

Energy Efficiency is a Good Business Decision, Especially Now!

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Energy efficiency is always a good business decision, especially now in a down economy. Add to it the value of environmental and human health benefits of green and sustainable buildings, and the case for installing cost effective energy efficient equipment is even stronger.

In this article, we will focus on the “why?” and the “how?”– why implementing energy efficiency projects contributes to the organization’s overall financial health and – how ENERGY STAR tools and resources can help sell cost effective energy efficiency improvements to decisionmakers.

Energy Efficiency Projects are Different

In general, organizations purchase capital equipment for two reasons: (a) to make money (or expand), or (b) to save money. When the economy is strong, most organizations focus on increasing sales and growing their market. During economic downturns, cost reductions and capital conservation become the priorities.

Many organizations view energy as an escalating, uncontrollable cost when, in reality, energy consumption can be controlled by acquiring new, more efficient technology and through behavioral modifications. Traditional financial metrics like Return on Investment (ROI), Internal Rate of Return (IRR), and simple payback are effective when prioritizing most capital budget investments. However, when energy efficiency equipment needs to be purchased, organizations tend to treat the project the same as any other “capital project.” This undervalues the added benefit inherent in efficiency projects, which can be financed and paid for with saved operating budget dollars. If the organization does not implement the project, they will continue to pay the utility for wasted and underutilized energy, which according to ENERGY STAR, may be 30% or more of most utility bills.

Using the appropriate financial metric when evaluating energy efficiency projects can make the difference between installing now or postponing the project. Competition for capital dollars is always fierce, especially in a down economy when capital projects are being cut. When traditional financial metrics are used to evaluate an energy efficiency project against other capital projects, the utility budget savings (avoided costs) may not be given its due consideration.

Perhaps the most frustrating reason for delaying energy efficiency projects is hearing that “it’s just not in this year’s budget.” The reality is just the opposite! Management may be looking towards the capital budget when the payment is already built into the operating budget (in other

words, buried in their utility payment!). The question becomes: how can you use future operating budget savings to pay for energy efficiency improvements today? (The answer is: by financing the project.) And, how do you convince the financial folks who may be using traditional financial evaluation metrics like “Return on Investment” or “Internal Rate of Return” and conclude that other projects are “a better deal”? (The answer is: in a down economy, cash flow is king!)

There is no question that Return on Investment (ROI) and Internal Rate of Return (IRR) are excellent evaluation tools to use when prioritizing capital budget projects. Clearly, the dollars should be invested in the projects that offer the “biggest bang for the buck.” However, these tools do NOT properly reflect the *avoided costs* that occur when installing energy efficiency projects. In other words, unless the operating dollars saved by the installation of the new systems are properly reflected in the calculation, the energy efficiency project may be inadvertently penalized by its greatest benefit...improving the organization’s cash flow!

ROI and IRR both imply using cash on hand and investing it in a project. Energy efficiency projects can be financed and structured to insure that the *monthly payment is less than the energy savings realized*. As such, energy efficiency projects do not have to compete with other capital projects for funding.

Case Study Example

Let’s do the math: If installing a lighting retrofit will reduce the utility bill by \$5,000 a month, and the cost of a 48 month financing is \$3,500 a month, then installing the lighting will generate \$18,000 a year of positive cash flow (\$1,500 for 12 months)! To really highlight the cash impact of this installation, one could say that, based on current load and cost per kWh, our hypothetical project will generate \$72,000 of available cash savings within the first four years, after which it will generate \$60,000 per year; all with other people’s money and without using your capital budget or exceeding your operating budget!

Energy efficiency projects tend to have long sales cycles, in part because a sense of urgency (the “cost of delay”) has not been effectively communicated. And delayed projects often turn into cancelled projects. This may be further complicated because many organizations do not have established buying processes for energy efficiency projects. They may find it easier to lease an airplane or buy office furniture than to install energy efficiency lighting or an energy management system.

Helpful Tools from ENERGY STAR

Fortunately, ENERGY STAR has created a number of tools and resources that, when properly used, can help sell energy efficiency projects. These tools support the value proposition that energy projects are great investments, and include the Portfolio Manager, Target Finder, the Financial Value Calculator, the Building Upgrade Value Calculator, and the Cash Flow Opportunity Calculator. All of these resources are in the public domain and available at www.energystar.gov and carry the ENERGY STAR brand.

One tool is particularly appropriate in today's economy: the Cash Flow Opportunity Calculator¹ (CFOC). It is an effective tool for energy managers, CFOs, and senior management. This set of spreadsheets helps create a sense of urgency about implementing energy efficiency projects by quantifying the costs of delaying the project implementation. It was developed to help decisionmakers address three critical questions about energy efficiency investments:

1. How much of the new energy efficiency project can be paid for using the anticipated savings?
2. Should the project be financed now, or is it better to wait and use cash from a future budget?
3. Is money being lost by waiting for a lower interest rate?

Using graphs and tables, the CFO Calculator is written so that managers who are not financial specialists can use it to make informed decisions, yet it is sophisticated enough to satisfy financial decisionmakers. This tool works well for projects in both the public and private sectors.

The first step in the evaluation process is to estimate the amount of savings that can be captured from the existing utility budget. The working assumptions are that (a) these savings will be used to cover the financing costs, and, (b) that the savings will recur month in and month out. The savings amount is entered into a "reverse financial calculator," which then asks for an estimated borrowing interest rate, financing term, and the percentage of the savings users prefer to apply to pay back the cost of the energy improvements. The calculator is designed to estimate the amount of project improvements that could be purchased by redirecting the energy net savings to pay for the upgrades. Most organizations are surprised to learn how much new equipment and related energy services are "buried" in their utility bills, all of which could be installed within their existing operating budget without tapping into their limited capital budget. "Related energy services" often include the initial energy audits that many organizations feel they cannot afford, but are necessary to quantify the savings opportunity. When future energy savings are the main source of the project's repayment, the CFO Calculator becomes an effective

¹ Version 1.2 will be available in January 2009.

sensitivity analysis tool that takes into account the impact of lower interest rates, longer financing terms, and utilization of savings when structuring the project's financing. In fact, this tool shows the relative unimportance of the interest rate when financing energy efficiency projects, another counterintuitive reality.

The Cost of Delaying Projects

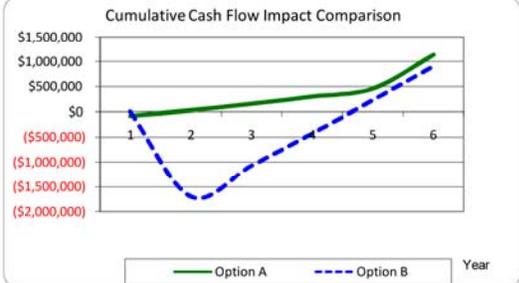
A while back, we made the “see how much money you are leaving on the table” argument to the Chief Financial Officer of a large city in the Northeast on behalf of the local electric utility. The CFO responded that the city was fiscally conservative, and officials believed that waiting until funds were available in a future operating budget (thereby avoiding borrowing and paying interest) was in the best interests of the city. We used the CFO Calculator to map the cash flow consequences of two decision points (financing now or waiting for future budget dollars) to demonstrate to the city's CFO and town council that *financing now* was a better financial decision than waiting for cash. In most instances, the lost energy savings incurred by waiting for one year are greater than the net present value of all the interest payments of most financing options — making “do it now” the better financial decision. This is counterintuitive and surprises most decisionmakers. Today, this city supports the expeditious implementation of energy efficiency projects.



HELP SAMPLE VALUES

COST OF DELAY and CASH FLOW ANALYSIS

Project cost	2,052,900	\$	
Simple payback	3	years	
Interest rate	8	month(s)	
Financing term	5	years	
Year(s) postponed	1	years	
Project cost increase due to postponement	5.00	%	
Estimated energy cost increases after Year 2	10.00	%	
Annual increase in energy costs after year 2	2.50	%	
Estimated energy savings in first year (Year 1)	75.00	%	



THESE CASH FLOW CALCULATIONS ARE ON A PRETAX BASIS.

Net Present Value of Option A	\$754,748
Net Present Value of Option B	\$384,826

For purposes of this calculation, all cash flows are being discounted at the interest rate indicated in cell G7 - financing paid monthly in arrears.

Year	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
	Savings	Project Cost including financing	Annual Cash Flow	Cumulative Cash Flow	Savings	Project Cost	Annual Cash Flow	Cumulative Cash Flow
1	\$416,250	(\$499,505)	(\$83,255)	(\$83,255)	\$0	\$0	\$0	\$0
2	\$610,500	(\$499,505)	\$110,995	\$27,740	\$457,875	(\$2,155,545)	(\$1,697,670)	(\$1,697,670)
3	\$625,763	(\$499,505)	\$126,258	\$153,998	\$625,763	\$0	\$625,763	(\$1,071,908)
4	\$641,407	(\$499,505)	\$141,902	\$295,899	\$641,407	\$0	\$641,407	(\$430,501)
5	\$657,442	(\$499,505)	\$157,937	\$453,836	\$657,442	\$0	\$657,442	\$226,941
6	\$673,878	\$0	\$673,878	\$1,127,714	\$673,878	\$0	\$673,878	\$900,819

Important Notice

This is a sample screen capture of the "Cash Flow" tab from the CFO Calculator Excel Spread Sheet supporting the "do it now" argument.

Another common argument for delay is waiting for a lower interest rate offering rather than accepting your financing proposal, which is available immediately. This situation may arise when organizations are waiting for funds from a future bond issue or for a low-cost specialty fund to replenish itself. The CFOC facilitates the comparison of two different interest rate offerings, and it computes how long the organization can wait for the lower interest rate before the lower rate costs more dollars. It does this by including the forfeited energy savings into the decision-making process; truly, another "cost of delay."

CONCLUSION

The benefits of doing the project sooner rather than later are numerous, starting with improved cash flow, better facilities, using the existing capital budget for other projects, helping make the facilities "green," and more. In the end, a decision *not* to install more efficiency energy equipment and implement related energy-saving measures is a decision to continue paying higher

utility bills. Using the captured energy savings to pay for financing the improvements is recommended, essentially making them “self-liquidating” obligations.

Thousands of companies that participate in ENERGY STAR know from experience that today’s energy efficiency technologies and practices have saved them operating budget dollars. And implementing energy efficiency projects will have a positive impact on an organization’s overall financial performance as well as the environment. Because energy efficiency projects can literally pay for themselves, the bottom line is that financing energy improvements is simply a good business decision.