

# Energy Tax Savers'

## EPAct and Tax Incentives Presentation



Energy Tax Savers  
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## Energy Policy Act of 2005 (EPAct)

- Extended through 12/31/13
- Benefits available from 1/1/06 thru 12/31/13
- Incentivized areas:
  - Lighting
  - HVAC
  - Building envelope
- Available for New Construction and Existing Buildings
- Also available for:
  - Tenant owned lease-hold improvements
  - Primary Designers of Government Buildings

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## Who's using EAct?

First Movers	Reasons
Retailers	<ul style="list-style-type: none"> <li>• Energy is a major operating cost</li> <li>• Centralized facilities' management</li> </ul>
Distribution Centers	<ul style="list-style-type: none"> <li>• Major growth market</li> <li>• High economic return</li> </ul>
Hotels	<ul style="list-style-type: none"> <li>• Meet ASHRAE 2004 = Full EAct</li> <li>• Bi-level not required in guest rooms</li> </ul>
Parking Garages	<ul style="list-style-type: none"> <li>• Large facilities drive large EAct benefits</li> </ul>
Industrial Facilities	<ul style="list-style-type: none"> <li>• Large facilities drive large EAct benefits</li> <li>• Existing lighting is being phased out by law</li> </ul>
Office Buildings	<ul style="list-style-type: none"> <li>• More states enact ASHRAE 2004 or higher building energy codes</li> </ul>

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## What's it Worth?

Sample Square Footage	Lighting		HVAC	Building Envelope	Total
	Minimum Deduction	Maximum Deduction	Maximum Deduction	Maximum Deduction	
50,000	\$ 15,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 90,000
100,000	\$ 30,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 180,000
250,000	\$ 75,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 450,000
500,000	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
750,000	\$ 225,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000
1,000,000	\$ 300,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 1,800,000

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## How do you Qualify?

- **Mechanics**
  - Deductions based on improvements over ASHRAE 90.1 2001
  - Energy efficient improvements must be depreciable assets
    - Converts 39 year depreciation to current deduction
  - Available for installations completed between 1/1/06 & 12/31/13
    - Can begin in prior years
  - Deduction amounts:
    - Lesser of total cost or:
      - \$1.80/sq.ft. Whole Building
      - \$0.60/sq.ft. Individual Systems
        - a. Lighting
        - b. HVAC
        - c. Building Envelope

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ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)  
HVAC (Heating, Ventilation & Air Conditioning)

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## 8 Ways to Capture Tax Deduction

- (1) Whole Building (\$1.80/ft<sup>2</sup>)
  - 50% Energy Cost Reduction below standard
- Permanent Rules partial deduction (\$0.60/ft<sup>2</sup>)

	Building Envelope	Lighting	HVAC
Alternative 1	(2) 16 <sup>2</sup> / <sub>3</sub> %	(3) 16 <sup>2</sup> / <sub>3</sub> %	(4) 16 <sup>2</sup> / <sub>3</sub> %
Alternative 2	(5) 10%	(6) 20%	(7) 20%

- (8) Interim Lighting Rules (\$0.30/ft<sup>2</sup>- \$0.60/ft<sup>2</sup>)
  - 25% to 40% prescribed Light Power Density (LPD) reduction below standard

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## Where are the Benefits

- Lighting, Lighting, Lighting
  - LED & Induction (Currently have >1,000 in process)
  - Lighting Controls
- Specific Types of HVAC
  - Geothermal
  - Thermal Storage
  - Central Chiller plants with small buildings(<150,000sq.ft.) in Campus
- LEED Buildings

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## Interim Lighting Rules

- Meet W/ft<sup>2</sup> targets
- Add'l Requirements
  - Bilevel Switching
  - Meet ASHRAE 90.1 Requirements
  - Meet IESNA minimum light levels

	2001 Standard LPD, W/ft <sup>2</sup>	25% Improvement	40% Improvement
Office	1.3	0.975	0.78
Manufacturing	2.2	1.65	1.32
School/Library	1.5	1.125	0.90
Retail	1.9	1.425	1.14
Warehouse	1.2	50% required, 0.60	

% Improvement	25%	26%	27%	28%	29%	30%	31%	32%	33%	34%	35%	36%	37%	38%	39%	40%
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

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LPD (Light Power Density)

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## Definition of Bi-Level Switching

- *A room, as defined by floor to ceiling walls, must have at least two light levels other than off.*
- This can be met in a number of different ways:
  - Dimming ballasts create an infinite number of light levels
  - 50% of lights in a room on one switch, 50% on another or 60/40, 70/30...
  - Occupancy controls on separate lighting circuits
  - Even lights on at least 2 separate circuit breakers would technically qualify
- Exceptions
  - Storerooms, Restrooms, Lobbies, Hotel & Motel Guestrooms, and Garages

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## Benefiting from ASHRAE 2004 & 2003 IECC

	2001 Std. (W/ft²)	25% Over 2001	40% Over 2001	2004 Std. (W/ft²)	2004 % over 2001	
Automotive Facility	1.5	1.125	0.9	0.9	40%	X
Convention Center	1.4	1.05	0.84	1.2	14%	
Court House	1.4	1.05	0.84	1.2	14%	
Bar Lounge/Leisure	1.5	1.125	0.9	1.3	13%	
Cafeteria/Fast Food	1.8	1.35	1.08	1.4	22%	
Family Dining	1.9	1.425	1.14	1.6	16%	
Exercise Center	1.4	1.05	0.84	1	29%	X
Gymnasium	1.7	1.275	1.02	1.1	35%	X
Health Care Clinic	1.6	1.2	0.96	1	38%	X
Hospital	1.6	1.2	0.96	1.2	25%	X
Hotel	1.7	1.275	1.02	1	41%	X
Library	1.5	1.125	0.9	1.3	13%	
Manufacturing	2.2	1.65	1.32	1.3	41%	X
Motel	2	1.5	1.2	1	50%	X

	2001 Std. (W/ft²)	25% Over 2001	40% Over 2001	2004 Std. (W/ft²)	2004 % over 2001	
Movie Theater	1.6	1.2	0.96	1.2	25%	X
Museum	1.6	1.2	0.96	1.1	31%	X
Office	1.3	0.975	0.78	1	23%	
Parking Garage	0.3	0.225	0.18	0.3	0%	
Theater	1.5	1.125	0.9	1.6	-7%	
Police/Fire Station	1.3	0.975	0.78	1	23%	
Post Office	1.6	1.2	0.96	1.1	31%	X
Retail	1.9	1.425	1.14	1.5	21%	
School/University	1.5	1.125	0.9	1.2	20%	
Sports Arena	1.5	1.125	0.9	1.1	27%	X
Town Hall	1.4	1.05	0.84	1.1	21%	
Transportation	1.2	0.9	0.72	1	17%	
Warehouse	1.2			0.8		
Workshop	1.7	1.275	1.02	1.4	18%	

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## Energy Codes & Code Compliance

- 35 states are now at codes stricter than ASHRAE 2001
- Lighting Bans
- Download COMcheck at:  
[http://www.energycodes.gov/comcheck/ez\\_download.stm](http://www.energycodes.gov/comcheck/ez_download.stm)

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## Major Lighting Bans

Lighting Type	Date Effective	
Most Probe Start Metal Halides	January 1, 2009	Manufacturing banned
T-12s <sup>1</sup>	July 1, 2010	Manufacturing banned Distribution now limited to ten per pack
Incandescents <sup>2</sup>	Beginning 2012-2014	Ban on current efficiency levels beginning 2012

<sup>1</sup> Residential is excluded from the ban, provided power factor is less than 0.90.

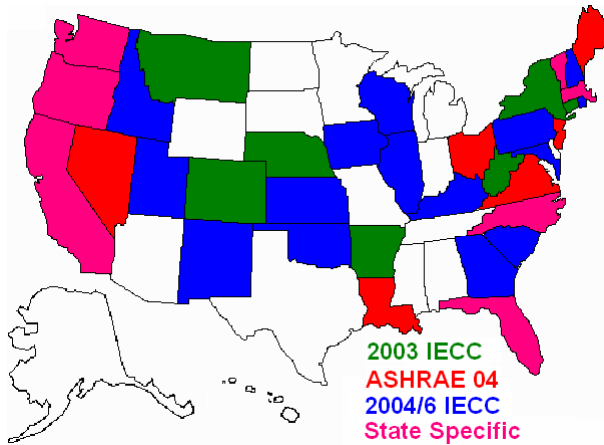
<sup>2</sup> Permissible replacements for incandescents include:

- 1) High efficiency incandescents
- 2) CFLs
- 3) LEDs

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## States with Stricter Lighting Standards than ASHRAE 90.1 2001



2003 IECC	
Arkansas	New York
Colorado	Montana
Connecticut	Nebraska
West Virginia	
2004/2006 IECC	
Illinois	New Hampshire
Rhode Island	Pennsylvania
Maryland	Kentucky
South Carolina	Georgia
Wisconsin	Kansas
Oklahoma	New Mexico
Utah	Idaho
Iowa	
ASHRAE 04	
Virginia	Louisiana
Maine	New Jersey
Ohio	Nevada
State Specific	
California	Oregon
Florida	Vermont
North Carolina	Washington
Massachusetts	

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## Lighting Retrofit Economics

- Energy Savings is usually the main driver
- In some states, Utilities offer Rebates for energy efficient lighting Installations
- Tax Savings is the newest opportunity
- Demand Response is another potential income stream
- Capitalizing on all the incentives can bring payback for projects to below 2 years and in some cases less than 1 year

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## Common Lighting Retrofits

### Industrial/Manufacturing/Warehouse

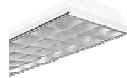


Metal Halide  
458 Watts

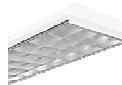


T5 HiBay Fluorescent  
234 Watts

### Office & Retail

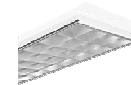


4 Lamp 4' T12  
Mag. Ballast  
144→164 Watts



3 Lamp 4' Super T-8  
Elec. Ballast  
72 Watts

Or



2 Lamp 4' Super T-8  
Elec. Ballast  
67 Watts

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## What Tends to Qualify on the HVAC side?

1. Geothermal (Ground Source Heat Pumps)
2. Thermal Storage
3. High Efficiency PTAC units in Rental Apartments/Hotels/Dorms
4. Centralized HVAC in Rental Apartments/Hotels/Dorms
5. Energy Recovery Ventilation
6. Demand Control Ventilation
7. Chillers in buildings < 150,000 sq ft
8. Blow through heaters in no AC Industrial Spaces
9. VAV (variable air volume devices) in buildings <75,000 sq ft
10. Chilled Beam
11. Magnetic Bearing Chillers
12. Gas fired chillers combined with electric chillers to peak shave

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## HEPAct-Heater EPAct Tax Deductions

- Many property owners are optimizing the energy and tax savings by purchasing Cambridge Heaters.
- The process for obtaining this incentive is to first install energy efficient lighting at the EPAct qualifying wattage level.
- The energy efficient lighting can be installed before the heater purchase or concurrently with the heater purchase.
- Typical Cambridge HEPAct tax deduction results:

Facility Size (sq. ft.)	HEPAct Deductions at EPAct lighting levels	HEPAct Deductions with very low watts (includes LED & induction)
50,000	\$ 60,000	\$ 90,000
100,000	\$ 120,000	\$ 180,000
200,000	\$ 240,000	\$ 360,000
500,000	\$ 600,000	\$ 900,000
1,000,000	\$1,200,000	\$1,800,000

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## Warehouse Heater & Efficient Lighting



Florida DC

Texas DC

New Jersey DC

New Jersey DC

Pennsylvania DC

Location	Sq.Ft.	W/sq.ft.	Heaters	\$/sq.ft.	Tax Deduction
Florida DC	642,219	0.69	3(1,850 MBH ea)	\$1.20/sq.ft.	\$770,663
Texas DC	701,250	0.40	20(400 MBH ea.)	\$1.80/sq.ft.	\$1,262,250
New Jersey DC	200,000	0.75	4(1,200 MBH ea)	\$1.20/sq.ft.	\$240,000
New Jersey DC	140,000	0.45	1(1,850 MBH) 1(1,600 MBH)	\$1.80/sq.ft.	\$252,000
Pennsylvania DC	61,067	0.61	2(1,200 MBH)	\$1.20/sq.ft.	\$73,280
Totals	1,744,536				\$2,598,193

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## Understanding Energy Models

- IRS has approved thirteen types of modeling software
  - eQUEST, Trane Trace 700, Energy Plus, Carrier HAP, VisualDOE, EnergyGauge, DOE2.2, DOE2.1E & 2.1E-JJH, Owens Corning Commercial Energy Calculator, Green Building Studio, EnerSim, IES <Virtual Environments>
  - other submissions are in process
- Important modern Energy management tool.
- Currently required for all HVAC and building envelope deductions and for whole building lighting alternative.
- In many jurisdictions, rebates are provided for all or substantial portions of modeling costs.

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## American Recovery and Reinvestment Act of 2009 Tax Credits & Grants in Lieu of Tax Credits

Specified Energy Property	Credit Termination Date	Applicable Percentage of Eligible Cost Basis
Large Wind	Jan 1, 2013	30%
Closed-Loop Biomass Facility	Jan 1, 2014	30%
Open-loop Biomass Facility	Jan 1, 2014	30%
Geothermal under IRC sec. 45	Jan 1, 2014	30%
Landfill Gas Facility	Jan 1, 2014	30%
Trash Facility	Jan 1, 2014	30%
Qualified Hydropower Facility	Jan 1, 2014	30%
Marine & Hydrokinetic	Jan 1, 2014	30%
Solar	Jan 1, 2017	30%
Geothermal under IRC sec. 48	Jan 1, 2017	10%*
Fuel Cells	Jan 1, 2017	30%**
Microturbines	Jan 1, 2017	10%***
Combined Heat & Power	Jan 1, 2017	10%
Small Wind	Jan 1, 2017	30%
Geothermal Heat Pumps	Jan 1, 2017	10%

\*Geothermal Property that meets the definitions of qualified property in both § 45 and § 48 is allowed either the 30% credit or the 10% credit but not both.

\*\* For fuel cell property the maximum amount of the payment may not exceed an amount equal to \$1,500 for each 0.5 kilowatt of capacity.

\*\*\* For microturbine property the maximum amount of the payment may not exceed an amount equal to \$200 for each kilowatt of capacity.

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## What does Energy Tax Savers Deliver?

- Pre-project EAct Marketing Material
- Complimentary Design Analysis
- Complimentary Tax Benefit Assessment
- Comprehensive EAct Tax Package
  - Energy Reduction Plan (ETSI Software)
  - Building Energy Model (ETSI Reviewed)
  - Tax Deduction Calculation (ETSI Software)
  - Owners Manual, highlighting energy savings
  - Design Certification (ETSI Document Creation and Review)
  - Post-Implementation Inspection (ETSI Document Creation and Review)
  - Audit Assistance

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# Office Facility Federal Tax Deduction Lighting Design Guidance

As part of the Energy Policy Act, the Federal government has provided substantial federal tax savings for upgrading to today's energy efficient Lighting and Lighting controls products effective January 1, 2006. To achieve tax deductions the watts per square foot in facilities have to be reduced by between 25% to 40% as compared to 2001 lighting standards.

Energy Tax Savers, Inc. has provided the following chart which you can use when discussing Lighting and lighting controls projects with outside architects, engineering firms and Lighting specifiers. The chart is designed to show when tax savings is applicable for typical spaces in an office facility.

## **Typical Spaces in a Office**

Description	25% Improvement as compared to 2001 Standard \$0.30/sq.ft. Deduction Watts/sq.ft.	40% Improvement as compared to 2001 Standard \$0.60/sq.ft. Deduction Watts/sq.ft.
Enclosed Office	1.125	0.90
Open Office	0.975	0.78
Training Room	1.200	0.96
Conference Room	1.125	0.90
Lobby	1.350	1.08
Restrooms	0.750	0.60
Food Prep	1.650	1.32
Dining	1.050	0.84
Electrical/Mechanical	0.975	0.78
Storage	0.825	0.66
Corridors	0.525	0.42

Note that these are tax deduction standards and you may have specific customer or operational needs that override the benefits of these tax deductions.

However, in most cases, adhering to the 2004 ASHRAE building code standards that are applicable in approximately 50% of the United States will trigger these tax deductions.

Please direct any questions you have on the new tax law standards to Energy Tax Savers at [www.Energytaxsavers.com](http://www.Energytaxsavers.com), [charles.goulding@energytaxsavers.com](mailto:charles.goulding@energytaxsavers.com), or 516 364 2630

# How LEED 2009 Expands EPAct Tax Savings Opportunities

*By Charles Goulding, Taylor Goulding and Amelia Aboff*

Charles Goulding, Taylor Goulding and Amelia Aboff discuss the changes to the LEED certification program. These changes make it probable that a LEED building will qualify for one or more EPAct (Energy Policy Act) Code Sec. 179D energy efficiency tax deductions.

**L**eadership in Energy and Environmental Design (LEED) is the fast-growing marquee standard for sustainable buildings. LEED is the certification system established by U.S. Green Building Council (USGBC). The four certification achievements start at the LEED certified level and proceed to the higher LEED silver, gold and platinum levels.<sup>1</sup>

On April 27th 2009, the new LEED 2009 system replaced the previous LEED rating point system for certifying LEED buildings.

The major differences with the new LEED system are

1. adjustment to the point system
2. weighted credits
3. regional bonus credits

**Figure 1.**

LEED Points for New Construction				
	Pre-2009 LEED		2009 LEED	
Sustainable Sites	14	22%	26	26%
Water Efficiency	5	8%	10	10%
Energy & Atmosphere	17	27%	35	35%
Materials & Resources	13	20%	14	14%
Indoor Environmental Quality	15	23%	15	15%
Innovation & Design	5	8%	6	6%
Additional Regional Bonus Credits	0	0%	4	4%

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Allocating a substantial increase in LEED points to energy measures is a practical change reflecting market conditions. This change makes it probable that a LEED building will qualify for one or more Energy Policy Act of 1992 (EPAct) Code Sec. 179D energy efficiency tax deductions.<sup>2</sup> The USGBC described the changes, stating "overall the changes increase the relative emphasis on the reduction of energy consumption and greenhouse gas emissions associated with the building systems, transportation, the embodied energy of water, the embodied energy of materials and where applicable the solid waste." Moreover, most buildings built in 2009 are required to comply with local building energy codes that are in most cases substantially higher than those applicable during most of the previous LEED system time period. It is important for tax purposes to realize that under both the prior and the new LEED systems, buildings must have supporting designed building energy efficiency computer software models.

**Figure 2.**

LEED Certification Points		
	Pre-2009 LEED	2009 LEED
Certified	26-32	40-49
Silver	33-38	50-59
Gold	39-59	60-79
Platinum	52-69	80 and above

## The Tax Opportunity

Code Sec. 179D, effective January 1, 2006 through December 31st 2013, provides an immediate tax deduction of up to \$1.80 per square foot for building

investments that achieve specified energy cost reductions beyond ASHRAE 90.1-2001 building energy code standards. LEED 2009 utilizes ASHRAE 90.1 2007 as its baseline, which is already an improvement over 2001. Therefore, projects that are LEED 2009 certified are naturally platformed for tax savings. A one-time \$1.80 per square foot deduction is the maximum tax deduction, but deductions of up to 60 cents per square foot are also available for three types of building systems: lighting, HVAC systems and the building envelope.

### **The Future of LEED Projects and Professionals**

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Since the USGBC's introduction of LEED in 2000, the rating system has become the national standard for green building certification; more than 21,200 LEED projects have been registered as of May 2009.<sup>3</sup> This number will undoubtedly increase even more quickly with the introduction of the more multifaceted LEED 2009 system, which includes not only the existing categories of LEED for New Construction, Existing Buildings, Operations and Maintenance, Core and Shell, Commercial Interiors, and Schools, but also new categories for Homes and Neighborhoods and Pilot Programs for Retail and Healthcare facilities. The anticipated increase in LEED Projects in the future will be met by the growing number of LEED Accredited Professionals. When the LEED AP credential was created in 2001, 527 professionals chose to pursue the accreditation; today, LEED APs number more than 114,000.<sup>4</sup> With the increasing amount of both LEED professionals and buildings, the potential for savings under the EPAct should also experience dramatic growth.

### **Regional Bonus Points**

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The establishment of regional bonus points is another practical change reflecting the major differences in regional environments. For example, in the northern U.S., energy efficient heating is important where in the south energy efficient cooling is crucial. In parts of the western U.S., water is a scarce resource. The performance of alternative energy measures such as solar, wind and geothermal are highly dependent on regional factors.

The new regional bonus mechanism is to be established by local USGBC chapters which for purposes of the bonus are to be determined by state and U.S.

possession designation. This may require some adjustments for national property owners with common building footprints that are striving for a standard LEED qualifying design.

### **Introduction of an ASHRAE Green Building Code**

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The American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) has been working diligently on proposed Standard 189.1, the nation's first Green Building energy code.<sup>5</sup> This legislation is intended to provide minimum criteria for green building practice with major emphasis on energy and water usage efficiency. The standard is applicable to new commercial buildings and major renovations. When completed this standard is expected to address energy efficiency, a buildings impact on the atmosphere, sustainable sites, water use efficiency, materials and resources, environmental quality, and other green building issues.<sup>6</sup>

When enacted in each participating state this new code will platform a much higher percentage of new building and major renovation projects for EPAct commercial building energy efficiency tax savings.

### **The LEED/EPAct Tax Deduction Modeling Interface**

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LEED buildings must be modeled and modeling is mandatory for achieving the \$1.80 maximum tax deduction, the HVAC and the building envelope tax deductions.

Since the building energy loads and the reference building standards are different for LEED and EPAct modeling, it is important to hire tax professionals familiar with the tax and engineering modeling conversion process. It is also important to use IRS-approved software for both LEED and the EPAct modeling iteration which will save time and allow a qualifying project to obtain tax savings. The current list of IRS approved software is shown in Figure 3.

### **The Government Building Designer Tax Incentive**

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Building designers including architects, engineers, lighting designers, design and build firms, and ESCOs (energy service companies) involved in LEED government building projects, including K-12 public schools, are also potentially eligible for the EPAct

Figure 3.

IRS Approved Modeling Softwares	
Energy Plus	Version 2.2.0.023 Version 2.1.0.023 Version 2.0.0.025 Version 1.4.0.025 Version 1.3.0.018
DOE-2.1E	Version 119
DOE-2.1E-JH	Version 130
EnergyGauge Summit	Version 3.14 Version 3.13 Version 3.11 Version 3.1
EnerSim	Version 07.11.30
Green Building Studio	Version 3.1 Version 3.0
Hourly Analysis Program (HAP)	Version 4.34 Version 4.31
Owens Corning Commercial Energy Calculator (OC-CEC)	Version 4.31
TRACE 700	Version 6.1.2.0 Version 6.1.1.0 Version 6.1.0.0. Version 6.0.2.1
VisualDOE	Version 4.1 build 0002

tax incentive. Many federal, state and local government agencies and school construction authorities require all government buildings to be built at a LEED certified level.

The Federal Building Green Building Policies list,<sup>7</sup> shown in Figure 4, illustrates some of the federal agency LEED building mandates.

## Conclusion

Tax professionals involved with LEED buildings should recognize that these projects are often eligible for substantial EPC Act tax savings. This is particularly the case for LEED platinum and gold buildings, all buildings that achieved LEED points through energy measures, and new LEED 2009 certified buildings.

Figure 4.

Federal Building Green Building Policies	
Agency	Requirements
Dept of Agriculture	New construction & major renovations: Required to achieve LEED Silver
Dept of Energy	New buildings \$5M or greater: Required to achieve LEED Gold
Dept of Health & Human Services	Projects with federal funds in excess of \$3M: Must achieve LEED certification or Green Gloves certification
Environmental Protection Agency	New buildings over 20,000 ft <sup>2</sup> : Must achieve LEED Gold
General Services Administration	Capital building projects: Must earn LEED Certified with a target of LEED Silver
National Aeronautics & Space Administration	New construction & major renovations: Required to meet LEED Silver, and strive to meet LEED Gold
U.S. Air Force	New construction & major renovations: Encouraged to meet LEED standards
U.S. Army	New vertical construction projects: Required to achieve LEED Silver
U.S. Navy	All projects: Required to meet LEED Certified

## ENDNOTES

- <sup>1</sup> Charles Goulding, Jacob Goldman and Nicole DeMarino, *LEED Building Tax Opportunities*, CORP. BUS. TAX'N MONTHLY, Jan. 2008, at 17-19.
- <sup>2</sup> Energy Policy Act of 1992 (P.L. 102-486).
- <sup>3</sup> U.S. Green Building Council, "About LEED," *U.S. Green Building Council Powerpoint*—May 2009.
- <sup>4</sup> U.S. Green Building Council, "About USGBC," *U.S. Green Building Council Powerpoint*—May 2009.
- <sup>5</sup> American Society of Heating, Refrigeration and Air Conditioning Engineers, *Proposed Standard for High-Performance Buildings*, (<http://ashrae.org>).
- <sup>6</sup> A public review draft may be examined at [www.ashrae.org/publicreviews](http://www.ashrae.org/publicreviews).
- <sup>7</sup> Nassau Academy of Law, "Legally Green: How to Make Green by Going Green," *Nassau Academy of Law Powerpoint*—May 4, 2009.



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**EPAct Tax Deductions for Parking Garage Lighting Projects Gain Wider Use**

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*In their third year, tax incentives available under EPAct — officially the Energy Policy Act of 2005 — are achieving wide use, particularly for energy-efficient lighting and lighting controls. LEED building projects are also increasingly taking advantage of EPAct tax incentives.*

*Parking garages in particular are one of the most popular EPAct categories. Parking garages make excellent EPAct candidates because lighting electrical use is the primary energy cost and large buildings drive large EPAct deductions.*

*EPAct provides an immediate tax deduction of up to \$1.80 per square foot for building investments that achieve specified energy cost reductions beyond the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2001 building energy code standards. A one-time \$1.80 per square foot deduction is the maximum tax deduction, but deductions of up to 60 cents per square foot are also available for three types of building systems: lighting, including lighting controls, HVAC, and the building envelope, which includes roof, walls, windows, doors and floor/foundation. Most parking garages are unconditioned spaces and will not qualify for HVAC and building envelope deductions.*

To obtain a tax deduction of 30 cents per square foot for lighting, the wattage must be reduced by 25 percent from ASHRAE 90.1-2001 levels. A maximum tax deduction of 60 cents per square foot requires a 40 percent reduction. To document the lighting electricity reduction and meet the EPAct requirements, the lighting project must have a spreadsheet to demonstrate that the project meets the EPAct watts-per-square-foot thresholds and meets seven other procedural requirements. A qualified lighting designer can assist in identifying and meeting these requirements and can provide the required documentation to your EPAct tax advisor.

Under current law, EPAct tax incentives are available for projects placed in service after Dec. 31, 2005 and before Jan. 1, 2009. Multiple bills currently before Congress propose to extend EPAct for one or more years

EPAct tax benefits for lighting have entered the mainstream because virtually all of the large lighting manufacturers and distributors are emphasizing the importance of the tax incentive with their sales proposals. The potential for an immediate EPAct tax deduction of 60 cents per square foot is a meaningful economic incentive for lighting projects, many of which range from 60 cents to \$2.00 per square foot in installed costs. The lighting market is enjoying sustained strength. Rising electricity costs, more rigorous state and local building energy codes, and improved lighting products are resulting in compelling economic paybacks, many times less than two years. As a result, it is easier for facility executives to win funding for energy-efficient lighting investments. Lighting specifiers are increasingly comfortable with the EPAct lighting requirements and know that they can meet them for most property categories. This confidence enables them to include EPAct tax benefits right in the initial lighting proposal. In fact, a lighting proposal without an EPAct tax benefit calculation is now unusual and hence somewhat suspect.

## **Parking Garages, Retailers and Warehouses Use EAct to Earn Lighting Savings**

Multi-level parking garages are a fast growing EAct category. In Notice 2008-40 issued March 7, 2008, the Internal Revenue Service made it clear that although parking garages are often unconditioned spaces they are eligible for EAct tax deductions. There are numerous parking garages in urban environments, and electricity for lighting is the primary building energy cost. The most common lighting retrofit is from metal halide lighting to fluorescent lighting fixtures where the energy savings alone are substantial. What's more, while electricity costs are rising, the price of these lighting systems is decreasing, making the investment even more attractive.

The largest category of commercial property owners capturing EAct benefits is national and regional retailers, for both stores and distribution centers. Most retailers manage from the center core and often have common or similar store layouts. Once they decide on an energy-saving initiative, they implement it across a wide section of their portfolio. Large retailers have felt the impact of the economic downturn, and many are curtailing new store construction programs and closing marginal stores. This is enabling these leaner retailers to focus their energy-cost-cutting initiatives on the retained stores.

For retail store buildings, the ASHRAE 90.1-2001 watts-per-square-foot standard is 1.9. However, for the room category of retail selling space, the ASHRAE 90.1-2001 standard is 2.1. This is an important advantage for retailers because it is easier to obtain higher tax deductions when using the latter standard. Many retailers are limiting existing store retrofits to the primary selling spaces.

Another category of EAct projects is warehouses — single- and multiple-building projects with individual facilities ranging from 10,000 square feet to more than 1,000,000 square feet. Distribution centers particularly benefit from EAct because the deductions are based on total square footage. The larger the space, the larger the incentive, and distribution centers are large facilities.

Warehouses are the only listed building category where there is no partial tax deduction below 60 cents per square foot, and the owner must achieve a 50- percent-watts-per-square-foot reduction from ASHRAE 90.1-2001. Because this is an all or nothing category it is crucial to review the lighting design in advance. EAct qualification will hinge on the fixture density of the design. Merely doing a one-for-one replacement of existing fixtures may not be sufficient.

In some cases, warehouse aisles are so narrow that the required lighting density makes it impossible to gain EAct tax benefits. Warehouse owners are increasing their use of occupancy sensors so that with seasonal product lines and slow moving inventory the lighting is kept totally off when sections of the warehouse are not in use. This is a very cost-effective way to gain substantial energy savings.

Industrial and manufacturing facilities are a third category of buildings that are taking advantage of EAct tax benefits. Again, these are large spaces where EAct tax incentives based on square footage become particularly lucrative. When multiple manufacturing plants are involved, the plant manager often has unilateral decision making authority for investments with two-year or less economic paybacks. The EAct tax incentive often drives payback below two years, making approval of lighting upgrades automatic. Again, replacing metal halide fixtures with fluorescent lighting is the most common project. The ASHRAE 90.1-2001 building standard for manufacturing facilities is 2.2 watts per square foot, and designing a 25 percent wattage reduction is fairly straightforward.

## **How EAct Works in LEED and Government Projects**

EAct contains a tax provision intended specifically to help the government sector save energy. The law provides an incentive to designers to incorporate today's energy efficient products into their designs for government buildings. In the beginning, the architecture and engineering community had a hard time grasping this incentive because it is the first building-design tax incentive ever offered in the Internal Revenue Code. As designers have learned about the incentive in continuing education programs, they have become eager to use it. "Government" includes federal, state and local governments, including K-12 public schools. Although virtually all government-building categories have benefited from this incentive, the most frequent uses are for K-12 public schools, state universities and colleges, and parking

garages. Other common categories include post offices, military bases, libraries, courthouses hospitals and airports.

Airports are an excellent example of the opportunity. The Table included in this article includes a Port Authority Airport project. A government Port Authority, obtains the energy savings from an energy efficient parking garage and the lighting designer obtains the EPAct tax incentive. The project not only improved light quality, it reduced operating costs and energy consumption offsetting 877 metric tons of green house gas emissions ([www.epa.gov/](http://www.epa.gov/)).

Leadership in Energy and Environmental Design (LEED) buildings are also increasingly taking advantage of EPAct tax benefits. LEED certification, the standard for best-of-breed sustainable buildings, requires compliance with ASHRAE 90.1-2004 building code standards, which are more rigorous than the 2001 version of the standard. This means that achieving LEED status should put the building well on the way to obtaining EPAct tax benefits.

The key with LEED projects is to use an IRS-approved modeling software for both the LEED and EPAct processes. The LEED model will use ASHRAE 2004 as a reference building and the EPAct model will use ASHRAE 2001 tax reference building criteria.

Some building owners have made the decision not to proceed with LEED certification based on incomplete economic payback information. It is important to have finance professionals familiar with utility rebates and EPAct tax deduction opportunities on the LEED evaluation committee. To the extent that the LEED project incorporates a high percentage of energy-efficient measures, the combined energy savings, rebate payments and tax savings can materially influence payback. Many jurisdictions are providing extra rebates, some at the six-figure level, for buildings that achieve LEED status.

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### GARAGE LIGHTING UPGRADE PROJECTS THAT QUALIFY FOR EPACT DEDUCTIONS

Project Type	Location	kWh Saved	Carbon Offset*	Annual Energy Savings	Utility Incentive	Project Cost	Available Tax Deduction
Airport	Northeast	1,127,412	877 MT CO <sub>2</sub>	\$135,825	\$135,825	\$366,548	\$230,723
University	Midwest	329,236	256 MT CO <sub>2</sub>	\$29,631	\$3,456	\$115,618	\$112,162
Commercial	Northeast	172,187	134 MT CO <sub>2</sub>	\$22,627	\$38,915	\$77,829	\$38,915
Municipality	Northeast	508,649	395 MT CO <sub>2</sub>	\$53,156	\$50,642	\$168,809	\$118,167

Projects List Courtesy of IntellEnergy

\*[www.epa.gov](http://www.epa.gov)