

## **The Energy Tax Aspects of Kentucky's Manufacturing and Warehousing Base**

By Charles Goulding and Spencer Marr

### **Intro**

Industrial electricity rates in Kentucky have already risen 43 percent over the past five years, according to economic agencies, and some predict those rates will double over the next decade.

In June 2010, several large manufacturing companies announced their plans to develop manufacturing space in Northern Kentucky at a cost of around \$28.4 Million. At around the same time, GE announced its plans to invest \$600 Million in its manufacturing facilities in Louisville; and in December, 2010, Ford undertook a \$600 Million plan to transform its Louisville complex into the brand's most state-of-the-art facility in the world. With so many companies planning to invest in expanding their existing operations or moving into the region for the first time, the sheer amount of square footage to be developed in the state presents the opportunity for manufacturing facilities owners to realize substantial energy related tax incentives.

The Kentucky Manufacturing Assistance Center (KMAC) recently reported on the status of Kentucky's manufacturing sector, and emphasized the importance of sustainable product and process development alongside a focus on continuously improving operations to make them more cost effective. By retrofitting existing warehouse and manufacturing facilities to make them more energy efficient, or building new facilities energy efficiently, warehouse and manufacturing facility owners can achieve KMAC's goals while drawing on federal EAct § 179D and Recovery and Reinvestment Act tax incentives.

### **The EAct Section 179D Tax Opportunities**

Pursuant to Energy Policy Act (EAct) Section 179D, Kentucky manufacturers or warehouse owners 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 EAct Section 179D \$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.

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

There are multiple 30% or 10% tax credits available through the American Recovery and Reinvestment Act to Kentucky manufacturers for a variety of

alternative energy measures, with varying credit termination dates. For example, the 30% solar tax and fuel tax credits expire January 1<sup>st</sup> 2017 while 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 energy 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.

### **Unique 2011 Opportunity: Enhanced Bonus Tax Depreciation**

The credits described above are ordinarily eligible for 5 year MACRS depreciation, but building owners who install these renewable energy systems after September 8, 2010 through December 31, 2011 can take 100% depreciation tax bonus immediately. Even if building owners miss this 2011 window, they can enjoy a 50% tax depreciation bonus on alternative energy equipment placed in service from January 1, 2011 through December 31, 2012.

### **The Kentucky Manufacturing Base**

In April, 2011, more than 300 Kentucky manufacturing and related professionals gathered in Louisville to discuss ways to reduce energy expenses at the Energy Conference 2011. This conference came in the wake of GE's announcement in May of 2010 that it will be investing \$600 Million in its manufacturing and other facilities at Appliance Park, a 2.02 million square foot commerce center. The industry analysts at the Energy Conference 2011 concluded that in order to stay competitive, this vast amount of commercial property, along with the rest of Kentucky's manufacturing square footage, needs to adapt to a changing energy marketplace: the focus must be on energy efficiency and alternative energy generation.

Today, Kentucky manufacturers face fierce global competition, customers who demand more rapid innovation, a workforce whose demographics are fundamentally changing, more complex supplier networks, and market opportunities that are outside U.S. borders. These factors all point to an increased need to cut energy expenses, especially when considering that Kentucky manufacturers have not had to carefully manage and control their energy consumption over the last few decades as a result of the state's low electricity prices. If Kentucky manufacturers hope to rid themselves of the title of the third highest energy use per industrial customer in the country, they need to start acting now to make their facilities more efficient.

### **The Kentucky Tax Opportunity**

Four of the seven manufacturing facilities in Northern Kentucky soon to be built or expanded total approximately 350,000 square feet. The following chart summarizes the EAct 179D tax opportunities available to these four facilities:

Location	Total Square Footage	Lighting		HVAC	Building Envelope	Total
		Minimum Deduction	Maximum Deduction	Maximum Deduction	Maximum Deduction	
Zumbiel Packaging	180,000	\$ 54,000	\$ 108,000	\$ 108,000	\$ 108,000	\$ 324,000
Diversified Structural Composites Inc.	96,000	\$ 28,800	\$ 57,600	\$ 57,600	\$ 57,600	\$ 172,800
Hahn Automation Inc.	25,000	\$ 7,500	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000
Parkway Products Inc.	55,686	\$ 16,706	\$ 33,412	\$ 33,412	\$ 33,412	\$ 100,235
<b>Totals</b>	<b>356,686</b>	<b>\$ 107,006</b>	<b>\$ 214,012</b>	<b>\$ 214,012</b>	<b>\$ 214,012</b>	<b>\$ 642,035</b>

While the Northern Kentucky plants present a substantial opportunity, the two large plants, owned by GE and Ford, in Louisville combine for over 5 millions square feet of manufacturing space, potentially amounting to tremendous EAct tax savings. The following chart illustrates this potential:

In order to effectively capture the full EAct tax savings, building owners will need to concentrate on upgrading the building's lighting, HVAC, and building envelope in addition to considering alternative energy generation to qualify for tax credits.

### **Lighting**

Building lighting comprises a large portion of manufacturing and 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 T-12 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 or manufacturing facilities 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 manufacturing or warehouse facilities, including direct fired gas heaters, unit heaters, and infrared (radiant) heaters.

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 EAct tax deduction for a 100,000 sq ft facility with an energy-efficient heater is as follows:

<b>100,000 sq ft Warehouse</b>			
<b>\$1.20 per sq ft EAct 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 EAct 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.

### **Building Envelope**

If a manufacturing facility or warehouse requires re-roofing the owner should consider a more energy-efficient white roof. Moreover, re-roofing 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.

### **Warehouse and Manufacturing Facility Tax Incentivized Energy-Efficient Design Process Steps**

The process steps for achieving an energy-efficient Kentucky warehouse or manufacturing facility are presented below:

1. Assemble team including experts for EAct 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 EPAct tax deduction benefit and solar credit tax deductions. EPAct 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 EPAct 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 Kentucky area manufacturers and warehouse owners are acting on energy-efficient projects. This is such a widespread phenomenon that market forces will require manufacturers to upgrade just to remain competitive.

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