of the deepest discounts afforded by the vendor.

- *Practical terms.* The lease term matches the useful life of the asset.
- *No large capital outlay.* Current taxpayers pay for project costs as they are incurred. This process also helps local governments and school districts manage their capital reserve fund balances.
- *Ultimate ownership.* Each lease payment builds equity in the future unencumbered ownership of the asset. At the end of the original lease term there are no residual values, balloon payments, or purchase options to consider. Municipal leases do not involve return provisions, run-on rent, stipulated loss values, and asset management, thus avoiding hidden liability issues.

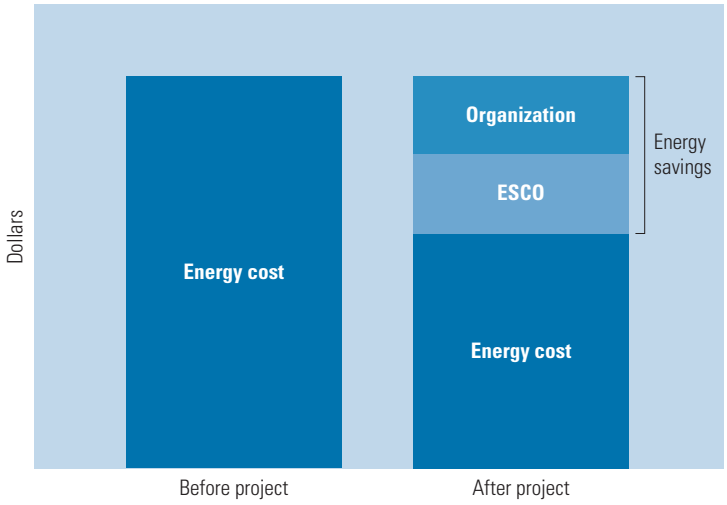
4.4 Performance Contracting

A performance contract is an agreement with a private energy service company (ESCO) to manage a group of efficiency projects from beginning to end. The savings that the projects generate are used to cover the entire cost of the projects, and any surplus savings are allocated between the contracting organization and the ESCO as stipulated in the contract. **Figure 4.1** illustrates this distribution of dollar savings. Performance contracts are especially well suited for financing large and complex projects.

An ESCO is a business that develops, installs, and finances projects designed to improve the energy efficiency of buildings. The ESCO becomes a business partner for the life of the project, acting as the general contractor responsible for all aspects of the project and assuming the associated technical and performance risks.

Figure 4.1: Performance contract economics

In a performance contract, the dollar savings generated by the project is allocated between the organization and the contractor.



Source: EPA

The ESCO typically conducts an energy audit, designs the project, obtains bids from subcontractors, manages the construction, guarantees energy savings, obtains financing, and may even operate and maintain the energy-saving equipment. The ESCO bills the contracting organization for a share of the energy-cost savings such that the savings pay for the project and all of the ESCO's services.

There must be a large savings potential before an ESCO and financier will make a commitment to an energy-efficiency project, so performance contracts are generally arranged for facilities with annual energy costs above $150,000. ESCOs often show little interest in projects costing less than $1 million, although some ESCOs welcome smaller projects depending on the specifics.

There are substantial advantages to performance contracting. Because the ESCO takes responsibility for funding, there are no up-front costs and no debt is added to the balance sheet. ESCOs have great depth of expertise and experience that enables them to design and implement high-quality projects relatively quickly and guarantee savings from the projects. This minimizes the burden on the contracting organization.

The main disadvantage of performance contracting is that a significant portion of the dollar savings generated by the efficiency project goes to the ESCO. But given the benefits, this may be a reasonable cost.

Performance contracts can be complex and take a long time to negotiate. These 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.

How the cost savings get distributed is an important part of negotiating a performance contract. The savings always go first to servicing the debt incurred in financing the project. Additional savings then get distributed according to contract stipulations. Three common distribution methods in performance contracting include:

- *Guaranteed savings*. The contracting organization receives a guaranteed amount and the ESCO gets the rest.
- *Shared savings*. The contracting organization and the ESCO split the savings according to a percentage, such as 60/40.
- *Paid-from savings*. The ESCO receives a guaranteed amount and the contracting organization gets the rest.

In shared-savings contracts, it is critical to determine the value of the energy saved, and this can be a significant challenge. This issue—called measurement and verification (M&V)—is the subject of much attention in the energy-efficiency world.

The M&V associated with some project components can be simple, such as determining the savings from installing energy-efficient light bulbs. But other calculations can be very complex: Did the natural gas bill go down because of the new insulation, or because of the warm winter? Shared-savings performance contracts include a detailed description of M&V calculation

methods and it is crucial that contracting organizations understand and agree with these methods. M&V determines the amount of money paid to the ESCO over the life of the project, and the amount of savings realized by the contracting organization.

When planning to execute a performance contract, consider implementing simple upgrades, behavioral changes, and operational improvements to save energy prior to setting the baseline energy demand that will be used to measure dollar savings under a performance contract. This way all the savings from these easier changes will accrue to the contracting organization rather than being shared with the ESCO.

Find more information on performance contracting and ESCOs at:

- Federal Energy Management Program, www1.eere.energy.gov/femp
- Energy Services Coalition, www.energyservicescoalition.org
- National Association of Energy Service Companies, www.naesco.org

4.5 Unconventional Opportunities

When searching for project capital, begin by bargain hunting for special programs that support energy performance. Every organization planning an energy performance upgrade should investigate utility incentives, state assistance, and other funding opportunities. A good place to start is the Database of State Incentives for Renewables & Efficiency, at www.dsireusa.org.

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

State assistance. Many states offer financial assistance to local governments, nonprofit organizations, small businesses, and other targeted organizations for energy-efficiency upgrades. Contact the state agency that manages energy programs to see what is available and to determine who is eligible.

Foundations and nonprofit organizations. Many foundations and nonprofit organizations sponsor programs that fund energy-efficiency projects. Examples include the Northeast Energy Efficiency Partnerships and the Illinois Clean Energy Community Foundation.

4.6 Summary

Whether an efficiency project involves small improvements or a complete system upgrade, there is a suitable financing option available. A simple cash purchase yields immediate benefits to the customer and is a straightforward transaction well suited for small or low-risk projects. Performance contracting, the most complex type of arrangement, offers the customer the benefit of turnkey implementation and risk protection. It is also the most costly financing option because the ESCO does all the work and accepts all the risk. However, even this more expensive alternative yields a positive cash flow for the customer.

Table 4.2 lays out ten evaluation factors across the seven financing tools discussed in this chapter. These factors must be balanced against the characteristics of the organization and the specifics of the project to find the best financing method. The financing decision will hinge

on the organization's financial and operational flexibility, its tolerance for risk, and any savings requirements. Well-designed efficiency projects will almost always qualify for one or more of these financing tools and generate a positive return.

Table 4.2: Comparing financing options

The importance of these factors will vary depending upon the unique circumstances of the organization and the efficiency projects being considered.

	Purchase			Lease			
Evaluation factor	Cash	Loan	Bond	Operating	Capital	Municipal	Performance contract
Down payment (%)	100	20 to 25	0	0	0	0	0
Transaction cost[a]	—	Medium	High	—	Low	Low	Medium
Balance sheet	Asset	Asset and liability	Asset and liability	—	Asset and liability	—	—
Tax deductions	Depreciation	Depreciation and interest	Depreciation	Lease payments	Depreciation	—	—
Interest rate	—	Medium	Low	—	High	Low	—
Financing term	—	3 years	10 to 20 years	—	3 to 5 years	Project life	Project life
Approval process	Internal	Bank	Referendum	Internal	Lessor	Lessor	Internal
Approval time	Short	Medium	Very long	Short	Short	Short	Long
Flexibility	Usually small projects	Limited to equipment value	Large projects only	Usually small projects	Equipment cost + 20 to 40 percent	100 percent of project cost	100 percent of project cost
Capital or operating budget	Either	Capital	Capital	Operating	Capital	Operating	Operating

Notes: a. Transaction costs include professional services and staff time devoted to the transaction.

Courtesy: E SOURCE; adapted from EPA

Bibliography

M&T Bank Corp., "Tax Exempt Municipal Lease Financing" (2006), www.mandtbank.com/government.