



Commercial Lighting Tax Deduction

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Introduction

According to the U.S. Department of Energy, lighting represents 40% of the average commercial building's electric bill, followed by motors/HVAC (40%) and other equipment (20%).



For years, energy-efficient lighting solutions have been available that can reduce lighting energy costs while maintaining or potentially improving lighting quality. According to the Energy Cost Savings Council, energy-efficient lighting projects generate an average 45% return on investment, paying for themselves in just 2.2 years. Due to energy codes and its economic advantages, energy-efficient lighting is now a common feature in new construction; lighting is generally considered the easiest, most profitable investment in



Indices

[EPAct 2005 \(Public Law 105-58\)](#)
(1.49 mb)

[Section 1331: Energy Efficient Commercial Buildings Tax Deduction](#) (56 kb)

[Internal Revenue Bulletin 2009-26, June 26, 2009](#)

[NEMA comments on IRB](#)

[Guidance on Energy Policy Act Commercial Building's Tax Deduction Certification Letters](#) (84 kb) (56 kb)

[EfficientBuildings.org](#)



energy-saving building systems.

According to the Department of Energy, however, only 20% of existing commercial buildings feature some degree of upgraded lighting technology, while 80% continue to operate lighting systems installed before 1986. The reason typically given is initial cost of changing out an older lighting system and replacing it with a newer one. Energy-efficient lighting typically costs more to purchase and necessitates skilled labor for its installation.

The Energy Efficient Commercial Buildings Tax Deduction was created to enhance the financial attractiveness of investment in the most energy-efficient lighting and other building technologies.

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THE ENERGY EFFICIENT COMMERCIAL BUILDINGS TAX DEDUCTION

The Energy Efficient Commercial Buildings Tax Deduction (CBTD) is a special financial incentive created by the [Energy Policy Act of 2005](#) and designed to reduce the initial cost of investing in energy-efficient lighting and other building systems via an accelerated tax deduction.

This special tax deduction allows building owners (or tenants) to write off the complete cost of upgrading a building's indoor lighting, HVAC/hot water and building envelope in the year the new equipment is placed in service, capped at \$1.80/sq.ft. Alternately, the owner (or tenant) could upgrade one of these three systems to earn the CBTD capped at \$0.60/sq.ft. In short, with the CBTD, the cost of new lighting or other building systems can be claimed in a single tax year instead of amortized over a period of years.

The CBTD expiration date has been extended twice, most recently by the Energy Independence Act of 2007 (EISA). With this extension, the CBTD can be claimed for qualifying projects completed before January 1, 2014.

Tax Deduction Versus Tax Credit

A tax deduction is a cost subtracted from adjusted gross income when calculating taxable income; tax liability is not reduced dollar for dollar, as is the case with a tax credit, but instead in proportion to the taxpayer's tax bracket.

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COMMERCIAL BUILDINGS TAX DEDUCTION (ALL SYSTEMS)

For projects completed before January 1, 2014, a CBTD can be claimed that covers up to the entire deductible cost of investing in the installation of energy-efficient commercial building property, capped at **\$1.80/sq.ft.:**



Indoor lighting systems **AND**



HVAC/hot water systems **AND**



Building envelope features

To qualify, [EPA Act 2005](#) and [IRS Notice 2006-52](#) state:

- the project must be certified to reduce total annual energy and power costs to at least 50% less than a Reference Building satisfying the requirements of ASHRAE/IESNA 90.1-2001 solely through changes to the building's lighting, HVAC/hot water and building envelope;
- the cost must otherwise be depreciable for tax purposes;
- the project must be part of a new construction or renovation project within the scope of ASHRAE/IESNA 90.1-2001 (including addenda 90.1a-2003—transformers, 90.1b-2002—building envelope, 90.1c-2002—ducts, 90.1-d-2002—slab-on-grade floor insulation, and 90.1k-2002—piping insulation, as in effect as of April 2, 2003); and
- the project must be located in the United States or its territories.

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COMMERCIAL BUILDINGS TAX DEDUCTION (PARTIAL SYSTEMS)

For projects completed before January 1, 2014, a CBTD can be claimed that covers up to the entire deductible cost of investing in the installation of energy-efficient commercial building property, capped at **\$0.60/sq.ft.:**



Indoor lighting systems **OR**



HVAC/hot water systems **OR**



Building envelope features

To qualify, [EPA Act 2005](#) and [IRS Notice 2006-52](#) state the project must be certified to reduce total annual energy and power costs to at least **10-20%** less than a Reference Building satisfying the requirements of [ASHRAE/IESNA 90.1-2001](#). These savings must be achieved solely through changes to one of the three qualifying building systems or features. [IRS Notice 2008-40](#) created a choice of two sets of savings targets:

Indoor lighting systems 16-2/3%	HVAC/hot water systems 16-2/3%	Building envelope features 16-2/3%
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OR

Indoor lighting systems 20%	HVAC/hot water systems 20%	Building envelope features 10%
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Note that a CBTD claimed under these rules is limited to the sum of the deductions allowable for any two qualifying systems.

In addition:

- the cost must otherwise be depreciable for tax purposes;
- the project must be part of a new construction or renovation project within the scope of [ASHRAE/IESNA 90.1-2001](#) (including addenda 90.1a-2003, 90.1b-2002, 90.1c-2002, 90.1d-2002 and 90.1k-2002 in effect as of April 2, 2003); and
- the project must be located in the United States or its territories.

COMMERCIAL BUILDINGS TAX DEDUCTION (“INTERIM LIGHTING RULE”)

For projects completed before January 1, 2014, a CBTD can be claimed that covers up to the entire deductible cost of investing in the installation of energy-efficient commercial building property:



Indoor lighting systems

The total amount that can be deducted is capped **at between \$0.30 and \$0.60/sq.ft on the below sliding scale based on a 25-40% reduction below the maximum allowable lighting power density (W/sq.ft.) in [ASHRAE/IESNA 90.1-2001](#):**

% 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

Unless the space is a **warehouse**, in which case the indoor lighting must achieve a **50%** reduction in lighting power density to achieve a maximum deduction of **\$0.60/sq.ft.**

To qualify, [EPA Act 2005](#) and [IRS Notice 2006-52](#) state:

- the project must be certified to reduce lighting power density by 25-40% less (50% if a warehouse) than the maximum allowable levels in [ASHRAE/IESNA 90.1-2001's Table 9.3.1.1](#) (Building Area Method) or Table 9.3.1.2 (Space by Space Method) (not including additional lighting power allowances);
- the project must be part of a new construction or renovation project within the scope of [ASHRAE/IESNA 90.1-2001— including retrofits](#);
- the cost must otherwise be depreciable for tax purposes; and
- the project must be located in the United States or its territories.

And:

- any new control devices installed as direct replacements of existing control devices must comply with the space control requirements in ASHRAE/IESNA 90.1 sections 9.2.1.2(a) and 9.2.1.2(c); an exception is made for alterations that replace less than 50% of the light fixtures in a space, which need not comply provided that the alterations do not increase the installed interior lighting power (be sure to carefully read the “lighting alterations” provisions in Section 4.1.2.2.5 as well as all of Section 9 of 90.1);
- bi-level switching must be installed in all occupancies except hotel and motel guest rooms, store rooms, restrooms, public lobbies and garages (garages were added by IRS Notice 2008-40); and
- the project must achieve minimum recommended calculated light levels as established in the [Ninth Edition of the IES Lighting Handbook](#).

Bi-level Switching Explained

[EPAAct 2005](#) does not define bi-level switching. NEMA defines it as manual or automatic control (or a combination thereof) that provides at least two levels of illumination and power in the space besides OFF, which can include the addition of controllable task lighting. The International Energy Conservation Code (IECC) defines it as a manual control allowing occupants to reduce connected lighting load in a “reasonably uniform illumination pattern by at least 50%.” Recognized methods include 1) controlling all lamps and fixtures (e.g., continuous or step dimming), 2) dual switching alternate rows, fixtures or lamps, 3) switching middle lamp independent of outer lamps in 3-lamp fixtures, providing three levels of lighting power, and 4) switching each fixture or each lamp. Be sure to check the appropriate local and state energy code, which may define what is accepted as bi-level switching.

When 90.1 Controls Are Required

In a new construction or renovation project within the scope of ASHRAE/IESNA 90.1-2001, the Standard's mandatory controls and circuiting requirements must be met (or local code if more stringent), such as automatic shutoff (new construction), space controls and tandem wiring. In a retrofit project, these requirements only apply if 90.1 would normally be applicable to the project. The Standard basically says if an existing lighting system is altered and this alteration involves replacement of 1) 50% or more of the existing light fixtures and 2) existing lighting controls, then 90.1's mandatory space controls requirements apply to the new lighting.

BUILDING TYPES COVERED

CBTD projects must be within the scope of [ASHRAE/IESNA 90.1-2001](#), which in turn applies to any building that is:

- wholly or partially enclosed within exterior walls (or within exterior and party walls) and a roof, providing shelter to people, animals or property; or
- is an unconditioned attached or detached garage space as referenced by Tables 9.3.1.1 and 9.3.1.2 of Standard 90.1-2001; and
- is not a single-family house, multifamily structures three stories or fewer above grade, or a manufactured house (mobile or modular home).



These buildings may include, but are not limited to, automotive facilities, convention centers, court houses, bars, cafeterias, fast food restaurants, family restaurants, dormitories, exercise centers, gyms, hospitals and other healthcare facilities, hotels and motels, libraries, manufacturing facilities and warehouses, workshops, motion picture theaters, multifamily buildings, museums, offices, parking garages, penitentiaries, performing arts theaters, police/fire stations, post offices, retail establishments, schools and universities, sports arenas, town halls and transportation facilities.

IRS Notice 2008-40 adds unconditioned attached or detached garage spaces to the list of space types qualifying for the CBTD under the Interim Lighting Rule, as long as it has walls and a roof and is not a single-family house, multifamily building with three or fewer stories above grade, or a manufactured house (mobile or modular home).

Note that while religious buildings are within the scope of 90.1, they do not qualify for the CBTD because religious

organizations are tax-exempt and their buildings are not owned by the public.

Portions of a Building

It is possible to upgrade only portions of a building to higher-efficient lighting, with the CBTD based solely on the square footage of the upgrade space. Meanwhile, if a building contains dedicated spaces that are classified differently under [ASHRAE/IESNA 90.1-2001](#)—such as a manufacturing facility attached to a warehouse—these spaces must be treated separately, per [ASHRAE/IESNA 90.1-2001](#).

WHO GETS THE CBTD



If the building is a privately owned building...

- Owner of the asset for tax purposes can claim the CBTD
- Typically the building owner, but may be the tenant(s) if a lease building and the tenant(s) pay for the upgrade; in this case, they would have to agree on who the owner is for tax purposes beforehand
- If two or more taxpayers install energy-efficient property



If the building is a publicly owned building...

- Person who creates the technical specifications for installation of the energy-efficient property can claim the CBTD, according to [IRS Notice 2008-40](#)
- If more than one designer is involved, the CBTD may be allocated by “owner” to designer primarily responsible for the design or among the designers

on or in the same building, the applicable total CBTD must be shared among the taxpayers

- In some projects involving ESCOs, the ESCO is the owner for tax purposes

Deducting What's Left Over

What if a project costs X but the CBTD only covers a portion of X? In this event, the remainder is deducted normally. So if a retrofit project in a 100,000-sq.ft. commercial office building costs \$100,000 and the cost is \$0.60/sq.ft., then \$60,000 could be the gross deduction in the tax year the new lighting is placed in service, while the remaining \$40,000 would be deducted normally—capitalized and amortized over time.

PROJECT CERTIFICATION: ALL OR PARTIAL SYSTEMS

The process of certification of projects applying for the complete or partial-system CBTD is outlined in [IRS Notice 2006-52](#).

To qualify for the CBTD, the project must be certified that it will reduce the building's total energy and power costs by a certain amount compared to a Reference Building. Only reductions caused by upgrading interior lighting, HVAC/hot water and building envelope can contribute to the CBTD; reductions in other energy uses, such as process loads, refrigeration and exterior lighting, do not count.

A Reference Building is a building located in the same climate zone and otherwise comparable to the taxpayer's building except its interior lighting, HVAC/hot water and building envelope meet the minimum requirements of [ASHRAE/IESNA 90.1-2001](#).

The energy performance of the Reference Building is determined using the Performance Rating Method in [Appendix G of ASHRAE/IESNA 90.1-2004](#) as well as additional requirements from the [2005 California Title 24 Nonresidential Alternative Calculation Method Approval Manual](#). These procedures have been automated in [several software programs recognized by the Department of Energy as being acceptable for CBTD projects](#). This analysis can be performed by any professional(s) that the owner would like to have perform it.

Once the energy analysis demonstrates the necessary reduction in energy and power costs, the project must be certified by an engineer or contractor who 1) is properly licensed in the jurisdiction where the building is located, 2) doesn't work for the taxpayer, and 3) has notified the taxpayer that he or she has the requisite qualifications to certify the project.

According to [IRS Notice 2006-52](#), the certification must contain contact information for the certifier, address for the taxpayer's building, and a statement that:

- the upgraded (or to be upgraded) building systems and/or features will reduce the building's total annual energy and power costs by the required percentage compared to a Reference Building that meets the minimum requirements of [ASHRAE/IESNA 90.1-2001](#);
- the amount of the reduction was determined under the rules of [IRS Notice 2006-52](#);
- field inspections of the building performed by the certifier have confirmed that the building has met or will meet its energy-saving targets, and that these inspections were performed in accordance with those procedures contained in the National Renewable Energy Laboratory's [Energy Savings Modeling and Inspection Guidelines for Commercial Building Federal Tax Deduction](#) that are in effect at the time of the certification;
- the building owner has received an explanation of the building's energy efficiency features and projected annual energy costs;
- qualified computer software was used to perform the required calculations;
- presents a list identifying the components of the interior lighting, HVAC/hot water and building envelope features installed on or in the building, those features that are energy-efficient, and their projected annual energy costs; and
- a declaration that the contents of the certification are "true, correct and complete."

NEMA has published a series of boilerplate certification letters [here](#).

While the taxpayer does not need to attach the certification to their tax return, they must by law keep sufficient records to demonstrate they are entitled to the CBTD and in the designated amount.

PROJECT CERTIFICATION: INTERIM LIGHTING RULE

The process of certification of projects applying for the CBTD under the Interim Lighting Rule is outlined in [IRS Notice 2008-40](#).

To qualify for the CBTD, the project must be certified to reduce interior lighting power density by 25-40% below the maximum allowances published in [ASHRAE/IESNA 90.1-2001](#), while meeting other requirements related to controls and light levels.

Note that although [IRS Notice 2006-52](#) says [qualified computer software](#) must be used to calculate energy and power consumption and costs, this is not needed to demonstrate compliance with the Interim Lighting Rule. Instead, a spreadsheet or similar software can be used to simply compare lighting power density for the Proposed Building versus [ASHRAE/IESNA 90.1-2001](#). This analysis can be performed by any professional(s) that the owner would like to have perform it.

Once a suitable reduction in lighting power density is demonstrated, the project must be certified by an engineer or contractor who 1) is properly licensed in the jurisdiction where the building is located, 2) doesn't work for the taxpayer, and 3) has notified the taxpayer that he or she has the requisite qualifications to certify the project.

According to [IRS Notice 2008-40](#), the certification must contain contact information for the certifier, address for the taxpayer's building, and a statement that:

- interior lighting systems have been, or are planned to be, incorporated into the building that meet all of the requirements of the Interim Lighting Rule (suitable reduction in lighting power
- field inspections were performed by a qualified individual after the lighting was placed in service in accordance with testing procedures prescribed in the National Renewable Energy Laboratory's [Energy Savings Modeling and Inspection Guidelines for Commercial Building Federal Tax Deduction](#) (see pages 1-2) and in effect at the time of the certification;
- the inspections confirmed the building is meeting the specified reduction in lighting power density.
- the building owner has received an explanation of the energy efficiency features of the building and projected power density;
- presents a list of energy-efficient lighting components and features of the building, along with projected power density; and
- a declaration that the contents of the certification are "true, correct and complete."

NEMA has published a series of boilerplate certification letters [here](#).

While the taxpayer does not need to attach the certification to their tax return, they must by law keep sufficient records to demonstrate they are entitled to the CBTD and in the designated amount.