

Energy Tax Policy Act of 2005

Energy Tax Incentives

Discover Powerful, Yet,
Underutilized Tax-Saving
Strategies for Commercial and
Investment Properties



**Engineered
Tax Services**

Where Engineering and Accounting Come Together



New Paradigm

- You can have style and comfort
- Quality and Environmental Integrity
- Profit and Principles
- Greater product differentiation & appeal
- Lower long term operating costs
- Green is superior for you and your family





ENERGY POLICY ACT of 2005

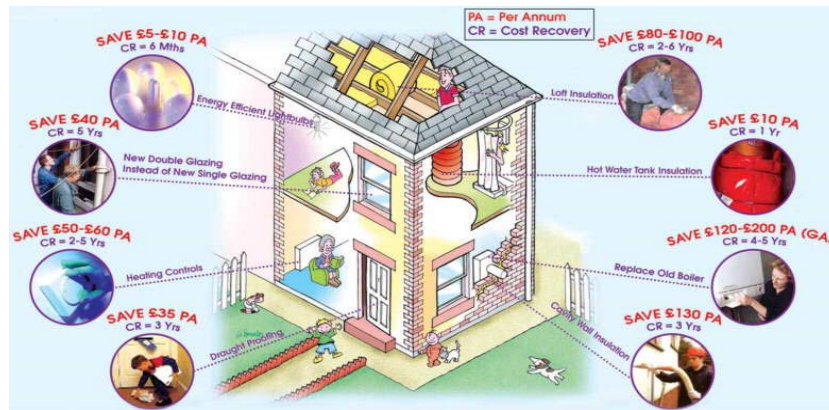
- Congress passed legislation in August of 2005 to encourage property owners to build energy efficient real estate properties to promote reduction in energy consumption. Service dates were from 1/1/06 through 12/31/08.
- The Emergency Economic Stabilization Act of 2008 (HR-1424), approved and signed on October 3, 2008, **extends the benefits of the Energy Policy Act of 2005 through December 31, 2013.**
- The ruling allows up to a \$1.80 per sq. ft. tax deduction for commercial property owners. Incentives were also allowed for contractors, site home builders and residential home owners.

Energy – 179 D Deduction

- IRB 2006-26 = NOTICE 2006-52
- DEDUCTION FOR ENERGY EFFICIENT COMMERCIAL BUILDINGS
 - Sets forth procedurally and administratively the requirements for § 179D(c) and (d)
 - Clarification of partial deduction
 - Reference Building
 - Certification
 - Qualified Person
 - Qualified Software
 - Definitions

IDEAL CANDIDATES

- New Construction – Schools, Office, Retail, Hospitality, Industrial, Multi-Family
- Retrofits – Energy Performance Contracting, CRA Redevelopment
- Green Buildings
- LEED CERTIFIED BUILDINGS



LEED BUILDINGS

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

- LEED Rating System:

NC = New Construction

EB = Existing Buildings

CI = Commercial Interiors

CS = Core & Shell

H = Homes

ND = Neighborhood Development

- LEED Categories:

CERTIFIED = 26 – 32 points

SILVER = 33 – 38 points

GOLD = 39 - 51 points

PLATINUM = 52 – 69 points

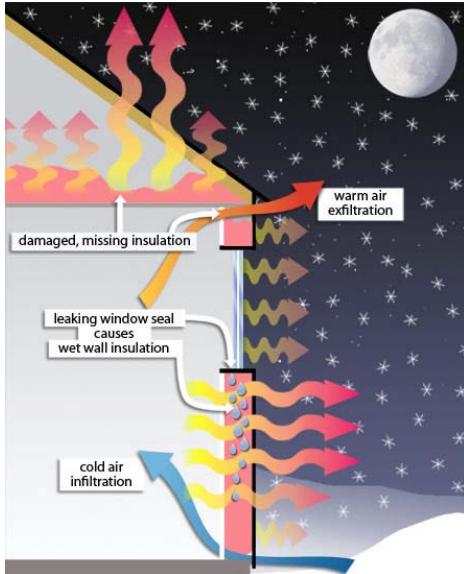
PROJECT TOTALS = 69 POSSIBLE POINTS

QUALIFYING WHOLE BUILDING

- Applies to improvements or new construction
- Up to \$1.80 per square foot - If you meet?
- Building must reduce total annual combined energy use by at least 50% (compared to similar building based on 2001 energy guidelines vs. energy actually designed into building.
- Deduction is eligible to anyone who funds the investment.



QUALIFYING PARTIAL BUILDING SYSTEMS



1. Interior Lighting Systems
2. Heating, Cooling, Ventilation & Hot Water
3. Building Envelope
4. New or Existing Building partial deduction of \$.40 \$.60/sq ft for upgrades to any one of the three major systems.

SUMMARY OF TAX DEDUCTIONS

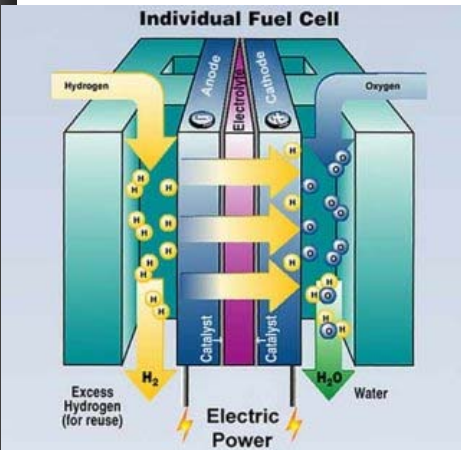
Table 1 Summary of Tax Deductions

	Fully Qualifying Property	Partially Qualifying Property			
		Envelope 10%	HVAC and SHW 20%	Lighting 20%	Interim Lighting Rule
Savings Requirements*	50% energy and power cost savings	16 $\frac{2}{3}$ % energy and power cost savings	16 $\frac{2}{3}$ % energy and power cost savings	16 $\frac{2}{3}$ % energy and power cost savings	25% lower LPD (50% for warehouses)
Tax Deduction	Cost of qualifying property up to \$1.80/ft ²	Cost of qualifying property up to \$0.60/ft ²	Cost of qualifying property up to \$0.60/ft ²	Cost of qualifying property up to \$0.60/ft ²	Cost of qualifying property up to \$0.60/ft ² times applicable percentage**

* Savings refer to the reduction in the energy and power costs of the combined energy for the interior lighting, HVAC, and SHW systems as compared to a reference building that meets the minimum requirements of Standard 90.1-2001.

** The tax deduction is prorated depending on the reduction in LPD. See IRS Notice 2006-52 for the definition of “applicable percentage.”

ENERGY TAX CREDITS



- Vary greatly by state, county & local government
- Federal incentives - install and qualify:

Fuel Cells = 30% credit

Stationary Micro turbine

Power Plants = 10% credit

Solar Equipment = 30% credit



Lighting Guidelines

Building Area Type Lighting Power Density (W/ft²) Minimum Reduction

		Tax Deduction (25%) Maximum Reduction	Tax Deduction (40%)
Automotive Facility	1.500	1.125	0.900
Convention Center	1.400	1.050	0.840
Hospital	1.600	1.200	0.960
Hotel	1.700	1.275	1.020
Office	1.300	0.975	0.780
Parking Garage	0.300	0.225	0.180
Retail	1.900	1.425	1.140
School/University	1.500	1.125	0.900
Sports Arena	1.500	1.125	0.900
Warehouse	* 1.200	0.600	0.600

- * Tax deduction of \$0.30 per sq. ft begins at power density 25% below ASHRAE/ IESNA 90.1 (2001) limit, and goes to \$0.60 per sq. ft. at 40% below ASHRAE/ IESNA limit. (Exception: Warehouses must get to 50% below limit and qualify for \$0.60 per sq. ft.)
- Other conditions include bi-level switching, automatic turn-off of lights for new buildings over 5000 sq. ft. and illumination levels satisfying minimum requirements for that space as spelled out in the IES Handbook, 9th edition (2000).

NON EFFICIENT LIGHTING

- **Incandescent:** CRI of 100 and CCT's between 2600-3000. Typically inefficient converting only about 10% of energy into light.
- **Halogen:** CRI 100. Wasted heat energy – not energy efficient.
- **Fluorescent:** Variety of CRI's from 62 to over 80 and CCT's of 2900 to 7000 ("T" stands for tubular)
 - Several models are used with frequency in retrofits because they are compatible with several ballasts.



EFFICIENT LIGHTING

Compact Fluorescent Lamps (CFL): Last up to 10 times longer than incandescent lamps, use about $\frac{1}{4}$ the energy and produce about 90% less heat. Excellent replacement for halogens and for retrofits.

High-Intensity Discharge Lamps (HID): Large amount of light in a small package compared to fluorescents and incandescent. Typically used when high levels of light are necessary over large areas and when efficiency and/or long life are desired. Gymnasiums, large public areas, warehouses.

Low-Pressure Sodium Lamps: The highest efficacy of all commercially available lighting sources – producing up to 180 lumens per watt. Emits a yellow light.

Solid-State Lighting: Create light without heat. Light –emitting diodes (LED's).



LIGHTING RULES DEFINED

- The lighting controls required under the Commercial Buildings Deduction rules are prerequisites—while they produce cost savings for the owner's benefit, they do not produce LPD savings that are required to qualify for the deduction.
- Bi-level switching requirement is required by the rules, but not Standard 90.1-2001. It's considered a simple control addition that can reduce power input by 10-15% on an annual basis.
 - Strategies include: split-ballasting to allow separate control of 50% of lamps or fixtures, bi-level ballasts, multiple-ballasts within one fixture (as in the case of compact fluorescent hi-bays), dimming ballasts, manual controls, dimmers or photo sensors.

Lumisys advocates specifying integrated lighting controls in the way that moves the expertise and accountability to those who are best positioned to be successful.

HVAC

The Department of Energy received comments from a group of nineteen significant stakeholders in response to the Advance Notice of Proposed Rulemaking for Commercial Unitary Air Conditioners and Heat Pumps. 69 FR 45460 (July 29, 2004). In summary, the Joint Stakeholders recommend minimum energy efficiency ratios (EERs) and coefficients of performance (COPs) for certain commercial unitary air conditioners and heat pumps, both split and package systems, respectively, as follows:

Air-Cooled Products

>65,000 - <135,000 Btu/h

>135,000 - <240,000 Btu/h

Efficiency Standards

11.2/11.0 EER for Air Conditioners

11.0/10.8 EER for Heat Pumps

3.3 COP @ 47°F for Heat Pumps

11.0/10.8 EER for Air Conditioners

10.6/10.4 EER for Heat Pumps

3.2 COP @ 47°F for Heat Pumps

BUILDING ENVELOPE

- Walls & Roofs, Insulation
- Climate Considerations
- Doors, Windows & Openings
- Thermal Efficiency
- Reflectivity
- Moisture Buildup



PUBLIC BUILDINGS & TAX DEDUCTIONS?

For energy-efficient commercial building property expenditures made by a public entity, such as public schools, the Secretary of the Treasury shall promulgate regulations that **allow the deduction to be allocated to the “person primarily” responsible for designing the property in lieu of the public entity.**

Sample Project

Sweetwater Creek Visitor Center

Completed: Summer 2006

Cost: \$1,534,393 or \$175/ft

Architect: Gerding Collaborative, LLC

Distinctions: LEED-NC Platinum;
One of only 20 LEED-NC Platinum
buildings in the world at the time of
certification & the first in the
southeastern U.S.

A building doesn't have to be LEED
to receive energy tax incentives.



Architectural Models of Visitor's Center

PAYBACK ANALYSIS

Year of Study	1	2	3	4	5
Cost of Upgrades	\$ 130,000.00		\$ 3,900.00	\$ 3,900.00	\$ 3,900.00
P/SF	\$ 3.25				
% of total	1.30%				
Cost savings w/ ES*	\$ 20,300.00				
Cost savings w/ CSS	\$ 185,000.00	\$ 216,608.00	\$ 132,210.00	\$ 86,068.00	\$ 80,931.00
Utility Savings (40%)	\$ 24,000.00	\$ 24,720.00	\$ 25,461.60	\$ 26,225.45	\$ 27,012.21
Less Study cost	\$ 15,000.00				
Totals Savings	\$ (84,300)	\$ (241,328.00)	\$ (153,771.60)	\$(108,393)	\$ (104,043)
ROI %	158%		4042%	2897%	2767%
Payback Time	0.6	0.0	0.0	0.0	0.0

Note: * Energy Saving of \$58,000 @ 35% federal tax rate

QUALIFYING TAX DEDUCTIONS

Submission of Plans and Energy Certificate Form

- Energy Certificate Form is required by each state which indicates the energy assets installed in a building. Form required to get building permit (also known as Form J)
- Step 1: Compare Lighting Schedule to 2001 Ashrae Standards. Are there efficiencies?
- Step 2: If yes in Step 1, compare Mechanical Schedule with detail of HVAC & Water Boiler System? Are there efficiencies?
- Step 3: If yes in Step 2, model simulation for whole building approach

FEASIBILITY ANALYSIS

- Once review of plans is complete – Prepare benefit analysis for building for owner/client to review
- If project does not qualify, make suggestions to owner/CPA as to what asset upgrades would be necessary to have the building have qualifications
- Review benefit which would include the following calculations:
 - Additional costs of upgrade assets
 - Monthly savings from reduction in energy
 - Tax deduction benefit
 - Fee for Certification and/or Energy Audit
 - Derive overall ROI

QUALIFYING PROCESS

- **Energy Tax Certification Requires:**
 - **Site Visit of property required by the IRS which is conducted by licensed state engineer.**
 - **Site visit would confirm asset schedule in plans which qualifies, is indeed assets installed on site.**



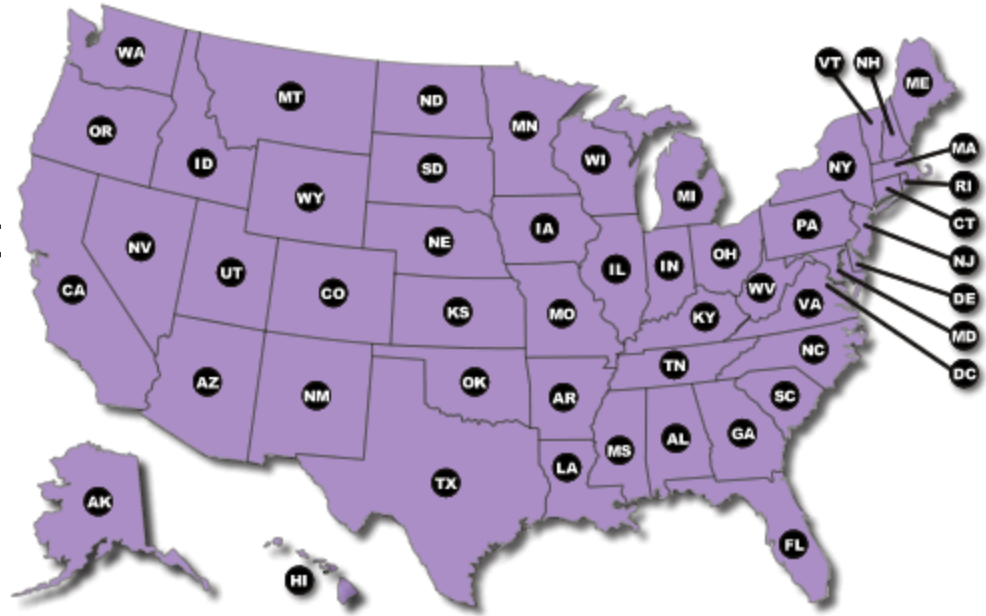
State Incentives Can Be Equal or Greater Than Federal Incentives

Federal Benefits Not Exclusive

- Important to know that energy incentives are coming online everyday.
- In addition to federal incentives, many states have tax and credit benefits, as well.
- Also, utility companies have incentives related to energy assets.
- Important to look at all incentives: Federal, State, Local Government and Utility Companies

Incentives

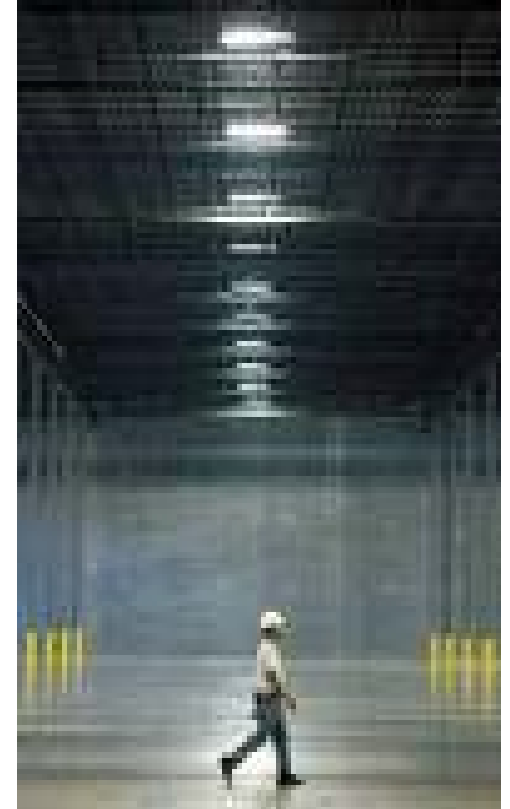
- Local utility rebates
- State tax rebates
- Loan programs
- Energy Policy Act



Visit www.dsireusa.org for a clickable map and a listing of all federal and state incentives for energy retrofits

THE OPPORTUNITIES !

- Retrofits will outpace new construction 5-1
- B&C property in A-class locations
- Energy performance contracting
- Zero-net energy for buildings
- Renewable energy – “off the grid”



Regulatory Imperative?



- 37 states representing 70% of US population are developing climate action plans.
- 13 states have set carbon reduction targets.
- 800 US Mayors, representing 85 million people have adopted the Kyoto Protocol.

- Sources: Newsweek, April 23, 2007; US Conference of Mayors,

Global Imperative

Australia suffers worst drought in 1,000 years

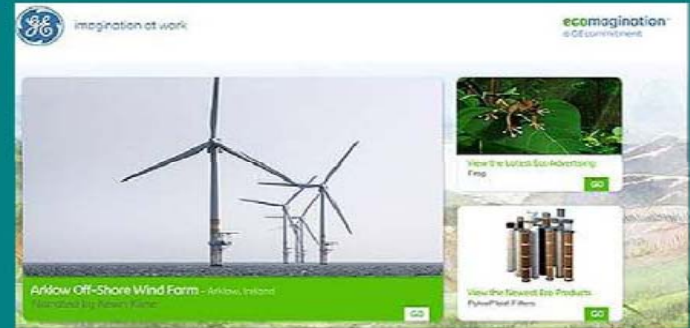


- Depleted reservoirs, failed crops and arid farmland spark global warming tussle
- 54% below the previous record minimum
- Lowest wheat crop for 12 years, a 62% decrease on last year
- “Howard out of step with public and scientific opinion”
- Source: The Times, London

Market Imperative?

- AIG
- Alcoa
- BP America
- Caterpillar
- ConocoPhillips
- Dow Chemical
- Duke Energy
- DuPont
- General Motors
- General Electric
- Johnson & Johnson
- Lehman Brothers
- Pepsi Co
- Pacific Gas & Electric

- All these companies and others have urged the federal government to cut green house gases by 60 to 80%.



“Over the past several years, we have actually made concerted efforts to maximize these & other tax benefits and have focused on precisely the opportunities you outlined below. I agree that these credits are very valuable and thankfully our CFO and the whole Toyota organization has been very supportive of our efforts”. **Toyota Motor Sales, USA, Inc.**

The vision:

Zero net energy for buildings

"A building has a long life cycle, so its effect on the environment is a long and continuing issue to consider."

NGO, China²



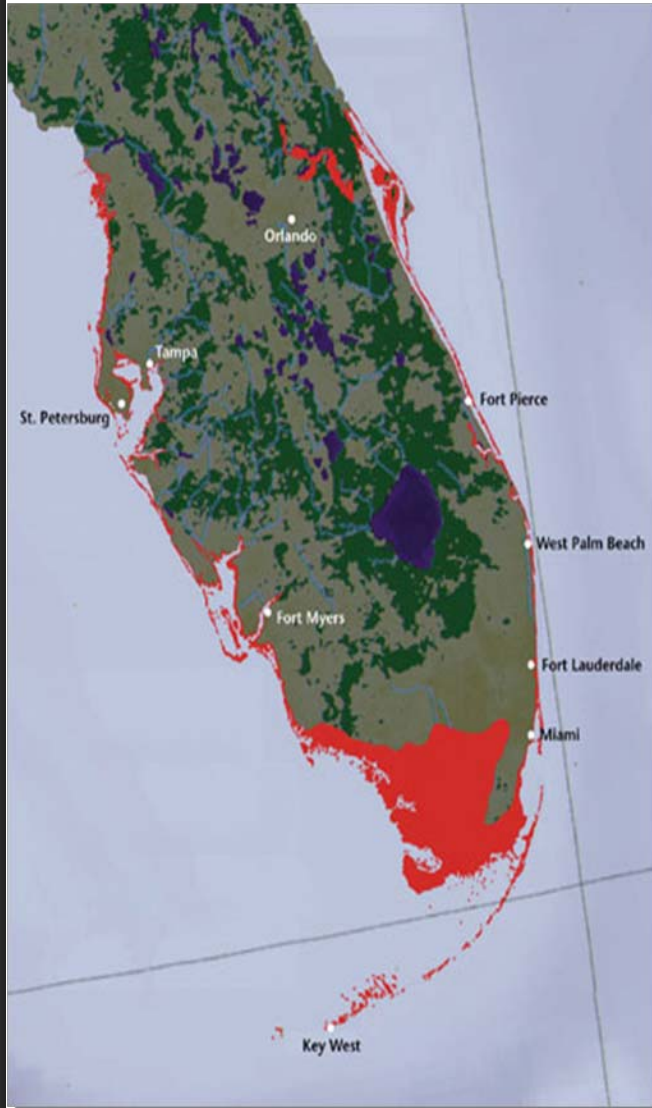
There are three main approaches to energy neutrality:

- **Cut buildings' energy demand**
by, for example, using insulation and equipment that is more energy efficient
- **Produce energy locally**
from renewable and otherwise wasted energy resources
- **Share energy**
create buildings that can generate surplus energy and feed it into an intelligent grid infrastructure

Efficiency gains in buildings are likely to provide the greatest energy reductions and in many cases will be the most economical option. A study by McKinsey³ estimated that demand reduction measures with no net cost could almost halve expected growth in global electricity demand.

The Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report estimates that by 2020 CO₂ emissions from building energy use can be reduced by 29% at no net cost.

What are the stakes?



About Engineered Tax Services

ETS marries the science of engineering with the principles of tax and accounting to arrive at financial solutions that result in increased cash flow, minimized tax payments and increased ROI.

These IRS sanctioned services include Cost Segregation Studies & Energy Tax Credits.

For more information, contact:

Lumisys Inquiries

1.800-320-0948, ext 703

[E-mail: info@engineerdtax.com](mailto:info@engineerdtax.com)

www.engineerdtax.com



Where Engineering and Accounting Come Together