



## Energy Act Extension

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On October 3, 2008 The Energy Policy Act of 2005 was extended to December 31, 2012. The Energy Policy Act of 2005 established a corporate tax deduction for energy efficient commercial buildings applicable to qualifying systems and buildings placed in service within these dates.

A tax deduction of \$0.30 to \$1.80 per square foot is available to owners of new or existing buildings who install interior lighting, building envelope, or heating, cooling, ventilation, or hot water systems that reduce the building's total energy and power cost by 50% or more in comparison to a building meeting minimum requirements set by ASHRAE Standard 90.1-2001. Energy savings must be calculated using qualified computer software approved by the IRS. (*See below for a list of approved software.*)

Eligible efficiency technologies include (see DoE or IRS for complete list): Equipment Insulation, Water Heaters, Lighting, Lighting Controls/Sensors, Chillers, Furnaces, Boilers, Heat pumps, Air conditioners, CHP/Cogeneration, Caulking/Weather-stripping, Duct/Air sealing, Building Insulation, Windows, Doors, Siding, Roofs

The following is a list of frequently asked questions (RFQs) prepared by the Commercial Building Tax Deduction Coalition.

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How should a taxpayer claim the section 179D deduction relating to energy efficient commercial buildings?

There is no special form to claim the deduction. The IRS instructions to business forms (e.g., Form 1120 for corporations, Form 1120-S for S corporations, and Form 1065 for partnerships) indicate that the taxpayer should include the amount of the deduction in the amount in the "Other deductions" line of the tax return. A statement listing the types and amounts of "other deductions" should be attached to the return. In addition, it is important that a taxpayer obtain and retain the necessary certifications and documentation to claim the deduction (see, IRS Notice 2006-52 for these requirements).

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What types of buildings will qualify? What types of expenditures will qualify?

Section 1331 of H.R. 6 provides that energy-efficient commercial building property is defined as property that is:

Installed on or in any building located in the United States that is within the scope of Standard 90.1-2001, Energy Standard for Buildings Except Low-Rise Residential Buildings, of the American Society of Heating, Refrigerating, and Air Conditioning Engineers and the Illuminating Engineering Society of North America;

Installed as part of (i) the interior lighting systems, (ii) the heating, cooling, ventilation, and hot water systems, or (iii) the building envelope; and

Certified as being installed as part of a plan designed to reduce the total annual energy and power costs of interior lighting systems, heating, cooling, ventilation, and hot water systems of the building by 50 percent or more when compared to a reference building, which meets the minimum requirements of Standard 90.1-2001 (which came into effect on April 2, 2003).

What is the tax deduction amount?

The deduction is equal to energy-efficient commercial building property expenditures made by the taxpayer, subject to a cap. The deduction is limited to an amount equal to \$1.80 per square foot of the property for which such expenditures are made. The deduction is allowed in the year in which the property is placed in service. For tax purposes, "placed in service" generally means the time at which the property is ready for its intended use.

Are there certification requirements and if so, what are they?

Certain certification requirements must be met in order to qualify for the deduction. The secretary of treasury, in consultation with the secretary of energy, promulgated guidance on June 2, 2006 in Notice 2006-52 that describes methods of calculating and verifying energy and power costs, using qualified computer software based on the provisions of the 2005 California Nonresidential Alternative Calculation Method Approval Manual or, in the case of residential property, the 2005 California Residential Alternative Calculation Method Approval Manual.

How will calculation design methods impact various technologies?

The intention is that the calculation be fuel neutral: the same energy efficiency features qualify a building for the deduction, regardless of whether the heating source is a gas or oil furnace, or boiler or and electric heat pump.

In addition, the calculation methods are to provide appropriate calculated energy savings for design methods and technologies not otherwise credited in either Standard 90.1-2001 or in the 2005 California Nonresidential Alternative Calculation Method Approval Manual, including the following:

- Natural ventilation;
- Evaporative cooling;

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- Automatic lighting controls such as occupancy sensors, photocells, and timeclocks;
- Daylighting;
- Designs utilizing semi-conditioned spaces that maintain adequate comfort conditions without air conditioning or without heating;
- Improved fan system efficiency, including reductions in static pressure;
- Advanced unloading mechanisms for mechanical cooling, such as multiple or variable speed compressors;
- On-site generation of electricity, including combined heat and power systems, fuel cells, and renewable energy generation such as solar energy; or
- Wiring with lower energy losses than wiring satisfying Standard 90.1-2001 requirements for building power distribution systems.

The calculation methods may take into account the extent of commissioning (the initial operability of a system) in the building, and allow the taxpayer to take into account the amount of system performance that may exceed typical performance. IRS issued guidance on March 12, 2008 regarding these energy savings technologies.

*Will there be inspections of buildings to determine compliance? Who will do them?*

IRS Notice 2006-52 requires inspectors to be engineers or contractors licensed in the jurisdictions where the building is sited. Inspections must meet guidelines of the National Renewable Engineering Laboratory.

*Do public buildings qualify for this tax deduction?*

For energy-efficient commercial building property expenditures made by a public entity, such as public schools, the IRS issued guidance on March 12, 2008 that allows the deduction to be allocated to the person primarily responsible for designing the property in lieu of the public entity.

*Are partial deductions allowed for building subsystems instead of a whole building deduction?*

In the case of a building that does not meet the whole building requirement of a 50 percent energy savings, a partial deduction is allowed with respect to each separate building system that comprises energy-efficient property and which is certified by a qualified professional as meeting or exceeding the applicable system savings targets established by the secretary of the easury.

The applicable system savings targets to be established by the secretary are those that would result in a total annual energy savings of 50 percent for the whole building, if each of the separate systems met the system target; note that the maximum allowable deduction is \$0.60 per square foot. The separate building systems are the:

- Interior lighting system;
- Heating, cooling, ventilation, and hot water systems; and
- Building envelope.

IRS modified the June 2006 targets on March 2008. The new subsystem targets are 20% interior lighting, 20% HVAC & hot water, and 10% building envelope.

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What are the prescriptive rules for lighting projects?

Building owners are encouraged under the law to focus first on lighting systems for two reasons: first, their ease and availability of upgrading, and second, the known achievements in energy efficiency that will be gained. In the case of a lighting system (including the retrofit of an existing system), the system energy savings target for the lighting system is deemed to be met by a reduction in lighting power density of 40 percent (50 percent in the case of a warehouse) of the minimum requirements in Table 9.3.1.1 or Table 9.3.1.2 of ASHRAE/IESNA Standard 90.1-2001 (as in effect on April 2, 2003).

In the case of a lighting system that reduces lighting power density by 25 percent, a partial deduction of \$0.30 per square foot is allowed. A pro-rated partial deduction is allowed in the case of a lighting system that reduces lighting power density between 25 and 40 percent. Certain lighting level and lighting control requirements must also be met in order to qualify for the partial interim lighting deductions.

What is the effective date for taking advantage of this tax deduction?

The provision is effective for property placed in service after December 31, 2005, and prior to January 1, 2014.

After the deduction is taken how is the remaining asset value handled?

As stated in the provision, the basis of the property is reduced by the deduction amount and the remaining asset value is depreciated over its tax life for the class of property.

Are garages eligible for the deduction?

Yes, parking garages are a space type covered by ASHRAE 90.1. In March 2008, IRS also added 'unconditioned garages' as eligible.

Are churches eligible for the deduction?

No. Although religious buildings are in 90.1 and they don't pay taxes, they are not government buildings, so churches don't qualify.

If a building were designed to a newer building standard, wouldn't it already satisfy the conditions for the tax deduction?

Not likely. Although lighting power densities in, for example, ASHRAE 90.1-2004 are almost low enough to satisfy the interim lighting LPDs, the lighting controls requirements of the interim lighting provision go beyond those of 90.1-2004. During the development of the legislation care was taken to insure that "free riders" would be minimal.

What if a commercial building tenant performs a retrofit that would meet the energy savings, would they get the deduction? Is the deduction for privately owned buildings restricted to the owner or can a management company or a tenant in a leased space take advantage of the deduction? The tax deduction is to be given to the owner of the lighting system. Do you believe

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this enables ESCOs, if they own the lighting system until the end of their performance contracts, to claim the tax deduction for themselves as the legal owner of the lighting system? Could the building owner even do it legally if the ESCO is the owner under the performance contract?

Unfortunately, as in many matters of tax law, the question is not Necessarily clear. The person who gets the CBTD deduction is the person who owns the property for tax purposes. Although in many, if not most instances, a tenant improvement will revert to the landlord as the end of a lease, the property is not necessarily owned by the landlord for tax purposes. It is a question of fact and the determination depends on the arrangements between the parties. If the tenant pays for the investment, constructs it according to its owns specs, and there are no concessions in the lease or from the landlord, it is likely that the tenant will be the owner of the improvements for tax purposes and eligible to claim the CBTD deduction.

Fortunately, this is a question that arose under the tax law before the enactment of the CBTD. In the case of tenant improvements, the tenant and landlord would have to determine who is the tax owner for purposes of claiming depreciation deductions in nay event. The CBTD does not change that determination. The CBTD simply provides a more beneficial deduction that that normally provided by depreciation.

The analysis is the same regarding improvements in government buildings. If the contractor is the owner for tax purposes, it can claim the CBTD. Whether a private person can be an owner of property with respect to a government building under the applicable local law is a factor that would have to be taken into account in determining who is the owner for tax purposes.

Does the accelerated tax deduction cover the complete cost of the lighting, including installation labor, or does it only include the cost of purchasing the equipment? What are the components of the "cost" that can be written off?

It includes anything that can be capitalized, including labor.

Are recycling costs deductible?

Any cost that may be capitalized may be considered for the deduction.

Can portions of buildings be retrofitted and still qualify for a deduction; for example; the common area versus tenant spaces; or a portion of the common area?

Portions can be retrofitted and the associated square footage areas considered.

If a building is used as both a warehouse and manufacturing facility, ASHRAE/IES 90.1 appears to allow the building area method to be used separately for the warehouse portion and the manufacturing facility portion. Is it then the case that the tax deduction would be calculated separately for both areas of the building if the building area method is used-50% savings and \$0.60/sq.ft. for the warehouse, and 25-40% savings and \$0.30-\$0.60/sq.ft. for the manufacturing facility?

The building areas could be addressed separately, as suggested.

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Are exit signs included in the program; and if so; can they be retrofits versus new signs?

No, ASHRAE 90.1-2001 does not allow exit signs to be considered in the lighting power allowance determinations.

Are screw in compact fluorescent lamps included; and if so; is there any requirement for permanence?

No, screw in CFLs could not be used to reduce wattage for purposes of the deduction. The ASHRAE 90.1-2001 lighting power calculations require that the maximum labeled wattage of incandescent luminaire be used.

Is there a criterion for what type of lighting systems qualify for the partial tax deduction? For example, in a manufacturing facility, would task lighting upgrades qualify if the LPD is reduced by enough to obtain the deduction? Or is the deduction for ceiling lighting system upgrades?

The legislation does not specify lighting technology for the tax deduction. The applicability of task lighting would typically turn on the question of whether it is "permanently installed". ASHRAE 90.1-2001 defines "permanently installed" as "equipment that is fixed in place and is not portable or movable" . To be considered, then, the task lighting would need to satisfy this definition.

The math involved in calculating the tax deduction may result in a value between \$0.30 and \$0.60 that is a fraction with multiple decimal places, such as \$0.4287/sq.ft. Will there be a regulation regarding rounding, or will the exact numbers be applied (e.g., \$0.4287 x 1000 sq.ft. is \$428.70, while \$0.43 x 1000 sq.ft. is \$430.00)?

A There probably will be no mention of rounding in the regulations.

Is it the case that per ASHRAE/IES 90.1 the maximum possible wattage for the fixture will be applied?

The luminaire wattage to be used in the power calculation depends on the type of lighting technology (see ASHRAE 90.1-2001 Section 9.2.5). Please consult lighting designers and manufacturers as to what wattage would be appropriate for "lamp/auxiliary" combinations.

The warehouse requirement of 50% savings appears strict. What technology candidates can be used to achieve the deduction? What was the thinking behind setting a 50% goal instead of a 25-40% goal?

An assessment of actual buildings indicated that 50% below ASHRAE 90.1-2001 is not so difficult to achieve for warehouses. Consequently the 25-40% sliding scale was not permitted to reduce the potential for "free riders"--those who would qualify for the deduction without any action.

The requirement for bi-level switching is not in ASHRAE/IES 90.1. What was the thinking behind including it in most building space types? What typical savings can be achieved through

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bi-level switching? Or was the thinking more of requiring a basic infrastructure so that advanced controls are more attractive for installation and can be used to generate higher savings?

Bi-level switching was included so that the lighting-only interim provision would result in a 50% below ASHRAE 90.1-2001 overall energy reduction for a typical building application. Bi-level switching is projected to typically reduce lighting power input by 10-15% on an annual basis. The reduced lighting power input would also reduce HVAC load for most building types. Bi-level switching would also provide some controls for all retrofits (See ASHRAE 90.1-2001 about "lighting alterations" controls requirements).

Is bi-level switching required for the interim lighting provision?

Yes, as stated in the legislation, bi-level switching is required for the interim provision. It is not required, but may be used in the whole building approach as a means to reduce energy use in the annual cost calculation needed for compliance with the provision.

I have seen several different definitions of bi-level switching, for example in California and New York rules. What is the definition?

Some state regulations define bi-level switching in a particular way for their own jurisdictions. These are specific applications of a more general approach. Bilevel 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. Of course, besides satisfying the tax deduction requirements, an installation would also have to satisfy whatever the regulations are for the jurisdiction, which may, but typically don't, require bi-level switching.

For the purposes of the tax deduction, what luminaire wattage do I assume for the watts per square foot calculation?

The interpretation from ASHRAE is as follows:

"The intent of section 9.1.4 (b) in ASHRAE/IESNA 90.1-2004 is to ensure that the calculation of wattage for lighting compliance includes ballast and/or transformer energy for the lighting equipment that is to be installed and used. If the actual equipment to be installed and used is not known or specified, then the maximum lamp/auxiliary combination becomes the basis for wattage calculation. However, it was never the intent of the requirement that installed lamp/auxiliary combinations drawing lower wattage than the maximum should be penalized at the maximum value. Therefore, similar to the language included for screw-based socket luminaires in 9.1.4 (a), the "maximum labeled wattage" (lamp/auxiliary combination for the maximum lamp wattage allowed by the label) of a luminaire could be used for wattage calculation of luminaires with permanently installed or remote ballasts or transformers.

Note1: a change to the standard for the 2007 version will add this additional language to 9.1.4 (b)

Note2: This informal interpretation also applies to the 1999 and 2001 versions of the standard."

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## Qualified Software for Calculating Commercial Building Tax Deductions

Visit the *IRS* or *DOE* for complete and updated information.

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Here is a list of qualified computer software for calculating commercial building energy and power cost savings that meet federal tax incentive requirements. The following software satisfies the requirements under Internal Revenue Service (IRS) Code §179D (c)(1) and (d) Regulations, Notice 2006-52 Section 6, dated June 2, 2006 as amplified by Notice 2008-40, Section 4. See the IRS requirements document for each version of software for details.

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EnergyPlus - Simulate and model energy flows in buildings, including heating, cooling, lighting, and ventilating. Version 2.2.0.023

DOE-2.1E - Calculate whole building energy performance and life-cycle operation costs. Version 119

DOE-2.1E-JJH- Calculate whole building energy performance and life-cycle operation costs. Version 130

EnergyGauge Summit - Calculate qualifications for commercial building federal tax deductions, energy code compliance, and LEED building energy performance. Version 3.14, Version 3.13, Version 3.11, Version 3.1

EnergyPlus - Simulate and model energy flows in buildings, including heating, cooling, lighting, and ventilating. Version 2.1.0.023, Version 2.0.0.025, Version 1.4.0.025, Version 1.3.0.018

EnerSim - Simulate the potential energy savings of new refrigeration and air-conditioning system technologies. Version 07.11.30

Green Building Studio - Combine CAD drawings with energy analysis to calculate energy efficiency and costs early in the design process. Version 3.1, Version 3.0

Hourly Analysis Program (HAP) - Simulate HVAC building loads and equipment operations to generate critical information for system design. Version 4.34 , Version 4.31

Owens Corning Commercial Energy Calculator (OC-CEC) - Demonstrate how performance improvements in metal buildings can result in tax deductions and estimate payback time for thermal efficiency measures. Version 1.1

TRACE 700 - Assess the economic and energy impacts of various building-related selections using ASHRAE-recommended algorithms. Version 6.1.2.0, Version 6.1.1.0, Version 6.1.0.0, Version 6.0.2.1

VisualDOE - Construct a model of a building's geometry using standard shapes, a built-in drawing tool, or imported DXF files with this graphical Windows interface to the DOE-2.1E energy simulation program. Version 4.1 build 0002

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