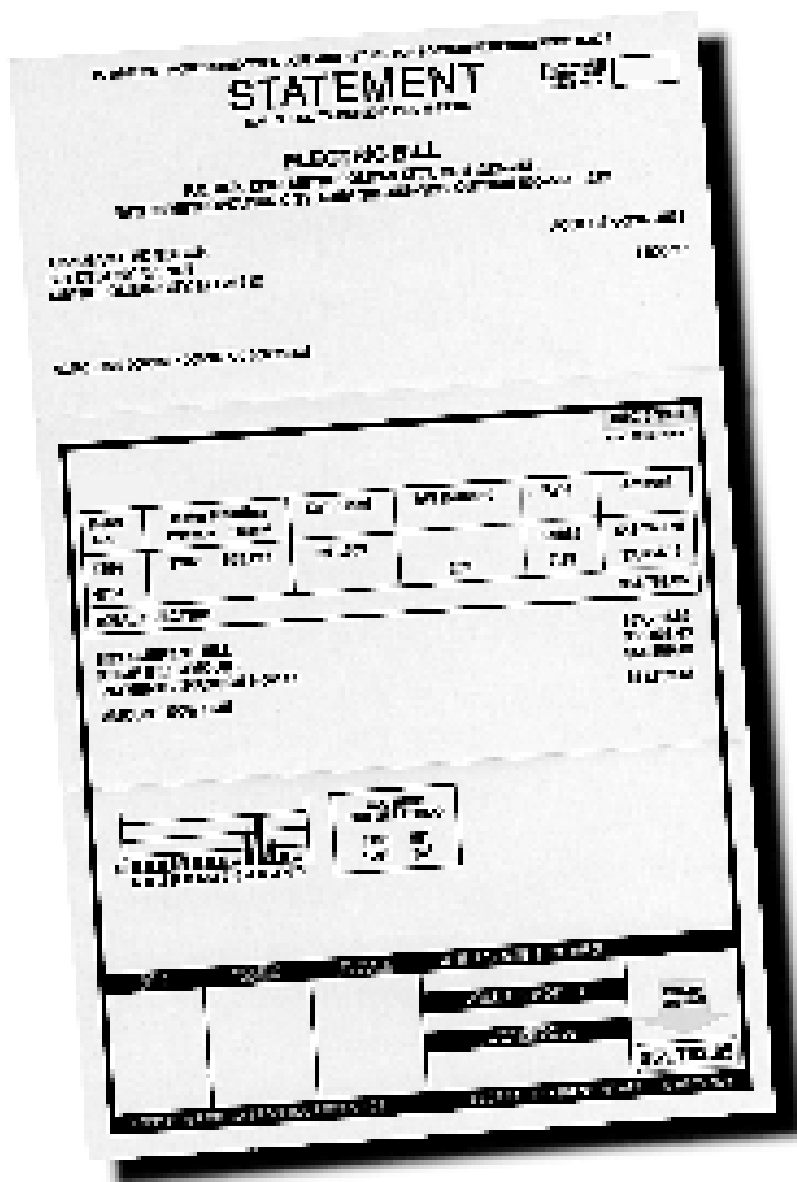


Introducing Your Company's Newest *Profit Center*

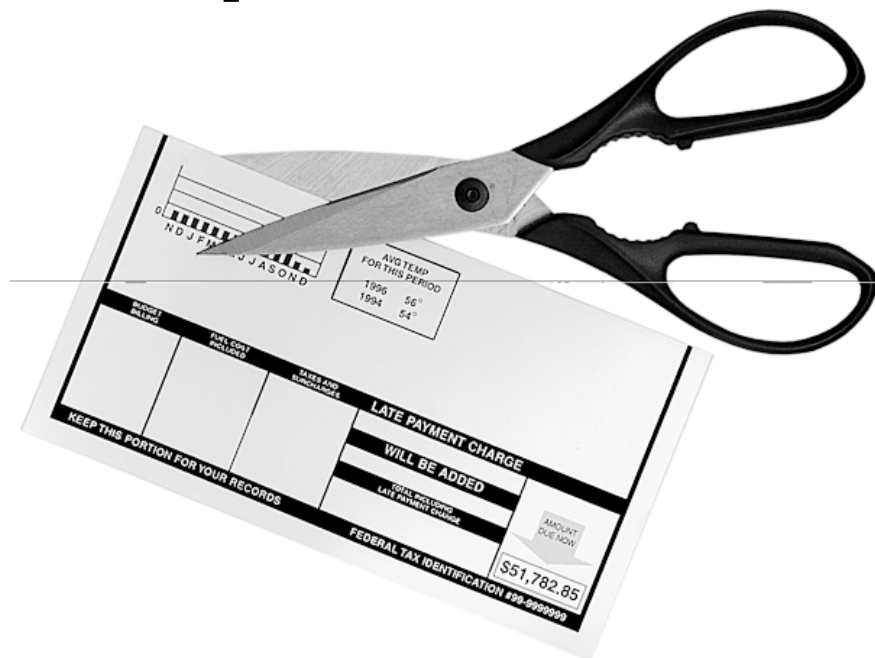


Many business owners and leaders look at their energy bill as an unavoidable overhead cost that eats into their profits. Most of them know that one way to reduce energy costs is to install energy-efficient equipment and building materials. The problem is, they can only fund capital improvement projects that pay for themselves in 3 years or less. So they assume they've done all they can and they're stuck paying the energy bill, whatever it is, month after month.

If this sounds like your company, then consider looking at your energy bill from a new, more exciting, perspective. . . as a profit center. Whether your business is manufacturing heavy equipment or providing a service, energy is a raw material, a key ingredient in your finished product. Energy runs your equipment, provides comfort and convenience to your workers and customers, and helps fuel your entire production process. Viewed in this light, energy use can be seen as an investment to be optimized, rather than an expense to be minimized.

Unlike *energy conservation*, where overall energy use is reduced without regard to productivity, or *energy efficiency*, where energy use is reduced while maintaining current productivity levels, *energy optimization* transforms an energy bill reduction into a profit center that employs an optimal mix of energy, equipment, and operational procedures. Energy optimization projects can not only generate impressive, long-term, low-risk returns but also can increase productivity and sales. That's not bad performance. . . for an energy bill. ☆

...Energy Optimization



Increasing Profits Through Energy Optimization

Benefit 1

Improved Profits

One fundamental way that energy optimization projects increase profitability is by passing energy cost reductions to the bottom line. You can determine how much your company's profits will increase when you reduce your energy costs if you know the relationship between your company's *Profit Margin Percentage* and *Energy Cost Percentage*.

Profit Margin Percentage is the difference between Total Revenue and Total Cost divided by Total Revenue:

$$\text{Profit Margin Percentage} = \frac{\text{Total Revenue} - \text{Total Cost}}{\text{Total Revenue}}$$

Energy Cost Percentage is the portion of Total Cost comprised by Total Energy Cost (for the building):

$$\text{Energy Cost Percentage} = \frac{\text{Total Energy Cost}}{\text{Total Cost}}$$

If *Profit Margin Percentage* = *Energy Cost Percentage*, **Profit Margin Percentage increases 1 percent for every 1 percent reduction in energy costs!** ☆

And Your Company's Energy Cost Percentage Is...

1%	2%	3%	4%	5%	6%
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Your Company's Profit Margin Percentage Will Increase By The Percentage Below

If Your Company's Profit Margin Percentage is...	1%	35%	69%	104%	139%	173%	208%
	2%	17%	34%	51%	69%	86%	103%
	5%	7%	13%	20%	27%	33%	40%
	10%	3%	6%	9%	13%	16%	19%
	20%	1%	3%	4%	6%	7%	8%
	25%	1%	2%	3%	4%	5%	6%

Profit increase calculations based on EPA's ENERGY STAR Buildings Program energy cost reduction goal of 35%.

Benefit 2

Long-Term Returns

Most energy-efficient equipment and building materials last 7 to 20 years. That means the cost reductions they generate land on the bottom line year after year—usually long after the project has paid for itself. This is a very important point to remember when you are considering energy optimization investments.

Energy optimization projects are often rejected for failing to meet a company's criteria for simple payback. But simple payback analysis ends at the point when a project pays for itself. It ignores the significant long-term returns that many of these projects continue to generate well beyond the payback period. Simple payback also fails to consider the additional returns generated by reinvesting project-generated savings. The longer the life of the project, the more these returns are compounded. ☆

Benefit 3

Low-Risk Returns






Energy optimization projects not only yield impressive returns but are low risk as well. You can use reliable techniques to calculate the cost reductions generated by replacing most types of equipment or building materials with higher efficiency versions. Metering equipment can help you measure the actual energy use of existing and replacement equipment to make the energy saving estimate even more reliable.

Although there is always a small risk that projected cost reductions will not match actual reductions, those risks can be assumed (either partially or completely) by energy service companies (ESCOs) with energy savings insurance policies or performance-based contracts. ☆

Project Description:

Upgraded 5,200 T-12 lamps to 5,200 T-8s, and 195 incandescent lamps to 195 twin tubes.

Project Summary:

	Total Facility Square Footage: 360,000
	Electricity Reduction: 1,784,640 kWh/yr
	Electricity Savings: 65.9% kWh
	Energy Cost Savings: \$127,000/yr
	Pollution Prevented:
	CO ₂ : 3,034,000 lbs/yr
	SO ₂ : 3,926,000 g/yr
	NO _x : 4,462,000 g/yr

Benefit 4

Increased Productivity

Although the profits from accrued energy cost reductions can be impressive, they cannot compare to the profits that increased productivity can generate. Admittedly, productivity increases attributable to energy optimization projects can be difficult to quantify. Yet dismissing these potential profits simply because they resist measurement can be a costly mistake.

Consider a 10,000-square-foot office space renting for \$20 per square foot including energy costs of \$1.80 per square foot. If 25 workers occupy the office, and each earns an average annual salary of \$50,000, the workers cost \$125 per square foot—70 times more than energy. In this example, *a 1-percent increase in worker productivity would pay for this company's entire energy bill for more than 8 months!*

Besides energy cost reductions, energy optimization projects offer you an opportunity to invest in your company's human capital. For example, a high-efficiency lighting retrofit can improve lighting quality, intensity, and color, which can dramatically reduce worker eye-

strain and vision-related errors. This, in turn, can increase your productivity by reducing absenteeism and production costs while increasing product quality. Similar productivity increases have been associated with energy optimization projects involving air conditioning and building materials that also increased worker comfort and improved working conditions.

Energy optimization projects can sometimes increase sales as well. For example, a grocery chain was pleased when they got the energy savings they expected from replacing their open, horizontal freezer cases with upright, high-efficiency models with glass doors. But they were positively delighted when their frozen food sales increased as well. The old open cases let cold air escape into the surrounding area and made some of the merchandise difficult to see. The new freezers kept cold air from escaping. Shoppers no longer hurried through the frozen food section to avoid getting chilly, and they noticed items they hadn't before. The store reaped the unexpected benefit of increased sales of frozen food. ☆

ENERGY STAR
Business Profile






“... efficient lighting... helps people see better which reduces mistakes, increases quality, and boosts productivity.”

*—Ron Strandlund
Program Implementation Director
SUPERVALU Inc.
Minneapolis, MN*

Project Description:

Upgraded entire store with T-12 lamps and T-8 electronic ballasts.

Project Summary:

	Total Upgraded Square Footage:	50,000
	Electricity Reduction:	186,000 kWh/yr
	Electricity Savings:	44% kWh
	Energy Cost Savings:	\$15,256/yr
	Pollution Prevented:	279,000 lbs CO ₂ /yr
	Internal Rate of Return:	42%





“The driving force behind our decision to do the lighting upgrade was the fantastic rate of return... (but) the environmental benefits have done more to promote good will and produce positive reactions than could have ever been imagined. The savings from year one were used to install an energy management system. Further savings are being used to retrofit exit signs with LEDs and install occupancy sensors.”

*—Dale A. Christensen
Facility Manager
Baylor College of Dentistry
Dallas, TX*

Project Description:

Replaced 12,786 T12 fluorescent lamps with energy-efficient T8s with electronic ballasts.

Project Summary:

	Electricity Reduction:	1,954,300 kWh/yr
	Electricity Savings:	43% kWh
	Energy Cost Savings:	\$113,349/yr
	Pollution Prevented:	CO ₂ : 2,555,601 lbs/yr SO ₂ : 3,307,249 g/yr NO _x : 3,758,237 g/yr

The number of investment opportunities promising to increase your company’s profits usually far exceed your available capital. When it comes to selecting the opportunity in which to invest your limited resources, the bottom line is the bottom line. Energy optimization projects offer a combination of impressive, long-term, low-risk returns, and potential productivity gains that can transform your company’s energy bill into your next profit center. How many of those other investments will do that? ☆

...The Bottom Line is the Bottom Line



For More Information:

To learn more about EPA’s ENERGY STAR Buildings Program, call the ENERGY STAR Hotline at 888–STAR–YES.

To order related publications call 888–STAR–YES or fax your request to 202–775–6680.

Visit our Web site at:
<http://www.epa.gov/buildings.html>

Publication:

- Business Analysis for Energy-Efficiency Investments 54009C
- Financing Your Energy-Efficiency Upgrade 54009A
- Increasing Productivity Through Energy-Efficient Design 58215
- Questions and Answers: ENERGY STAR Buildings 28210
- ENERGY STAR Buildings Case Study Pack 19210

Reference Number: