

Energy Act- Government trying to help and what it means to you

On August 8, 2005, the Energy Policy Act of 2005

[H.R. 6; Public Law 109-58] was signed into law.

This landmark piece of legislation represents the most significant overhaul of the nation's energy policy since EPAct 1992 mandated the phased elimination of several of the most commonly produced types of fluorescent and incandescent lamps and triggered deregulation of the electric power industry. The main goals of EPAct 2005 are to promote energy efficiency and conservation while supporting an increase in domestic energy production, including energy from renewable resources. While EPAct 2005 is less stringent on the energy demand side than on the supply side, it does include a number of energy conservation provisions, supported by the National Electrical Manufacturers Association (NEMA), which are significant for the lighting industry. Those provisions allow for attractive tax deductions of up to \$1.80 per square foot for commercial building owners who invest in energy efficient building systems. Given that many buildings contain inefficient, outdated lighting systems, these products and systems are ideally positioned to capitalize on the tax deductions. LIMELUMI™ has provided this guide to help you understand the tax benefits afforded by EPAct 2005 and to develop strategies that ensure compliance and reap the financial benefits of using our industry-leading products in your lighting system upgrades.

Energy Policy Act of 2005

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Efficiency Standards

for Lighting Products

There are provisions in EPA Act 2005 that specifically impact lighting products. The bill sets new efficiency standards as follows:

Effective January 1, 2006

- Illuminated exit signs in new installations must meet ENERGY STAR® Version 2.0 efficiency levels (input power of 2.5 Watts per face). This standard will move the industry towards newer lighting technologies such as LEDs, that have combined properties of high brightness and low wattage.

- Torchiere type fixtures will be limited to using light sources that total not more than 190 Watts.

Since many torchieres use halogen lamps, the rationale is to encourage the use of more energy efficient light sources, such as compact fluorescent, or at the very least, to require halogen bulbs of lower wattage than lamps typically found in these fixtures.

- Bare bulb and covered (not reflector type) medium screw base self ballasted compact fluorescents (CFLs) must meet Energy Star performance requirements that became effective August 9, 2001.

The performance aspects covered are minimum initial efficacy, lumen maintenance at 1000 hours, lumen maintenance at 40 percent of rated life, rapid cycle stress tests and lamp life. Color rendering index (CRI), power factor, operating frequency, and startup time may be incorporated into future requirements.

- All newly manufactured traffic signals must meet or exceed Energy Star performance requirements for Traffic Signal Version 1.1, which essentially mandates that LEDs will be used.

Effective January 1, 2007

- All ceiling fan light kits with medium base sockets must be packaged with compact fluorescent lamps that meet Energy Star Version 3.0 performance requirements, or with another light source of equal or greater lumen-per-watt efficacy than CFLs. Pin base socket fixtures must meet Energy Star Residential Light Fixture Version 4.0 performance requirements, and these kits must be packaged with pin base lamps. Other requirements are effective as of January 1, 2009.

Effective January 1, 2008

- Mercury vapor ballasts designed for general illumination applications may not be manufactured or imported. A recent entry into the Federal Register confirms that this also extends to ballasts incorporated as part of a lighting fixture.

Effective January 1, 2009

- New efficiency requirements for electromagnetic ballasts that operate reduced wattage “energy-saver” type fluorescent lamps will go into effect. On that date, manufacturing of electromagnetic ballasts for use in new fixtures must cease. Electromagnetic ballasts for use in new fixtures may not be sold after October 1, 2009. Electromagnetic replacement ballasts can be sold up until July 1, 2010, but must be

labeled “For Replacement Only” and may not exceed 10 pieces per package. Exempt from these requirements are ballasts designed to dim to 50% or less of the maximum light output, ballasts designed for use with 2 F96T12/HO lamps at ambient temperatures of 20°F or less and for use in outdoor signs, and ballasts of less than 0.9 power factor designed and labeled “For Residential Use Only”.

- All ceiling fan light kits manufactured after January 1, 2009, with any socket type other than medium screw base or pin-base compact fluorescent shall not be capable of operating with lamps that total more than 190 watts and shall be packaged with lamps that do not total to more than 190 watts. The other socket types would include candelabra screw-base sockets, intermediate screw-base sockets, 2-pin halogen sockets, bayonet sockets and all socket types other than medium screw base or pin-based for fluorescent lamps.

4 The Impact of EPCRA 2005

Federal Buildings

EPCRA 2005 sets out requirements for federal buildings targeted to raise energy efficiency and reduce energy consumption. These requirements present further opportunity for the proliferation of energy efficient technologies in federal facilities. New construction federal building performance standards call for new buildings to comply with the 2004 IECC* for residential buildings and to beat ASHRAE/IESNA** Standard 90.1-2004 by 30% for commercial and multi-family, high-rise residential buildings for which design for construction began on or after January 3, 2007 if it is life-cycle cost effective. If a 30% reduction is not lifecycle cost effective, the design of the buildings shall be modified to achieve an energy consumption level at the maximum level of energy efficiency that is lifecycle cost effective, but, at a minimum, complies with ASHRAE/IESNA 90.1-2004. This requirement covers lighting, space heating, space cooling, ventilation, service water heating and all other energy consuming systems normally specified as part of the building

design except for receptacle and process loads.

Additionally, sustainable design principles must be employed in the design and construction of all new and renovated buildings. All existing federal buildings have been given energy management reduction targets. They must achieve a 20% reduction in gross per square foot energy consumption using 2003 consumption level as the baseline. This 20% reduction is to be achieved at a rate of 2% per year starting in 2006 and culminating in 2015.

With these new standards come new benefits. Facility managers at government buildings will be permitted to reinvest the budget dollars saved through compliance with the increased efficiency standards for energy, water, and wastewater improvements. The only stipulation is that these savings must be reinvested 100 percent in the same three types of improvements.

Other Federal Requirements.

For individual states to receive assistance under EAct 2005, the state is required to have a conservation plan in place that targets a 25% improvement in efficient use of energy by 2012 over 1990 levels. Residential rebate programs must specify ENERGY STAR® rated products to replace older products. New commercial construction must exceed the latest IECC or state adopted codes by at least 30%. Renovations of existing buildings must demonstrate a 30% reduction of energy use compared to the level prior to renovation.

Commercial Buildings

Under current law, the cost of energy saving investments must be capitalized and depreciated over time.

EAct 2005, Section 1331 states, “There shall be

allowed as a deduction an amount equal to the cost of energy efficient commercial property placed into service during the taxable year.” Energy efficient property is defined as commercial property that is certified to reduce annual energy and power costs to at least 50% less than buildings satisfying ASHRAE/IESNA Standard 90.1-2001. Under EAct 2005, owners of commercial buildings can take advantage of one-time or partial tax deductions for property put into service between January 1, 2006 and December 31, 2008 inclusive. Properties must be otherwise depreciable property, located in the United States and all applicable costs must be borne by the taxpayer seeking the deduction. Using EAct’s Whole Deduction Method, building owners can claim a one-time tax deduction of up to \$1.80 per square foot for buildings that beat the ASHREA/IESNA 90.1-2001 benchmark by 50% or more (see Figure 2). Investments can be for new construction or renovations and must include the building envelope, interior lighting, HVAC and hot water systems. Using EAct’s Partial Deduction Method, owners can claim up to a \$0.60 per square foot deduction for renovation or new construction of any one system that beats ASHRAE/IESNA 90.1-2001 by a prescribed percentage. This method is useful when not all building systems can comply with a 50% energy reduction. One major stipulation is that the total deduction claimed may not exceed the total cost of the new construction or renovation (design, labor, materials, etc.). Specific guidelines have been set for interior lighting systems, as explained in the next section.

* International Energy Conservation Code

**American Society of Heating, Refrigeration and Air Conditioning

Engineers/Illumination Engineering Society of North America

EPA 2005 Tax Deduction Provisions

EPA 2005 Partial Tax

Deduction—Interim Rules for

interior Lighting Systems

EPA 2005 has established interim rules for commercial

building interior lighting systems that are

in effect until such time that the Secretary of the

Treasury issues the final guidance document designating

the energy-saving targets for lighting systems.

With the issuance of

IRS Notice 2006-52, the

interim rules for lighting

remain in effect through

December 31, 2008.

Congress passed H.R. 6111,

extending the tax deduction

program through December

31, 2008. LIMELUMI™

is not expecting further extension.

The Interim Rules for Interior

Lighting Systems set the

lighting system energy-savings

target to be a lighting

power density 25-40% lower

than the minimum requirements

of ASHRAE/IESNA

90.1-2001. Energy-efficient

lighting can be used to

achieve up to 1/3 of the tax

deduction or \$0.60 per

square foot: (see figure 2 –

next page)

- From \$0.30/sq. ft. for

beating ASHRAE/IESNA
90.1-2001 by 25%

- Up to \$0.60/sq. ft. for

beating ASHRAE/IESNA
Standard 90.1-2001
by 40%

A “sliding scale” approach
is used for savings between
25% and 40%. An exception:
warehouses can

qualify for \$0.60 per square foot but the
lighting system must beat ASHRAE/IESNA
90.1-2001 by 50%. It’s all or nothing.

Using Figure 1, let’s assume that the redesign of
the interior lighting in a 20,000 square foot office
building achieves a lighting power density 40%
lower than the minimum standards of
ASHRAE/IESNA 90.1-2001. The maximum possible
tax deduction is: \$0.60 per square foot (not to
exceed cost of the redesign). The result in this
example is that the building owner earns a maximum
gross tax deduction of \$0.60 per square foot,
or \$12,000. If the owner pays \$12,000 or more in
design, material, and labor to do this retrofit, then
\$12,000 can be written off in the year the building
was commissioned and the balance would be
depreciated in the normal fashion. But, if the owner
pays less than \$12,000 for the retrofit—let’s say
\$10,000---then the deduction is capped at \$10,000,
but the benefit is that the \$10,000 can be written
off in one year instead of having to depreciate it
over time.

EPAAct 2005—Additional
Requirements for Lighting

Systems

Besides meeting IESNA recommended minimum design light levels, lighting systems must also meet the following requirements:

- New buildings must include all ASHRAE/IESNA 90.1-2001 control provisions, including automatic lighting shutoff in all occupancies of buildings greater than 5000 square feet. Retrofits do not have to incorporate automatic shutoff for lighting; however, if lighting controls are replaced or if 50% or more of the luminaires in a space are replaced, the lighting controls must meet the requirements of ASHRAE/IESNA 90.1-2001.
- Bi-level switching is required in all spaces except in hotel/motel guest rooms, store rooms, restrooms, and public lobbies. Bi-level switching is defined as “manual or automatic control (or a combination thereof) that provides two levels of lighting power in a space (not including off). A space is defined as an area enclosed by four or more floor to ceiling walls. Dimming or switching would satisfy this definition.”** Use of an occupancy sensor to turn all lights in a space either “on” or “off” together is not enough to qualify as bi-level switching.

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<25% \$0.00

25% \$0.30

26% \$0.32

27% \$0.34

28% \$0.36

29% \$0.38

30% \$0.40

31% \$0.42

32% \$0.44

33% \$0.46

34% \$0.48

35% \$0.50

36% \$0.52

37% \$0.54

38% \$0.56

39% \$0.58

40% \$0.60

>40% \$0.60

Estimated Tax

Deduction per

Square Foot

** Per FAQ section of www.efficientbuildings.org, recognized as an authoritative source on this issue by NEMA and by the Tax Incentives Assistance Project

6 The Impact of EPC Act 2005

The Building Area Method is the simpler of two methods in ASHRAE/IESNA Standard 90.1 used to calculate the total wattage allowed for lighting in the entire building. For example, when lighting a 100,000 square foot office building, one could use the Building Area Method and multiply 1.3 watts per square foot x 100,000 square feet. The result is an allowed maximum of 130 kilowatts of lighting load. Alternatively, one could use the Space-by-Space Method and multiply the square footage of each different type of space by its unique power density. So if the office building had 30,000 square feet of enclosed offices, 50,000 square feet of open offices, 10,000 square feet of training rooms, and 10,000 square feet of conference rooms, each of these areas would be multiplied, respectively, by 1.5, 1.3, 1.6 and 1.5, per the Space-by-Space Method power density values. Generally speaking, the Space-by-Space Method

yields more generous wattage allowances, making it worth the effort to use this method.

Other Things You Need to Know

What Is My Window of Opportunity?

The building or retrofit must be placed into service between January 1, 2006 and December 31, 2008 inclusive. Congress may, at its discretion, extend the window by an act of legislation.

The National Electrical Manufacturers Association (NEMA) is planning to advocate for this extension by demonstrating the success of the tax incentives in stimulating energy savings.

Who Gets the Deduction?

The tax deduction for private buildings goes to the building owner. In the case of commercial properties where the owner is a federal, state, or local government entity, the person primarily responsible for the design of the property can claim the tax deductions. In the case of commercial building tenants who make improvements, the tenant and landlord would have to determine who the building owner is, for tax purposes. In the case of lighting, whoever carries the lighting fixtures as an asset on their books is most likely to be considered the “owner” for tax purposes.

How Do I Count the Watts?

“System” wattage must be used, which means that the total input wattage of the lamp/ballast combination must be used for fluorescent and HID. In the case of fluorescent systems that use energy-saving T8 linear lamps, the system wattage should be calculated assuming that the energy-saving lamp is in the socket – not a full wattage lamp such as 32W – provided that these energy-saving lamps are actually installed. The energy-saving T8 lamps should be clearly specified in the bill of material for the project (needed for purchasing and certification) and, if possible, it is recommended that permanent labels be added to the inside of the luminaires specifying the lamp to be used. This would also be true for compact fluorescent luminaires using pin-based lamps where more than one wattage lamp can be used in the luminaires. For luminaires with medium screw base sockets, ASHRAE/IESNA Standard 90.1 is very clear that the maximum wattage on the luminaire label must be used, no matter what lamp is initially installed. For line voltage track lighting, 30W per linear foot is assumed, no matter what is installed. For low voltage track lighting, the wattage rating of the transformer is used.

Who is Qualified to Certify Compliance?

Per IRS Notice 2006-52, “A qualified individual (1) is not related to the taxpayer claiming the deduction, (2) is an engineer or contractor that is properly licensed in the jurisdiction where the

building is located, and (3) has represented in writing to the taxpayer that he or she has the requisite qualifications to provide the certification.”

Certifications do not need to be sent in with the tax return, but must be held in the taxpayers’ files in case of audit.

Do I Need to Use an Approved

Software Program to Demonstrate

Compliance?

Per IRS Notice 2006-52, you must use an approved software program if you are dealing with all three building systems (the Whole Deduction Method) or if you use a fairly complex alternate partial deduction method described in the notice. For lighting, if you abide by the Interim Rules (recommended), you do not have to use an approved software program. For those who are interested in finding a list of approved software, go to http://www.eere.energy.gov/buildings/info/tax_credit_2006.html.

What Certification Information Should be Included by the Certifier?

- Name, address & telephone number of the qualified person
- Address of the building
- Prescribed statement for energy efficient lighting property that satisfies the requirements of the rules
- Statement that reduced energy has been determined under the IRS rules
- Statement that field inspections were conducted and that the building has – or will –

meet the energy saving targets contained in the plans and specifications

- Statement that the building owner has received an explanation of the energy efficiency features of the building and projected annual energy costs
- Statement that qualified computer software was used, if applicable
- List of components of the interior lighting system installed in the building
- Prescribed statement declaring the certifier believes the facts presented to be true, correct and complete

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8 *The Impact of EAct 2005*

The National Electrical Manufacturers Association (NEMA) has issued guidelines for certification documents. To find these guidelines, please go to <http://www.nema.org/gov/efficientbuildings>.

The National Renewable Energy Laboratory (NREL), at the direction of the Federal Treasury Department, has issued guidelines for modeling and inspection of commercial buildings for the EAct 2005 tax deductions. These guidelines can be found at <http://www.nrel.gov/docs/fy07osti/40228.pdf>.

Remember, tax deduction rules are very complex, especially where depreciable property is concerned. We recommend that building owners consult a tax expert.

This is a tax deduction provision, not a tax credit. Tax deductions are applied to reduce taxable income, whereas tax credits are applied to reduce the amount of tax.

Energy rebates from your local utility may be

applied and will further accelerate the payback from the energy efficiency measures undertaken.

Why Lighting Upgrades

Are Worthwhile Investments

Lighting can account for as much as 40% of a building's entire annual electricity bill. And if a facility's lighting systems are outdated the impact can be even greater. Lighting upgrades represent a fast and simple way to reap the tax deductions offered by EAct 2005. Combine the tax breaks with lower utility bills and it's easy to see how lighting improvements can yield a great return on your investment. From the global sustainability point of view, NEMA estimates that the potential energy savings for lighting alone is about 312 Megawatts of electricity over the original two year provision (2006 & 2007), resulting in the elimination of about 6 billion pounds of CO2 emissions from the atmosphere. With the provision extended for a third year (2008), the savings is expected to grow by 50%

LIMELUMI TM Has Answers

As the greenest lighting solutions provider in North America we can provide you with [Lumiluxe tm](#) all the resources you need to understand the details and provisions of EAct 2005 and take advantage of the tax incentives for lighting.

Expertise

We are a lighting company run by energy conscious professionals. From our experienced Industrial Commercial sales and National Account representatives, to our Commercial Lighting Engineers,

we have the expertise to help you understand EPC and the products to help you get a tax deduction for your next energy efficient lighting upgrade.

Our LimeLumi™ Repnet can offer highly knowledgeable lighting design consultants and project managers who will work side-by-side with your construction team to provide a host of turnkey audit and maintenance solutions to ensure that your lighting system meets EPC standards and operates in the most energy-efficient way.

As a wholly owned subsidiary of VisionaryEarth, [LimeLumi™](#) Lighting Services realizes the importance of doing business with an environmentally friendly focus. LimeLumi takes great pride in recycling fluorescent lamps at the end of life, sending our removed lamps to local recycling facilities