Energy Tax Savers, Inc.

EPAct Presentation

Energy Tax Savers
Charles Goulding and Kenneth Wood
Charles.goulding@energytaxsavers.com

Topics

- **EPAct(Section 179D)**
  - Available for Energy Efficient Building Projects:
    - Lighting
    - HVAC
    - Building Envelope
- **Tax Credits & Cash Grants**
- **Massachusetts Rebates**

Charles.goulding@energytaxsavers.com

Energy 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

Charles.goulding@energytaxsavers.com

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
  - Residential apartment buildings 4 stories or more

Who's using EPAct?

First Movers	Reasons
Retailers	• Energy is a major operating cost • Centralized facilities' management
Distribution Centers	• Major growth market • High economic return
Hotels	• Meet ASHRAE 2004 = Full EPAct • Bi-level not required in guest rooms
Parking Garages	• Large facilities drive large EPAct benefits
Industrial Facilities	• Large facilities drive large EPAct benefits • Existing lighting is being phased out by law
Office Buildings	• More states enact ASHRAE 2004 or higher building energy codes
Car Dealerships	• Lots of inefficient lighting

What's it Worth?

Square Footage	Lighting Minimum Deduction $.30/sq. ft.	Lighting Maximum Deduction $.60/sq. ft.	HVAC Maximum Deduction $.60/sq. ft.	Building Envelope Maximum Deduction $.60/sq. ft.	Total Maximum $1.80/sq. ft.
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

Note: For government buildings, these deductions go to the primary designer.

Charles.goulding@energytaxsavers.com

Commercial Building Immediate Deductions

- Stimulus Package emphasizes Energy Efficiency in Government Buildings
- Architects/Engineers/Lighting Designers
  - DOE goal to incentivize green design in **government** building sector
    - Benefits passed through to the primary designer of:
      - Federal
        - offices, military bases, court houses, post office, labs etc.
      - State
        - offices, transportation facilities, state universities, court houses etc.
      - County, city, town, village etc
        - offices, schools, town halls, police, fire, libraries etc.

Charles.goulding@energytaxsavers.com

What's in it for Architects/Engineers/Lighting Designers?

- Growth in this EPAct area for government building designers is exploding
- Successful Design Niches:
  - K-12 Public Schools
  - State Universities and Colleges
  - Military Bases
  - Parking Garages
  - Airports

Charles.goulding@energytaxsavers.com

8 Ways to Capture Tax Deduction

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

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

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

Charles.goulding@energytaxsavers.com

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

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

Charles.goulding@energytaxsavers.com

Where are the Benefits

- Lighting, Lighting, Lighting
- Lighting Controls
- Specific Types of HVAC
  - Geothermal
  - Thermal Storage
  - Central Chiller plants with small buildings(<150,000sq.ft.) in Campus
- LEED Buildings

Charles.goulding@energytaxsavers.com

Interim Lighting Rules

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

	2001 Standard LPD, W/ft^2	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

LPD (Light Power Density)

Charles.goulding@energytaxsavers.com

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%	

Charles.goulding@energytaxsavers.com

New Construction Data Requirements

- Project general information
- Square footage
- Lighting projects
  - CAD drawings (.dwg or .dwf), Architectural & Electrical sets
  - Fixture schedule

Charles.goulding@energytaxsavers.com

Retrofit Lighting Data Requirements

- Project general information
- Square footage of each space
- Bi-level lighting confirmation
- Invoices (both material & labor)
- Fixture descriptions (model number, Lamp count, ballast type)
- Fixture count (new and retained)
- Foot candle of rooms

*most efficient for Energy Team to work with contractor

Charles.goulding@energytaxsavers.com

Understanding Lighting Technology

- Today's products use 40% to 60% less energy
- Our Government and Utilities want reduced energy use
- T-12 lighting will be illegal to Manufacture (7/1/2010)
- Metal Halide to Fluorescent is most Common Change out

Industrial/Manufacturing/Warehouse

Metal Halide
458 Watts

T5 HiBay Fluorescent
234 Watts

Office & Retail

Or

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

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

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

Charles.goulding@energytaxsavers.com

Major Lighting Bans

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

[1] Residential is excluded from the ban, provided power factor is less than 0.90.

[2] Permissible replacements for incandescents include:

1) High efficiency incandescents
2) CFLs
3) LEDs

Charles.goulding@energytaxsavers.com

Retrofit Math

100,000 sq.ft. Warehouse

250 Metal Halides replaced with HiBay Fluorescents

- Cost of Project = $75,000 (Assumes $300/fixture installed)
  - Annual Energy Savings = $24,461/yr
    - 250 x (0.458 kW-0.234 kW) x 12 hrs/day x 7 day/wk x 52 wk/yr x $0.10/kWh
  - Rebate = $25,000
    - This is a sample rebate, using N. Grid's rebates. Some areas have no rebate system others have larger rebates.
  - Added PV of Tax Deduction = $10,410
    - 40% combined tax rate, 8% discount rate, compared to 39 yr depreciation removed(expensed) in year 15
- Payback = 1.2 Years
- IRR = 63%

Without rebate, Payback = 2.5 yrs, IRR = 37%

Charles.goudling@energytaxsavers.com

NSTAR Gas Heater Rebates

- NSTAR Custom Rebate for energy efficient heaters
  - New Construction
    - Offers to reimburse up to 75% of the incremental cost of using an efficient heater as opposed to standard heaters.
  - Retrofit
    - Offers to reimburse up to 50% of the cost of using an efficient
  - ~$20,000 rebate on a 100,000 sq. ft. building.

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.

charles.goulding@energytaxsavers.com

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
4. Centralized HVAC in Rental Apartment Buildings
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

jacob.goldman@energytaxsavers.com

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

charles.goulding@energytaxsavers.com

Lighting/Heater
Combined Measure EPAct Tax Deductions
Warehouse, Industrial, Public Storage

Facility Square Footage	$1.20 Per Sq. Ft. w/EPAct Level Lighting Wattage	$1.80 Per Sq. Ft. w/Induction, LED, & Very Low Wattage
50,000	$ 60,000	$ 90,000
100,000	$ 120,000	$ 180,000
200,000	$ 240,000	$ 360,000
300,000	$ 360,000	$ 540,000
400,000	$ 480,000	$ 720,000
500,000	$ 600,000	$ 900,000
600,000	$ 720,000	$ 1,080,000
700,000	$ 840,000	$ 1,260,000
800,000	$ 960,000	$ 1,440,000
900,000	$ 1,080,000	$ 1,620,000
1,000,000	$ 1,200,000	$ 1,800,000

Look for taxpayers with large, simple spaces

- Great Candidates Include:
  - Manufacturers, warehouses, parking garages and self storage facilities for lighting
  - Manufacturers and warehouses for Cambridge Heaters
  - Multi-site retailers with lots of facilities including supermarkets
  - Low wattage lighting technologies: LED’s and induction
  - Any of the 12 commonly qualifying HVAC technologies

To Recap: Best Opportunities

- Architect & Engineering firms doing Government Projects
- Large spaces - tax deduction is based on square footage
- LEED Buildings (gold & platinum)
- Owners of buildings > 50,000 sq. ft. investing in energy efficient lighting

Charles.goulding@energytaxsavers.com

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.

Charles.goulding@energytaxsavers.com

Energy Tax Savers

- Why Choose Energy Tax Savers?
  - Unique, multidisciplinary staff
    - CPA, Attorney, Engineering, Computer Modeling, LEED AP
  - Leading subject matter experts
    - Have completed thousands of EPAct Tax Packages
    - National speaking tour
    - Published articles
  - Nation's leading EPAct Service Provider
  - Marketing partnerships
    - We are part of a team of leading energy management companies that together provides services to meet today's complex energy needs

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Energy Tax Savers, Inc.

http://www.energytaxsavers.com/

Energy Tax Savers
12 Split Rock Rd.
Syosset, NY 11791
Phone: 516.364.2630
Fax: 516.364.2646

Email: charles.goulding@energytaxsavers.com