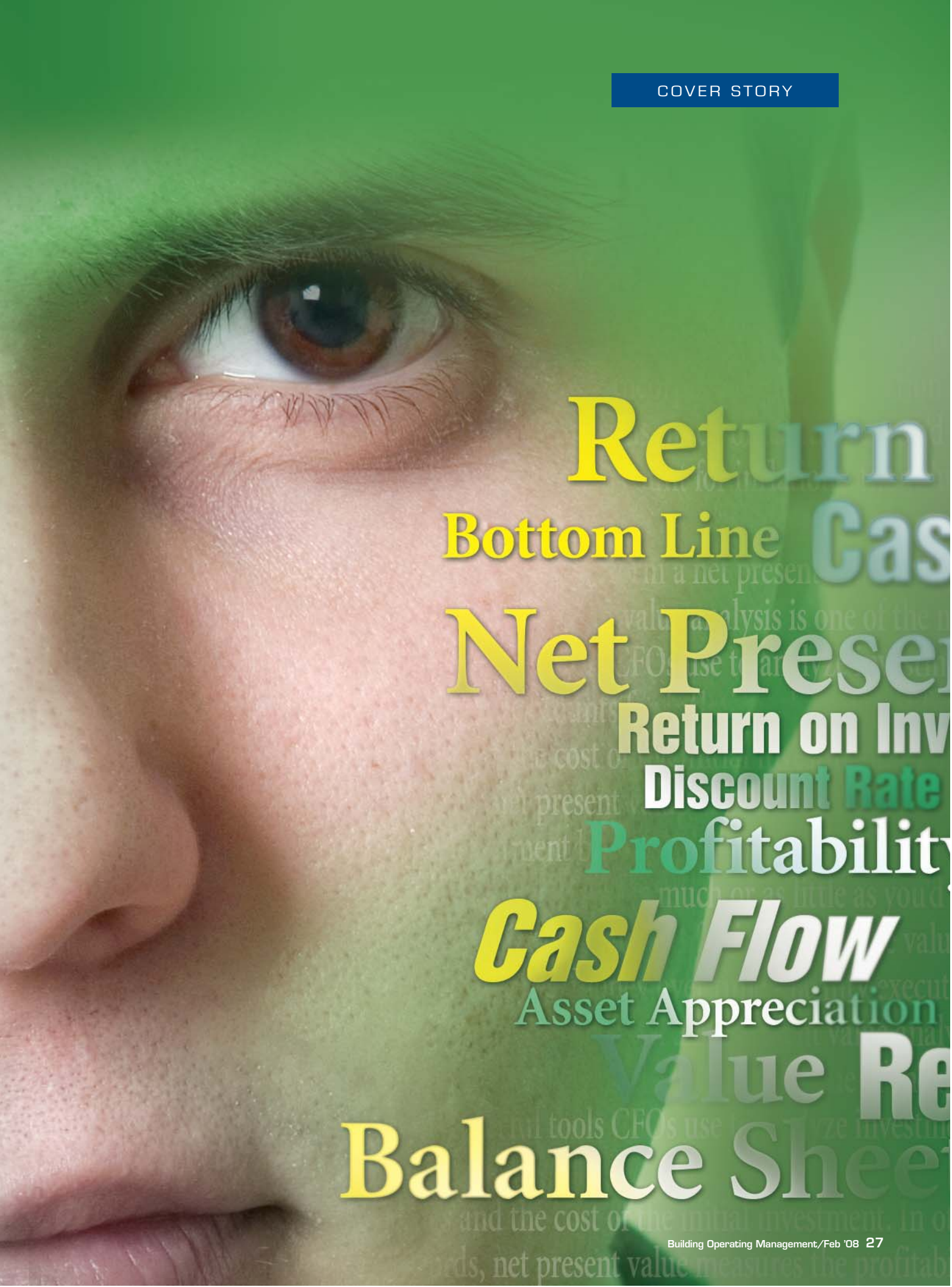

Return
Bottom Line
Net Present
Return on Inv
Discount Rate
Profitabilit
Cash Flow
Asset Appreciation
Balance Shee

Getting through to the CFO

A rigorous financial analysis of energy projects will help win funding

BY RICHARD G. LUBINSKI

Pressure on corporate executives to maximize profits in a relatively stagnant economy is intensifying. While revenue growth is still of the utmost importance to organizations, executives are looking for new ways to contain costs. One operating cost that has risen dramatically is energy, particularly electricity.

Electricity rates in some deregulated markets have gone up as much as 50 percent once rate caps were lifted. The price rise has an immediate impact on operating budgets. If the CFO is uninformed about the ugly realities of electricity prices, the operating budget is in peril.

The cost of electricity, natural gas, diesel, gasoline and other energy sources has been increasing steadily in recent years. Nationally, increases in utility costs have been in the hundreds of billions of dollars. Regionally, increases have varied widely as a result of local market conditions.

A variety of factors are driving the increases. Demand for electricity is outpacing supply. The promise of lower rates because of deregulated markets has faded. Electric utilities are raising prices for generation, transmission and distribution in both regulated and deregulated markets. Finally, most public utility commissions are doing little or nothing to control the price increases.

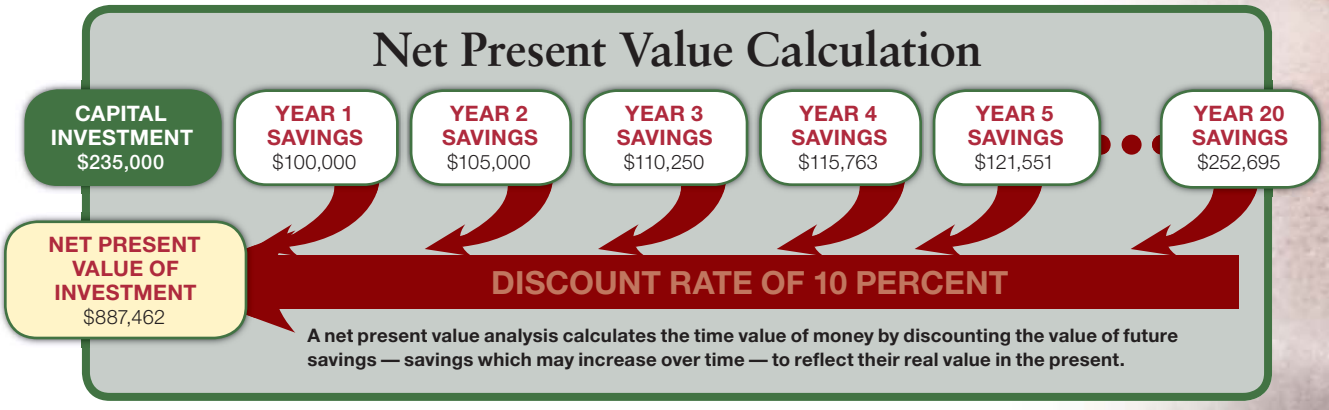
An Opportunity to Act

For facility executives, now is the time to gain influence with the CFO. Understanding how energy prices affect an organization's profitability can allow facility executives to propose cost-reduction solutions that CFOs will consider.

But remember the audience. Any energy improvement project proposal should be communicated in language CFOs understand. Expressing the savings, benefits and financial value of a project can help to get projects approved only if the terms used to express those criteria are understandable.

Avoid expressing savings that a project might deliver solely in terms of kilowatts, kilowatt-hours, BTUs or energy efficiency percentages. Likewise, casting a project's benefits in technical terms, such as "improved lumens" for a lighting project, will likely be met with disdain. And when expressing financial value, facility executives would be wise to present more than just a project's simple payback or a cash flow analysis prepared by a party with a vested interest, such as a manufacturer.

Facility executives should focus on the economic justification of the energy management project. Facility executives should follow the same analysis as any other investment considered by



For a calculator to help determine net present value, visit:
WWW.INVESTOPEDIA.COM/CALCULATOR/NETPRESENTVALUE.ASPX

the organization if they want to earn the CFO's attention and support. That means using capital analysis tools to evaluate all proposed energy management projects.

Talk the Talk

CFOs use many tools to analyze financial performance of investments. Among the most meaningful are return on investment, net present value and asset appreciation evaluations. At minimum, facility executives should have a firm understanding of these three metrics so that they can be included as part of a project's economic justification.

To account for inflation — the value of money over time — facility executives should perform a net present value analysis. The net present value analysis is one of the most powerful tools CFOs use to analyze investments because it accounts for inflation, the value of future savings and the cost of the initial investment. In other words, net present value measures the profitability of an investment by incorporating both inflation and ROI in its result.

Net present value results are easy to understand in that if the result is positive, the investment will improve cash flow. If negative, the investment reduces cash flow. That allows each prospective investment, including the energy improvement project competing for the same capital dollars as other projects within the organization, to be measured based on the returns it will produce.

A key to calculating net present value is applying what's known as a discount rate. The discount rate is a value included in the calculation to account for the interest an organization could earn by placing the money in an investment other than the one being considered. The CFO will compare the value of investing in an energy project vs. putting the money in some other investment with a known rate of return, such as 10 percent. The rate reduces the value of future cash flows, such as savings to be generated from an energy savings project, to reflect the value of having the investment presently.

The discount rate works on the economic principle that having $1 today is worth more than having $1 tomorrow because of the time value of money. For example, if a friend was offering to pay $1,000 one year from now or $950 today, assuming the discount rate is 10 percent, it would be best to take the $950. Applying a discount rate of 10 percent shows that $1,000 a year from now is worth $910 today. Accepting the friend's offer of taking $950 today affords a $40 premium.

Applying the net present value calculation to a $50,000 energy upgrade investment that saves $12,500 per year shows the net present value is roughly $4,400, assuming the project will be in place for six years. That means the cash generated from the $12,500 in savings generated by the project for each of the six years will total $54,400. Compared to the $50,000 initial investment, the upgrade project looks worthy.

An essential fact involving net present value is that savings in the early years of a project are worth more than an equal amount of savings in later years. Keep in mind, too, that the higher an organization's discount rate, the more savings a project will have to generate to be considered worthy of funding on financial terms alone.

Each organization uses its own discount rate, so it's best to check with the CFO to know what rate to use.

Know the Company

Although CFOs are likely to run their own net present value calculations, facility executives who take the time to learn the factors that influence financial decision-makers within an organization are more likely to be heard than those that don't expend such effort. Additionally, understanding ROI and net present value indicates to CFOs that a facility executive has the organization's best interest in mind.

To that end, facility executives should find out what they can about an organization's intent with a given facility before walking into the CFO's office. If, for example, the organization

BE PRECISE

CFO's Scrutiny Doesn't Mean Skepticism

In a sense, Bob Holesko is a lucky guy. Any of his projects with a payback of three years or less has automatic approval. But that's where luck stops. Once the project has been funded, Holesko, vice president of facilities for HEI Hotels and Resorts, has to show top management that the investments are paying off.

And the investments have been significant for HEI, owner and operator of upscale hospitality properties: roughly $4.5 million for energy efficiency upgrades, most of it spent between June and December 2007.

So far, so good. Through October, energy costs for 2007 were $950,000 lower than in 2006. Holesko expects the amount to go well past $1 million when end-of-the-year data for 2007 is available.

But that's not the whole story. "The main lighting and HVAC controls projects didn't really kick in until June," says Holesko. Some lighting projects weren't wrapped up until December. By the end of 2008, energy cost reductions should exceed $2.5 million. At that rate, the project will be on track for a three-year payback.

Holesko has learned to be precise about the term he uses to describe the money HEI didn't spend on energy.

"I called it savings, but I changed that to prevented cost. We didn't really save it. But we definitely took a million dollars and added it to the bottom line," he says.

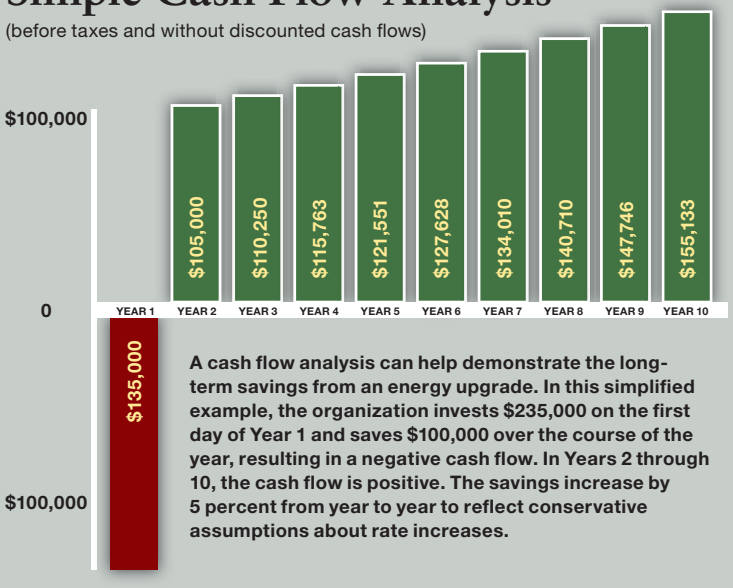
That sort of precision is important when Holesko sits down with CEO Gary Mendell, COO Ted Darnall, and Glenn Tuckman, senior vice president of asset management and operations, to whom Holesko reports. Those top executives look at energy upgrades from a broad business perspective.

For example, at the Boca Raton Marriott in Florida, year-to-date energy consumption was down 21 percent through October. But occupancy was also down, by 7 percent. Temperatures were also milder than the previous year, reducing the need for cooling.

"When you drill down, maybe that 21 percent is only 10 percent,

Simple Cash Flow Analysis

(before taxes and without discounted cash flows)



A cash flow analysis can help demonstrate the long-term savings from an energy upgrade. In this simplified example, the organization invests $235,000 on the first day of Year 1 and saves $100,000 over the course of the year, resulting in a negative cash flow. In Years 2 through 10, the cash flow is positive. The savings increase by 5 percent from year to year to reflect conservative assumptions about rate increases.

intends on selling a building within a couple years, there is little point in focusing on an analysis that looks at the next decade. Instead, facility executives should look at how an energy improvement project might boost the selling price of a property.

Many organizations value real estate based on a multiple of an organization's net operating income. Although the multiplier will vary — again, check with the CFO for the right number to use — the number can be used to show how operational savings from an energy project can help a building appreciate. If the organization's multiplier is 10, for example, an energy management project that generates $300,000 a year in operational savings also increases the value of the property by $3 million. The increase in value can be more valuable in selling a project to a CFO who is interested in maximizing the value of a building that will be sold in a couple years.

Performing an adequate financial analysis should be the heart of any energy project proposal to a CFO. In addition to running the hard numbers, however, facility executives shouldn't forget to include other items in the presentation that could also contribute to a project's worthiness. Some considerations include line items that show realistic expectations for labor, maintenance and repair savings produced by an energy upgrade. An expanded version of the analysis might include other company benefits with proper documentation and explanations of all assumptions for the cash value of productivity improvement, product quality improvement and customer satisfaction.

Paying For It

Keep in mind the big picture is an analysis of the life-cycle cost of doing nothing versus the life-cycle cost of the proposed energy project. Assuming hard numbers show that an energy project is worth pursuing on financial terms, facility executives should take the next step and offer methods of financing the upgrade.

Exposing the project to a rigorous analysis that shows it will pay for itself over time and improve cash flow is a big first step. However, the analysis does nothing to provide the actual funds required to make the purchase. Facility executives should investigate what sort of funding is available through their state energy offices, utility rebates and demand-side management programs.

Many states have low interest loans as a companion to the demand-side management programs. The availability of 1.5 to 3 percent funds may prove enticing to the CFO.

Participating in demand-response, also known as load-curtailment, programs may also provide some funds. If it makes business sense, organizations can agree to reduce energy consumption during peak load times. Utilities pay organizations to participate in such programs because it costs more to pro-

but that's still great," Holesko says.

Holesko doesn't try to adjust his prevented-cost figures for factors like degree-days. His CFO hasn't asked for that and he doesn't have the time it would take to do it. He says that his figures are probably 90 to 95 percent accurate.

The scrutiny Holesko gets isn't a sign that HEI top management is skeptical about his upgrade program. "They've been long-term advocates of energy conservation," Holesko says. "They know the benefits of it. But they're looking at it from the CFO perspective. We're spending all this money. How do we know we're performing?"

BOB HOLESKO

Far from being dubious about energy measures, HEI top management sees efficiency as an important business strategy. They realize that a $300,000 lighting upgrade with a three-year payback will return about $1 million over the 10-year expected life of the system.

So convinced are the company's top executives of the value of energy efficiency that they factor potential upgrades into the financial equation when deciding whether to buy a property. When Holesko performs due diligence on a facility HEI has its eyes on, the first thing he does is walk to a stairwell and pop the diffuser off the lighting fixture. If he sees T12 lamps, he knows he has guaranteed savings on a fixture that burns 24 hours a day. He then continues around the building, looking for incandescent bulbs and inefficient equipment like water heaters, motors, guestroom thermostats and kitchen exhausts. The more he finds, the more he knows he can save — and the more value he can add to the asset.

Asset appreciation can be a significant factor for owners evaluating energy improvements, says Richard Lubinski, an energy consultant who works with Holesko. A potential buyer of a multitenant office building, for example, might be willing to pay 10 times the positive cash flow of the property. If energy upgrades can reduce energy expenditures by $50,000 a year at the facility, the asset value rises by $500,000.

"Asset appreciation can be a hot button for owners," says Lubinski. "The numbers can be fairly dramatic."

— Edward Sullivan, editor

Calculating ROI

Return on investment (ROI) is a measure of the savings a project delivers for each year it is in place. It is MORE MEANINGFUL THAN SIMPLE PAYBACK because it takes into account the savings a project will generate even after the initial investment has been recouped. ROI is expressed in a percentage and is calculated by dividing the simple payback period of a project into 100 percent. For example, a project with a simple payback period of one year has an ROI of 100 percent. A project with a two-year payback has an ROI of 50 percent. A five-year simple payback yields an ROI of 20 percent.

Consider an energy project that costs $50,000 and is calculated to have a simple payback period of four years. The ROI would be 25 percent. The project would recoup $12,500 in each of the first four years, meaning that, at the end of the fourth year, the project would have recovered its initial investment. Money saved in the fifth, sixth and every subsequent year the improvement is in place would save the organization an additional $12,500, or 25 percent of the original project cost.

The downside of using ROI to measure a project's long-term value is that it fails to consider the value of money over time and other variables that affect a project's performance. If electricity rates rise above those used to initially establish the simple payback, the ROI figure will be understated. Likewise, the number will be inaccurate if an organization's energy use pattern changes significantly. In preparing analyses, it is best to use conservative or hard numbers for projected energy savings and the correct incremental value for the energy that will be saved.

— Richard Lubinski

duce energy during those high-demand hours than it does to pay customers to forgo energy use during those hours.

Senior executives' time is at a premium, so an energy management project's economic analysis must be done professionally. Use the economic benchmarking tools common to executive suites and have a two-page executive summary. Take time to understand the company's balance sheet, income statement and the multiyear financial trends as well.

Now is the time to revisit prior energy audit recommendations or hire a certified energy manager (CEM) to conduct an energy audit. A CEM will independently review a facility's energy costs, usage patterns, tariffs and mechanical/electrical equipment to develop the most cost-effective energy conservation measures.

About four out of five cost-effective energy projects could be approved if the assumptions are conservative, the economic analysis is clear, there is public or utility money to help fund it and the proposed project is viewed in economic and not engineering terms. BOM

Richard G. Lubinski is an independent energy consultant with 26 years of experience in 34 states and other countries. He speaks on a variety of energy management topics at national conferences. His firm has energy consulting contracts with the federal and state governments, in addition to commercial and industrial clients.

E-mail comments and questions to edward.sullivan@tradepress.com.