

Running the Numbers

What it Takes to Go from "Average" to ENERGY STAR®

Suppose you are a facility manager of a 400,000 square foot acute care medical facility. One day the CFO walks into your office and asks you to put together a report that details the financial value of upgrading the hospital's energy performance from its current industry average rating to the top 25% in the country. He's weighing the financial advantages, he tells you, of earning the Environmental Protection Agency's (EPA) ENERGY STAR label, but he needs to see the numbers first before committing a budget. What's your next step?

To assess the potential value of improved energy performance, you will need to provide standard financial analysis metrics (e.g. Net Present Value, payback period) to your CFO. For non-profit hospitals, the analysis will hinge on the investment's net income, reflecting revenues adjusted for the costs of doing business, depreciation, interest, and other expenses. Publicly held for-profit hospitals will assess value differently; their investment's impact is measured by earnings-per-share and another related metric, market value.

Calculating Financial Value

To help you quantify and communicate the value of improved energy efficiency, EPA's ENERGY STAR program




developed the Financial Value Calculator (FVC). The FVC uses corporate data that you enter to calculate your hospital's potential financial returns. Both non-profit and for-profit hospitals and healthcare systems can use the tool to estimate the corporate value of savings that can

result from increased energy performance. It can be downloaded and used free-of-charge from EPA's website at www.energystar.gov; click on "Business Improvement" and then "Financial Value Calculator".

From the dropdown menu, choose your sector – healthcare not-for-profit, for this example. Then input two data points: total annual utility bill for all buildings on campus and total floor space. (If you work at a publicly held, for-profit facility, you'd enter additional values for total outstanding common shares, earnings per share, and P/E ratio). Next, input values for the analysis term and the discount rate. If you are unsure of these, use the default industry-specific values provided or ask your financial office for organization-wide data. After completing this step, go to the calculator.

Analyze Your Energy Performance Score

If you have benchmarked your acute care hospital using EPA's rating system (www.energystar.gov/benchmark), you can estimate the percent by which you will need to



Calculate the Impact of Improved Energy Performance On Your Company's Financial Value

The information you enter below will be used to calculate the potential financial value for your company.

Company Name	ABC Hospital	Sector	Healthcare (Not For-Profit)
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Corporate Building Portfolio Information		Default Calculator Information	
Total Annual Utility Bill for Buildings *	\$ 1,140,000	Analysis Term (years) *	10
Commercial Building Floor Space (Sq. Ft.) *	400,000	Discount Rate *	11%
Energy Cost Intensity (\$/Sq. Ft.)	\$ 2.85	Depreciation Method	Straight Line
		Depreciation Period (years)	10
		Financing Period (years)	
		Cost of Capital (if financed externally)	
		Tax Rate	
		Capitalization "Cap" Rate	10%

Shareholder Information	
Total Outstanding Common Shares *	
Earnings per Share *	
P/E Ratio *	

Required items are shown in red with an asterisk. Shareholder information is not required for privately-held companies or non-profit organizations.

reduce energy consumption to reach a new target score. As stated in the beginning paragraph, the sample hospital is rated at the industry average (50); the minimum score for an ENERGY STAR labeled hospital is 75.

Click "Analyze Your Energy Performance Score." Enter 50 as the current performance rating; then enter 75 for the desired energy performance rating. After calculating the results, the Delta Score Estimator shows that a 25-point gain in the rating requires a 21% reduction in energy use. Transfer this savings goal on to the next set of calculations by clicking "Analyze Results Using FVC".

Choose Energy Performance Investment Goal

With a 21% energy savings goal established, your next effort will be to determine the percentage of your building portfolio to upgrade and the level of investment that will get you there. Typically, ENERGY STAR Partners are able to achieve this level of improvement by investing \$.80/Sq.Foot using low-cost operations & maintenance strategies as well as capital upgrades. Historical costs or estimates from service and product providers will be your best source for determining the savings-to-investment relationship that is most valid for you.

Review Potential Financial Returns

The FVC uses an income statement format to calculate net income from potential energy savings. Some Inputs and Results are left blank because the metrics are not applicable to non-profit hospitals.

Based on this hospital's financial assumptions and investment levels, achieving the ENERGY STAR label will cost an estimated \$320,000. The energy cost savings,

We found that each dollar saved in energy performance is equivalent to generating new revenues of \$20 for non-profit hospitals.

however, is substantial. Every year, the hospital will save an estimated \$239,400. With a payback period of less than 2 years, savings accumulates to over \$2 million over the projected 10-year lifetime of the equipment.

If these financial metrics aren't compelling enough to present your case, consider communicating the value in terms of new revenues. EPA analyzed how energy performance projects can improve our partner's corporate value. We found that each dollar saved in energy performance is equivalent to generating new revenues of \$20 for non-profit hospitals. So this upgrade project - with an annual utility savings of \$239,400 - is equivalent to generating over \$4.7 million in new revenues per year over the lifetime of the equipment.

Assessing the value of improved energy performance will help you make your hospital an environmental leader. And as these calculations confirm, environmental leadership adds value to your bottom line and corporate reputation.

Corporate Building Portfolio

Select the percentage of your building portfolio to upgrade:

100%


Specify your investment and savings values.

OR, choose a typical investment and savings value.

	Ann. Energy Savings (%)	Investment Levels (\$/Sq. Foot)	Initial Investment (\$)
<input checked="" type="radio"/>	21%	\$ 0.80	\$ 320,000
<input type="radio"/>	30%	\$ 1.60	\$ 640,000
<input type="radio"/>	20%	\$ 0.80	\$ 320,000

ABC Hospital		
Inputs		
Total Utility Bill	\$	1,140,000
Commercial Building Floor Space (Sq. Ft.)		400,000
Total Outstanding Common Shares		-
Earning Per Share	\$	-
P/E Ratio		-
Results		
Initial Investment	\$	320,000
Percentage of Building Portfolio Upgraded		100%
Annual Utility Savings	\$	239,400
Net Income	\$	207,400
Increased Earning Per Share		Need Info
Increased Market Value	\$	-
Internal Rate of Return		75%
Payback Period (in years)		1.3
Net Present Value	\$	981,876

To Learn More

ENERGY STAR is hosting a series of webcasts on capturing and communicating the financial value of energy management for healthcare providers. For schedule information and to register, please visit <http://es.netspoke.com/attendee/default.asp>. Sessions are scheduled for June, July and September. 

Clark Reed is the National Healthcare Manager for ENERGY STAR at the U.S. EPA. Last year, we helped Americans save the energy to power about 15 million homes while reducing greenhouse gas emissions equivalent to those of 15 million automobiles. To join, visit ENERGY STAR's website or contact the author at the U.S. Environmental Protection Agency - MC 6202J, 1200 Pennsylvania Ave NW, Washington, D.C. 20460. Email: reed.clark@epa.gov Phone: 202-343-9146.

Cash Flow Projection

The table below shows the estimated impact of ABC Hospital's investment in energy performance on its cash flow for the next 10 years. Deducting expenses (depreciation and interest payments) and taxes (assumes a tax rate of 0%) from the annual savings yields a net income of \$207,400. The cumulative savings over the 10-year period will be \$2,074,000.

Year	Annual Savings	Expenses Excluding Taxes	Taxes	Annual Savings Adjusted for	Cumulative Savings
1	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 207,400
2	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 414,800
3	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 622,200
4	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 829,600
5	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 1,037,000
6	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 1,244,400
7	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 1,451,800
8	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 1,659,200
9	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 1,866,600
10	\$ 239,400	\$ (32,000)	\$ -	\$ 207,400	\$ 2,074,000