

Tax Deductions Brighten Lighting Upgrades

By Charles Goulding, Jacob Goldman and Siddharth Sheth

By all accounts, the Energy Policy Act of 2005 (EPAct)¹ got off to a slow start. Along with many other provisions, the much-hyped law provides tax incentives to encourage more energy-efficient buildings. But there were delays in promulgating the Internal Revenue Service regulations to implement the law. And it's taken a while for facility executives to understand the complex legislation.

Today, however, a growing number of facility executives are coming to see how EPAct may offer significant financial benefits, especially for lighting systems.

Effective Jan. 1, 2006, EPAct provided new tax deductions for specific investments that improve the energy efficiency of either the entire building or one of three building systems: lighting, HVAC or the building envelope. To qualify for those deductions, a project—whether an entire building or one of the three subsystems—must cut energy use compared to the limits specified in ASHRAE 90.1-2001.²

The amount of the deduction depends on how efficient the system is. The deductions are available for both new construction and improvements to existing buildings. The project must be placed in service between Jan. 1, 2006, and Dec. 31, 2008. Congress is currently weighing a measure to expand the tax deduction amounts and extend EPAct through the 2012 tax year and through 2014 for projects certified as of 2012.

To date, lighting systems have been by far the biggest beneficiaries of EPAct deductions. One important factor has been tremendous improvements in lighting product efficiency—many of today's lighting products meet the EPAct energy target. Combine those factors with the substantial economic benefits provided by EPAct, and there

may well be a solid economic case for installation of high efficiency lighting.

What's more, the process of qualifying for lighting deductions is easier than for HVAC or the building envelope. For those two areas, energy modeling is required. For lighting, two methods are available for obtaining tax deductions. The simpler of the two is the prescriptive method, which is based on watts per square foot and does not require modeling. The second method is modeling to show a 16.67 per cent energy cost reduction compared to ASHRAE 90.1-2001. Modeling is the only way to obtain the benefits of watt per square foot power allowance adjustments for lighting controls.

The Opportunity

EPAct tax deductions for lighting start at 30 cents per square foot for a 25 percent reduction in light power density compared to ASHRAE 90.1-2001 requirements. The deduction can be as great as 60 cents per square foot for a 40-percent reduction.

To illustrate the economic benefit, a 100,000-square-foot building that qualifies for the maximum incentive will generate a \$60,000 federal income tax deduction and, in most states, a corresponding \$60,000 state income tax deduction.

To qualify for these deductions, a facility has to meet not only the specified EPAct light power density requirements for that type of space, but also comply with some additional mandates. Under the current legislation, in effect until 2008, these additional requirements include bi-level switching and minimum IESNA light levels. Bi-level switching means having at least two levels of light other than off in all spaces. A space is defined as an area surrounded by floor-to-ceiling walls. A dimmer, for example, meets the requirements because it provides multiple levels of light. Two or more switches controlling different fixtures in a space would also meet this bi-level requirement. Occupancy sensors do not,

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on their own, meet this bi-level requirement because they do not provide two levels of light.

To get a deduction for a lighting EAct project, facility executives need to know the square footage of the spaces subject to the project, the watts per square foot for all rooms—including new and retained wired lighting—and how the bi-level switching requirement has been met. Documentation for the lighting tax deduction includes a watts-per-square foot spreadsheet for all wired lighting, a written energy plan, a certification and an inspection document.

Maximizing Benefits

Many lighting projects just miss qualifying for EAct tax incentives because the lighting systems designer wasn't aware how close the design was to meeting EAct requirements. There are cases where design needs will trump EAct qualification but those occasions should represent conscious decisions. In many situations, merely changing one item in a design—such as high wattage display cases—or changing out a few more fixtures than originally anticipated makes the difference between no tax deduction and a large tax deduction.

On a national facility project for a large retirement organization, for example, a slight design change increased the EAct tax deductions from \$2,000 per facility to \$40,000 per facility.

The first step to obtaining EAct deductions is hiring a lighting designer who is familiar with EAct requirements or is willing to learn them. If a facility executive hires an architect or lighting designer who has no familiarity with EAct, it may well be worth allowing some additional time to learn the standards. It would also be important to ask the designer to explain the rationale for designs involving large building spaces that don't qualify for EAct tax deductions.

Good design incorporates many different—and sometimes conflicting—considerations. However, it's clear that energy-efficient design is now being given more weight than in the past. There has also been a quantum leap in the energy efficiency of lighting products, which makes it possible to achieve both good lighting quality and energy efficiency. Facility executives should look for a designer who is familiar with today's products and is not merely recycling outdated, inefficient design solutions.

It is also important to keep accurate records of which properties have qualified for EAct tax deductions and for how much per square foot. For example, a building that in 2007 qualifies for deduction of 37 cents per square foot will have the opportunity to achieve a sec-

ond deduction of 38 cents per square foot if a proposal to increase the deduction from the current 60 cents to 75 cents becomes law.

Getting a “Free Ride”

Organizations that installed energy efficient lighting before Jan. 1, 2006—that is, before the beginning of the EAct qualifying period—have the potential to get what is known as a “free ride” under the law. That's true if the organization has already achieved the EAct light power density targets. The reason: Lighting projects undertaken after Jan.1, 2006, for buildings that have already hit the light power density targets are automatically entitled to a tax deduction. Essentially this means that if a facility already meets the EAct watts-per-square-foot target, virtually all lighting upgrades will qualify for tax deduction.

Free riding is typically used to obtain automatic tax deductions for lighting controls projects, including occupancy controls, dimming and daylighting systems as well as the lighting portion of building management systems.

More and more facility executives are beginning to understand free riding. At one department store chain, a lighting controls project involving 20 facilities qualified for a “free ride” tax deduction. The chain had invested in energy efficient lighting before EAct was passed and already met the EAct watts-per-square-foot requirement before the lighting controls were installed. Most of the projects involved automatic shutoff systems—time clocks or occupancy sensors. Ten stores qualified for the full 60 cents per square foot deduction.

Tax Tips

Beginning in late 2005, the U.S. lighting industry did a magnificent job of introducing EAct on industry Web sites and in trade brochures. But practical problems made it difficult for facility executives to take advantage of the deductions.

Applying EAct requires interdisciplinary skills involving engineering, energy management and tax concepts that aren't normally part of the basic skill set of any single professional. The mainstream tax profession community is often not conversant with lighting electrical wattage, HVAC energy efficiency and building envelope fenestration concepts. Likewise, the facilities community generally isn't familiar with tax deductions and normally doesn't use income tax benefits as part of the project capital authorization process.

Initially, the lighting industry described the basic EAct concepts and then recommended that facility executives seek tax advice. Increasingly, the lighting industry is engaging specialized tax consulting firms that have the required skill set necessary to identify, analyze and capture the EAct benefits.

Today, companies are beginning to obtain substantial tax savings ranging from a few thousand dollars for small projects to tens of millions of dollars for large national property holders.

To date, the most common lighting EAct projects involve distribution centers, industrial facilities and retail spaces. But EAct deductions have also been gained for lighting projects in office buildings, supermarket chains, restaurants, assisted living facilities, hotels and other types of buildings.

There is a great deal of synergy between EAct and the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) green building rating system. LEED requires computer modeling to document target levels of energy efficiency; EAct also requires computer modeling for HVAC, building envelope, whole-building and some lighting deductions. More importantly, LEED generally requires adherence to ASHRAE 90.1-2004 energy efficiency requirements, meaning that LEED projects will generally either qualify for EAct tax deduction or come very close. What's more, ASHRAE 90.1-2004 is the basis for code in some states.

For example, office buildings qualify for EAct at the .975 watts per square foot level and ASHRAE 90.1-2004 sets a maximum of 1 watt per square foot for office buildings. So a building planned to meet 90.1-2004 only needs to reduce lighting energy use by .025 watts per square foot to qualify for an EAct deduction. Accordingly, leading office building developers are increasingly setting their office building lighting requirements at less than .975 watts per square foot so that they both meet the requirements of ASHRAE 90.1-2004 and qualify for EAct. It seems likely that the LEED-qualified professionals will begin to realize that EAct provides meaningful economic incentives to support their LEED initiatives.

The modeling required to qualify for a whole-building

deduction under EAct is very similar to LEED modeling. However, for separate systems modeling relating to lighting, HVAC and the building envelope, EAct building modeling requires taking a different approach, one that most engineers are not familiar with. Facility executives should be sure that their engineers understand, in-depth, the computer modeling requirements of EAct.

EAct Lighting Success Stories

EAct has made it possible for many warehouses, distribution centers and industrial property owners to realize substantial tax deductions. For example, the Genlyte supply division facility in Union, N.J., replaced older metal halide lighting with energy-efficient fluorescent lighting. In the assembly/parts facility, 240 metal halide fixtures with a rating of 455 watts per fixture were changed over to four-lamp T5 fixtures with a rating of 236 watts per fixture. In the warehouse, approximately 40 metal halide fixtures were replaced with more energy-efficient six-lamp T5 fixtures as well.

With these changes, lighting energy use for the assembly/parts facility fell from 1.33 to .84 watts per square foot. For the warehouse, lighting energy use dropped from .56 to .48 watts per square foot. The result was a 35 percent reduction in lighting energy cost and an EAct tax deduction exceeding \$100,500.

The building industry is increasingly recognizing the substantial value of EAct-related lighting upgrades for both energy savings and tax deductions. For the first time, national property owners have a national lighting standard energy target that provides national economic benefits. If the EAct extension bill is enacted, as expected, virtually every US commercial and government building will have the opportunity to benefit from this legislation. *Energy Tax Savers, Inc* has developed complimentary EAct designer guides for major building categories including distribution centers, offices, pharmaceutical facilities, hotels and schools.

ENDNOTES

¹ Energy Policy Act of 2005 (P.L. 109-58).

² ASHRAE 90.1-2001 is a standard of the American Society of Heating Refrigerating and Air-Conditioning Engineers.

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