

## **Energy Policy Act of 2005 Encourages Energy-Efficient Lighting with Tax Deduction**

*By Craig DiLouie, Lighting Controls Association*

On August 8, President Bush signed the Energy Policy Act of 2005 (EPAAct 2005), which had passed both the Senate and House of Representatives the previous week after years of wrangling between Democrats and Republicans. Estimated to cost about \$14.5 billion over 10 years, EPAAct 2005 is the biggest overhaul of national energy policy since 1992. EPAAct 1992 required the phased elimination of several popular types of fluorescent and incandescent lamps, and began the deregulation process of the \$300 billion electric power industry. EPAAct 2005 is considered to be less ambitious on energy's demand side than its supply side, but does include a number of energy conservation provisions supported by the National Electrical Manufacturers Association (NEMA), several of which are of great interest to the lighting community.

In this special report from the Lighting Controls Association, we will examine a significant provision that includes a tax deduction of up to \$1.80 per square foot for building owners to encourage investment in energy-efficient building systems. This provision, estimated by Congress to cost \$243 million and anticipated to stimulate widespread investment, is supported by NEMA and various industry, efficiency advocacy, and environmental organizations.

You may remember that the Lighting Controls Association covered this tax deduction about three years ago, when the passage of an EPAAct 2002 appeared imminent, but that version of the legislation did not pass. With the passage of EPAAct 2005, a tax deduction for energy efficiency is finally a reality. In this special report, we'll talk about it in detail. Next month, we will cover other aspects of the law.

### **The deduction**

Under current law, the cost of energy-saving investments must be capitalized and depreciated over time. EPAAct 2005, Section 1331, states: "There shall be allowed as a deduction an amount equal to the cost of energy efficient commercial building property placed in service during the taxable year."

"The Energy Policy Act of 2005 contains a variety of tax credits and deductions for business and consumers," says Kyle Pitsor, Vice President Government Relations for NEMA. "The NEMA-backed commercial building tax deduction is designed to encourage investment in energy-efficient commercial buildings. This provision is the first time a special deduction is available for expenses incurred for energy-efficient commercial building property. Lighting products and systems are ideally positioned for deployment using the deduction provision."

Specifically, EPAAct 2005's Energy Efficient Commercial Buildings Deduction provides one of three possible tax deductions.

### **Energy-efficient commercial property**

EPAAct 2005 provides a tax deduction of up to \$1.80/sq.ft. for investment in energy-efficient commercial building property as part of new construction or renovation (within the scope of the ASHRAE/IES 90.1 Standard). The amount of the deduction is the lesser of: 1) \$1.80/sq.ft. or 2) the costs incurred or paid for the energy-efficient property.

"Energy-efficient property" is defined by EPAAct 2005 to be commercial building property that is certified to reduce total annual energy and power costs to at least 50% less than a building satisfying the 90.1-2001 Standard.

Qualifying systems include 1) interior lighting systems, 2) heating, cooling, ventilation and hot water systems, and 3) building envelope.

In addition, the property must 1) be otherwise depreciable property, 2) located in the United States, 3) paid to be constructed by the taxpayer seeking the deduction.

The ASHRAE/IES 90.1-2001 Standard is defined as the standard as in effect on April 2, 2003. This means that the published lighting power densities in the Standard's Table 9.3.1.1 (building area method) and Table 9.3.1.2 (space-by-space method) are in effect as far as the tax deduction is concerned.

Understanding what version of the Standard applies is important because after April 2, 2003, Standard 90.1-2001 was amended with Addendum g, which reduced the lighting power densities to values that are now adopted in 90.1-2004. States that adopt Standard 90.1-2001 may do so with amendments or without. For the purpose of claiming the tax deduction, Standard 90.1-2001 without Addendum g applies. The below table shows minimum LPD values specified by ASHRAE/IES 90.1-2001, with 1989, 1999 and 2004 standards shown for comparison, courtesy of OSRAM SYLVANIA, Inc.

| Building Area Method        | Lighting Power Densities |      |      |      |
|-----------------------------|--------------------------|------|------|------|
|                             | 1989                     | 1999 | 2001 | 2004 |
| Automotive Facility         | 0.96                     | 1.5  | 1.5  | 0.9  |
| Convention Center           | 2.07                     | 1.4  | 1.4  | 1.2  |
| Court House                 | 1.44                     | 1.4  | 1.4  | 1.2  |
| Dining: Bar Lounge/Leisure  | 1.37                     | 1.5  | 1.5  | 1.3  |
| Dining: Cafeteria/Fast Food | 1.37                     | 1.8  | 1.8  | 1.4  |
| Dining: Family              | 1.37                     | 1.9  | 1.9  | 1.6  |
| Dormitory                   | 1.15                     | 1.5  | 1.5  | 1.0  |
| Exercise Center             | 2.07                     | 1.4  | 1.4  | 1.0  |
| Gymnasium                   | 2.07                     | 1.7  | 1.7  | 1.1  |
| Healthcare Clinic           | 1.44                     | 1.6  | 1.6  | 1.0  |
| Hospital                    | 1.44                     | 1.6  | 1.6  | 1.2  |
| Hotel                       | 1.15                     | 1.7  | 1.7  | 1.0  |
| Library                     | 1.29                     | 1.5  | 1.5  | 1.3  |
| Manufacturing Facility      | 0.96                     | 2.2  | 2.2  | 1.3  |
| Motel                       | 1.15                     | 2.0  | 2.0  | 1.0  |
| Motion Picture Theater      | 2.07                     | 1.6  | 1.6  | 1.2  |
| Multi-Family                | 1.15                     | 1.0  | 1.0  | 0.7  |
| Museum                      | 2.07                     | 1.6  | 1.6  | 1.1  |
| Office                      | 1.26                     | 1.3  | 1.3  | 1.0  |
| Parking Garage              | 1.03                     | 0.3  | 0.3  | 0.3  |
| Penitentiary                | 1.44                     | 1.2  | 1.2  | 1.0  |
| Performing Arts Theatre     | 2.07                     | 1.5  | 1.5  | 1.6  |
| Police/Fire Station         | 1.44                     | 1.3  | 1.3  | 1.0  |
| Post Office                 | 1.44                     | 1.6  | 1.6  | 1.1  |
| Religious Building          | 2.07                     | 2.2  | 2.2  | 1.3  |
| Retail                      | 2.25                     | 1.9  | 1.9  | 1.5  |
| School/University           | 1.29                     | 1.5  | 1.5  | 1.2  |
| Sports Arena                | 2.07                     | 1.5  | 1.5  | 1.1  |
| Town Hall                   | 1.44                     | 1.4  | 1.4  | 1.1  |
| Transportation              | 2.07                     | 1.2  | 1.2  | 1.0  |
| Warehouse                   | 1.03                     | 1.2  | 1.2  | 0.8  |
| Workshop                    | 0.96                     | 1.7  | 1.7  | 1.4  |

**Individual systems**

EPAAct 2005 instructs the Secretary of the Treasury, in consultation with the Secretary of Energy, to develop an energy-savings target for each type of system covered (interior lighting, HVAC/hot water, building envelope). Meeting any of the three targets will be another route building owners can take to demonstrate qualification for the deduction.

If a property does not qualify for the \$1.80 tax deduction, but one of the qualifying systems meets its designated energy-savings target, then the property will be eligible for a partial tax deduction. Therefore, if a commercial building property does not meet the requirement, but the interior lighting system meets its own energy-savings target, then a partial tax deduction may be allowed. This deduction/system is the lesser of: 1) \$0.60/sq.ft. or 2) the costs incurred or paid for the energy-efficient system.

**Interim rules for lighting systems**

EPAAct 2005 establishes interim rules for lighting systems effective until the Secretary of the Treasury issues the final regulations defining the energy-savings target for lighting systems.

The Interim Rules for Lighting Systems define the lighting system energy-savings target to be a lighting power density that is 25-40% lower than the minimum requirements in Table 9.3.1.1 (building area method) or Table 9.3.1.2 (space-by-space method) (not including additional interior lighting power allowances) of Standard 90.1-2001. For warehouses, the lighting power density must be 50% lower than the minimum requirements of Standard 90.1-2001.

The below table defines various savings targets on a 25-40% scale, with associated maximum allowable tax deduction:

|  |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| % of LPD reduction beyond Standard 90.1-2001 | 25%    | 26%    | 27%    | 28%    | 29%    | 30%    | 31%    | 32%    | 33%    | 34%    | 35%    | 36%    | 37%    | 38%    | 39%    | 40%    | >40%   |
| Amount of Eligible Tax Deduction/ sq.ft.     | \$0.30 | \$0.32 | \$0.34 | \$0.36 | \$0.38 | \$0.40 | \$0.42 | \$0.44 | \$0.46 | \$0.48 | \$0.50 | \$0.52 | \$0.54 | \$0.56 | \$0.58 | \$0.60 | \$0.60 |

Below are examples of maximum allowable tax deductions for office, school/university, retail and warehouse buildings according to various levels of exceeding Standard 90.1-2001 requirements (building area method):

|                       |                                  | ASHRAE/IES 90.1-1999 and 90.1-2001 |                          | Tax Deduction          |                         |                     |
|-----------------------|----------------------------------|------------------------------------|--------------------------|------------------------|-------------------------|---------------------|
|                       |                                  |                                    |                          | Interim Lighting Rules |                         |                     |
| Office LPD (W/sq.ft.) | School/University LPD (W/sq.ft.) | Retail LPD (W/sq.ft.)              | Warehouse LPD (W/sq.ft.) | LPD Reduction          | Non-Warehouse \$/sq.ft. | Warehouse \$/sq.ft. |
| 1.3                   | 1.5                              | 1.9                                | 1.2                      | 0%                     | \$0.00                  | \$0.00              |
| 0.975                 | 1.125                            | 1.425                              | 0.900                    | 25%                    | \$0.30                  | \$0.00              |
| 0.910                 | 1.050                            | 1.330                              | 0.840                    | 30%                    | \$0.40                  | \$0.00              |
| 0.845                 | 0.975                            | 1.235                              | 0.780                    | 35%                    | \$0.50                  | \$0.00              |
| 0.780                 | 0.900                            | 1.140                              | 0.720                    | 40%                    | \$0.60                  | \$0.00              |
| 0.715                 | 0.825                            | 1.045                              | 0.660                    | 45%                    | \$0.60                  | \$0.00              |
| 0.650                 | 0.750                            | 0.950                              | 0.600                    | 50%                    | \$0.60                  | \$0.60              |

(Note again that for warehouses, the lighting power density must be 50% lower than the minimum requirements of Standard 90.1-2001 to claim a tax deduction.)

Besides demonstrating a reduction in lighting power density than Standard 90.1-2001, all controls provisions in the Standard must be met, bi-level switching must be installed for most buildings, and the application must meet the minimum requirements for calculated light levels as set forth in the 9th Edition of the IESNA *Lighting Handbook*.

A 0.78W/sq.ft. power density is achievable in offices with commonly available products and well established strategies such as 3000-3100+ catalog lumen F32T8 lamps, extra-efficient ballasts and high-performance fixtures such as suspended indirect fixtures, says Stan Walerczyk, LC, principal of Lighting Wizards.

### **Who can claim the tax deduction**

In the case of privately owned buildings, the tax deduction is earned by the owner or person or entity that paid to have the building constructed or renovated.

In the case of publicly owned (Federal, State or local government or a political subdivision of one) buildings, the law states that the Secretary of the Treasury will create a regulation "to allow allocation of the deduction to the person primarily responsible for designing the property in lieu of the owner of such property. Such person will be treated as the taxpayer for purposes of this deduction."

### **How to claim credit**

The Treasury Secretary will be issuing rules that lay out the certification program based on qualified software programs. A number of such programs are in use today. The tax deduction is allowable in the year in which the energy-efficient property is placed in service. The Treasury Department will be issuing appropriate modifications to its forms to implement the provision. Lighting and building management professionals are encouraged to seek the consultation of a tax expert.

### **Window of opportunity**

EPAct 2005's Energy Efficient Commercial Buildings Deduction applies with respect to property placed in service between January 1, 2006 and December 31, 2007, inclusive. The original window was four years, but this was compressed to two years after intense Congressional negotiations to reduce the overall cost of the tax package. Congress may extend the window by an act of legislation, which NEMA is planning to advocate by demonstrating the success of the deduction in stimulating energy savings in cooperation with its members and others.

### **Benefits**

NEMA estimates that the energy capacity savings for lighting alone is about 312MW of electricity for the two-year provision, which will result in a reduction of about 10 million metric tons of carbon emissions. NEMA further estimates that the provision will generate about \$500 million in additional sales of lighting systems and products alone.

"The provision offers opportunities to design, install, service and maintain energy-efficient lighting, HVAC and building envelope systems," says Pitsor. "In addition, the building owner may be able to take credit in complying with the provision using daylighting, improved fan efficiency, multiple- or variable-speed compressors, on-site generation, and wiring with lower energy losses, to name a few technologies. There are market opportunities along the entire value chain."

### **More information**

NEMA is developing a package of information about the provision, its practical application and how the tax deduction can be applied. For more information, visit the NEMA website at [www.nema.org](http://www.nema.org).

The Lighting Controls Association is an organization dedicated to educating the public about the operation and benefits of lighting automation. Members include Advance, Lithonia Controls, Lightolier Controls, OSRAM SYLVANIA, Tridonic, The Watt Stopper, Square D, PCI Lighting Controls, HUNT Dimming, Lutron, Leviton and Universal Lighting Technologies.

To learn more about lighting automation and lighting efficiency trends, visit the Lighting Controls Association's website at [www.aboutlightingcontrols.org](http://www.aboutlightingcontrols.org).