

# The Energy Tax Aspects of Indiana Warehouses

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With its central location & strong manufacturing base, Indiana has one of the largest warehouse concentrations in the United States.

Perhaps, more importantly, Indianapolis has good air transportation and appears to be moving forward on a large Aerotropolis complex combining 5 existing airports into a one mega airport<sup>1</sup>. In February of 2011 it was reported that the Indianapolis International airport leaders have approved a 30 year plan aimed at developing the land to support this initiative. The plan called for tearing down the old terminal and bringing in new development to create a central airport city, including passenger cargo and aviation service facilities along with hotels, conference centers and offices.

The officials indicated that one of the first proposals to be developed would be a 60 acre solar farm that would power new development and feed energy to Indianapolis Power and Light. This is an excellent strategy since the other large Aerotropolis locations with extensive warehouse complexes that are going to be attractive to global companies, including Los Angeles and New Jersey, are already engaged in installing large volumes of solar P.V. installations to enable lower cost warehouse operating costs.

Indiana warehouses that make energy-efficient upgrades and install solar P.V. can be eligible for very large tax incentives.

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<sup>1</sup> See Charles R. Goulding and Charles G. Goulding, *The EPAct Tax Aspects of the Aerotropolis*, Google Knol, March 2011, <http://knol.google.com/k/charles-goulding/the-epact-tax-aspects-of-the/1xedf26uc9hpi/10#>

## **The EPAct Tax Opportunities**

### **EPAct**

Pursuant to Energy Policy Act (EPAct) Section 179D, warehouses making qualifying energy-reducing investments in their new or existing locations can obtain immediate tax deductions of up to \$1.80 per square foot.

If the building project doesn't qualify for the maximum EPAct \$1.80 per square foot immediate tax deduction, there are tax deductions of up to \$0.60 per square foot for each of the three major building subsystems: lighting, HVAC (heating, ventilating, and air conditioning), and the building envelope. The building envelope is every item on the building's exterior perimeter that touches the outside world including roof, walls, insulation, doors, windows and foundation.

Warehouses that combine energy-efficient lighting and heating have become, by far, the largest category of buildings qualifying for the \$1.20 to \$1.80 EPAct tax deductions. The following table illustrates the magnitude of potential EPAct tax benefits available to Indiana warehouses at various square footage's:

#### **Warehouse Properties Potential EPAct Tax Deductions**

<b>Sample Square Footage</b>	<b>EPAct Deduction \$1.20/Sq.Ft.</b>	<b>EPAct Deduction \$1.80/Sq.Ft.</b>
50,000	\$60,000	\$90,000
100,000	\$120,000	\$180,000
250,000	\$300,000	\$450,000
500,000	\$600,000	\$900,000
750,000	\$900,000	\$1,350,000
1,000,000	\$1,200,000	\$1,800,000

## **Alternative Energy Tax Credits and Grants**

There are multiple 30% or 10% tax credits available for a variety of alternative energy measures with varying credit termination dates. For example, the 30% solar tax credit expires January 1<sup>st</sup> 2017 and the 10% Combined Power tax credit also expires January 1<sup>st</sup> 2017. The 30% closed loop and open loop biomass credit expires January 1<sup>st</sup>, 2014.

All alternative measures that are eligible for the 30% and 10% tax credits are also eligible for equivalent cash grants for the three years starting January 1<sup>st</sup> 2009 and ending December 31<sup>st</sup> 2011.

## **Lighting**

Building lighting comprises a large portion of warehouse energy use. Most warehouses that have not had a lighting upgrade to energy-efficient lighting in the last 7 or 8 years utilize prior generation metal halide or T-12 fluorescent lighting. It is also important to realize that effective January 1, 2009 most probe-start metal halide lighting may no longer be manufactured or imported into the United States and effective July 1, 2010; most T-12 lighting may no longer be manufactured or imported into the United States. This means that warehouses that still have this lighting technology will soon be subject to large price increases for replacement lamps and bulbs.

This prior generation T12 and metal halide lighting is very energy inefficient compared to today's T-8 and T-5 lighting, and a lighting retrofit can easily reduce lighting electricity costs by 40 to 60 percent. In addition to large energy cost reduction from the base building lighting, most warehouses undergoing lighting retrofits install sensors that completely shut off the lighting in portions of the warehouse that are not in use. Previously, many warehouse owners and lighting specifiers were reluctant to install sensors because they reduced fluorescent lamp useful life. Today, improved technology sensors are available with warranties not to reduce lamp useful life.

## Heating

New, improved commercial heating systems can provide energy cost savings of eight percent or more over the ASHRAE 2001 building code standards. There are multiple heater technologies suitable for the warehouse market, including direct fired gas heaters, unit heaters, and infrared (radiant) heaters<sup>2</sup>.

If feasible the warehouse heater should be mounted on an exterior wall to optimize the roof top solar P.V. space.

An example illustrating the maximum utilization of the \$1.20 EPAct tax deduction for a 100,000 sq ft warehouse with an energy-efficient heater is as follows:

<b>100,000 sq ft Warehouse</b>			
<b>\$1.20 per sq ft EPAct Tax Deduction</b>			
	<b>Lighting</b>	<b>Heater</b>	<b>Total</b>
Project Cost	\$ 135,000	\$ 35,000	\$ 170,000
Utility Rebate	\$ (35,000)	\$(15,000)	\$ (50,000)
Net Investment	\$ 100,000	\$ 20,000	\$ 120,000

With this example, the \$120,000 (100,000 sq ft x \$1.20) entire investment EPAct tax deduction will be achieved as long as the combined lighting heater project reduces total energy cost by 33 1/3% as compared to ASHRAE 2001.

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<sup>2</sup> See Charles Goulding, Jacob Goldman and Raymond Kumar, *Large EPAct Energy Tax Deduction Opportunities for Commercial Heaters*, Corp. Bus. Tax'n Monthly, January 2010, at 11.

## Building Envelope

If a warehouse requires re-roofing this owner should consider a more energy-efficient white roof. Moreover, when re-roofing this is the ideal time to consider adding more insulation. If the building already had an energy-efficient design and roof the owner may want to consider upgrading to more energy-efficient truck bay doors and windows.

<b>100,000 sq ft Warehouse</b>				
<b>\$1.80 per sq ft EAct Tax Deduction</b>				
	<b>Lighting</b>	<b>Heater</b>	<b>Roof</b>	<b>Total</b>
Project Cost	\$ 135,000	\$ 35,000	\$ 80,000	\$ 250,000
Utility Rebate	\$ (35,000)	\$ (15,000)	\$ (20,000)	\$ (70,000)
Net Investment	\$ 100,000	\$ 20,000	\$ 60,000	\$ 180,000

With this example the maximum \$180,000 EAct tax deduction (100,000 sq ft x \$1.80) will be available as long as the combined lighting, heater and roof project reduces total energy cost by at least 50% as compared to ASHRAE 2001.

The aviation planning consultants, Ladrum and Brown, in March 2009 reported that commercial passenger and cargo operations at the Indiana Airport over the next 30 years will nearly double. There are two key findings to support that statement. “[First], by 2040, total enplanements will average 7.2 million or a total of more than 14 million passengers served annually. Projected growth for passenger enplanements is 1.5 to 2.6 percent annually. [Second], by 2040, a projected 1.7 million metric tons of cargo will be handled at IND, up from about 900,000 metric tons in 2009. The bulk of this growth will be led by FedEx for an annual growth rate of 1.7 to 2.7 percent.”

The total Indiana warehouse and industrial building EAct opportunity is presented below:

**Indiana Aerotropolis Industrial Warehouse  
EPAct Tax Deduction Potential**

Property	Total Square Footage	Lighting		HVAC Maximum Deduction	Building Envelope Maximum Deduction	Total
		Minimum Deduction	Maximum Deduction			
Southwest	67,880,058	\$ 20,364,017	\$ 40,728,035	\$ 40,728,035	\$ 40,728,035	\$ 122,184,104
Northwest	47,417,284	\$ 14,225,185	\$ 28,450,370	\$ 28,450,370	\$ 28,450,370	\$ 85,351,111
East	34,454,991	\$ 10,336,497	\$ 20,672,995	\$ 20,672,995	\$ 20,672,995	\$ 62,018,984
Central Business District	23,744,995	\$ 7,123,499	\$ 14,246,997	\$ 14,246,997	\$ 14,246,997	\$ 42,740,991
South	17,513,402	\$ 5,254,021	\$ 10,508,041	\$ 10,508,041	\$ 10,508,041	\$ 31,524,124
Northeast	17,502,665	\$ 5,250,800	\$ 10,501,599	\$ 10,501,599	\$ 10,501,599	\$ 31,504,797
<b>Totals:</b>	<b>208,513,395</b>	<b>\$ 62,554,019</b>	<b>\$ 125,108,037</b>	<b>\$125,108,037</b>	<b>\$ 125,108,037</b>	<b>\$ 375,324,111</b>

**Warehouse Tax Incentivized Energy-Efficient Design Process Steps**

The process steps for achieving an energy-efficient Indiana warehouse are presented below:

- 1) Assemble team including Warehouse experts for EPAct tax incentives, utility rebates, lighting, heater, envelope and solar.
- 2) See if roof is compatible for solar and heater. Obtain solar and any needed roof/insulation proposals. Make sure existing roof warranties are compatible with solar P.V. installation.
- 3) Obtain lighting design that replaces all inefficient lighting. Compare and contrast fluorescent, induction and LED lighting alternatives.
- 4) Obtain Cambridge heater or equivalent design proposal based on proposed roof design.

- 5) Determine utility rebate based on all proposed separate and combined measures.  
Lighting will reduce electrical use. Roof, insulation and heater will reduce therms.
- 6) Determine tax incentives including EAct tax deduction benefit and solar credit tax deductions. EAct will be based on total project square footage, including mezzanines and pick and pack modules. The 30% solar tax credit will be based on the combined solar material and installation costs.
- 7) Prepare project proposal integrating project cost, energy savings, utility rebates and tax incentives.
- 8) Get project approved.
- 9) Hire contractors and execute project.
- 10) Have EAct modeler and tax expert prepare IRS approved software model and tax documentation.
- 11) Process utility rebates.
- 12) Reduce Federal and State estimated tax payments for large tax deductions and credits.
- 13) Celebrate tax enhanced energy-efficient warehouse achievement.

## **Conclusion**

As described above there are multiple compelling reasons including energy and substantial tax savings why Indiana area warehouses are acting on energy-efficient warehouse projects. This is such a widespread phenomenon that market forces will require warehouse landlords to upgrade just to remain competitive. Once the overwhelming majority of warehouses are upgraded America's building products community will undoubtedly turn their attention to the next major building category requiring improvement which may very well be the office building you are sitting in.

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