



# Profile of Kentucky's Recycling Industry



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# Kentucky's Recycling Industry

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## I. Executive Summary

Recycling is hot these days not only in Kentucky but across the nation as well. Concerns over global warming and rising energy costs are pushing science and industry to develop new and more efficient ways to make current or more innovative products at less cost. One of the most promising ways to reduce overall production and energy costs is to increase the rate of recycling materials. This profile will focus on two areas relevant to recycling. The first area of focus is materials, specifically aluminum, steel and plastics. In 2004, these three industries accounted for 57,351 Kentucky jobs and nearly \$2.2 billion in payroll for an average annual wage of \$37,555 (See table 8). The second area of focus is electronic recycling, including everything from circuit boards to batteries to the cathode ray tube (CRT) in computer monitors. There will be some cross over in these two areas because plastic is a large part of most modern electronic devices.

The United States' aluminum industry is the world's largest, annually producing about \$39.1 billion in products and exports. U.S. companies are the largest single producer of primary aluminum. The U.S. industry operates over 300 plants in 35 states, produces more than 23 billion pounds of metal annually and employs over 145,000 people with an annual payroll of about \$5 billion. Aluminum is one of the few products and industries left in America that truly impacts every community in the country, either through physical plants and facilities, recycling, heavy industry, or consumption of consumer goods. In terms of both its positive economic and environmental impact, the aluminum industry remains one of our most significant national and international success stories.<sup>1</sup>

The aluminum industry consists of three basic supply sources each comprising nearly a third of national consumption:<sup>2</sup>

- **Primary** (domestic production from ore material)
- **Imports** (of primary and secondary ingot and mill products) and
- **Recycled** (metal recovered from scrap, also known as secondary recovery)

Increasing the primary and recycled aluminum industries should go a long way in reducing the nation's dependency on imported aluminum.

Kentucky is one of the top aluminum producing states in the nation. Aluminum is the most recycled material in the world. It can be recycled over and over again and never lose its strength and consistency. This gives the Commonwealth a unique advantage

not enjoyed by most of the other states. A report sponsored by the Kentucky Science and Technology Corporation identified the aluminum industry as one of the four growing value chain clusters in the state.<sup>3</sup>

A second area in which Kentucky has an advantage over other states is in the steel industry. As with aluminum, Kentucky is one of the top steel producing states in the nation. When measured by the value of shipments, Kentucky ranks as one of the top twenty metal exporting states in the primary metal manufacturing and fabricating industries.<sup>4</sup>

Steel has made some great advances over the last two decades. Over 50% of the steels made today were not in existence 10 years ago. Today's "new steel" is stronger, thinner, easier to shape and corrosion-resistant. It makes safer, more fuel-efficient cars and longer-lasting products. Thanks to improvements in galvanizing and coating, steel is the world's most resistant material to decay, corrosion, fire and floods. That is why today's cars last longer and steel is beginning to be used more and more to frame houses. The industry has used computers and new technology to upgrade and streamline the steelmaking process. Steel is an environmentally responsible material. It is recyclable and steel mills have drastically reduced emissions. Lastly, steel is an economical choice for consumers.<sup>5</sup>

The third of the material areas is plastics. Kentucky has a strong and competitive plastics industry. The plastics industry in Kentucky consists primarily of companies engaged in processing new and recycled plastics resins into intermediate or final products using such processes as compression molding; extrusion molding; injection molding; blow molding; and film & sheet extrusion. Kentucky's plastic companies produce thousands of products that include everything from foam containers to plastic tent pegs and automotive seats.

Kentucky ranked as having the 6th (tied) largest plastics and rubber products project by investment in 2005 with the announcement of a \$60 million investment by Arkema, Incorporated in Calvert City. (*Site Selection*, July 2006) The strong industrial base of Kentucky and the surrounding states provides short distance access to suppliers, customers, and services.

Electronic waste recycling or "E-recycling" as it is commonly referred to is an industry perched on the verge of an economic explosion. Electronic waste is created as the

result of technological change which renders computers, monitors, televisions, audio equipment, printers, and other home electronic devices obsolete. This is especially true for computers and cellular telephones. Some estimates have more than 63 million computers being retired in 2005. It is estimated that 1% of all consumer waste in landfills and dumps is electronic waste. At the current levels, only about 14% of this waste is recycled.<sup>6</sup>

One event that has taken place recently and that bears watching is the rise in the cost of nickel. According to an April 6, 2007 article in the *Paducah Sun*, nickel has been selling this year (2007) at record highs due the high demand for the product in China and India. With an estimated 9,700 tons of contaminated nickel at the Paducah Gaseous Diffusion Plant, there is a potential for nearly half a billion dollars in revenue for this metal once it has been recycled. Such a plant would provide not only jobs to the area, but would also provide an opportunity to develop and define an industry with growth potential.

Kentucky offers several advantages to firms in the recycling industry, including: low utility cost, central location, quality workforce, ports along the Ohio and Mississippi rivers, and the automotive industry's significant presence. Kentucky is nearly equidistant from the Great Lakes, the Gulf of Mexico and the Atlantic Seaboard. That makes the state an excellent distribution point for the aluminum, steel, plastics and electronic components industries. Its location allows these companies to ship to customers in both northern and southern regions of the United States.

Most of the nation's automotive production facilities are within 500 miles of central Kentucky. Since the automotive industry is a major purchaser of rubber and plastics products, Kentucky provides excellent access for just-in-time deliveries.

**Highlights of the Kentucky recycling industry include:**

- There are 83 recycling-related facilities with 8,292 employees in Kentucky. (See the *Kentucky's Recycling-Related Facilities* chart in the Appendix.)
- The Novelis facility in Berea employs 109 people is the world's largest fully dedicated aluminum can recycling plant.<sup>7</sup>
- The transportation and containers & packaging industries are the largest markets for Kentucky aluminum establishments.

- Logan Aluminum (Russellville) is the largest aluminum employer in Kentucky with 950 employees.
- The Owensboro Riverport is one of the leading ports nationally in the handling and storage of primary and secondary aluminum. It is the only site in the United States to handle aluminum for both the New York Mercantile Exchange and the London Metal Exchange.<sup>8</sup>
- The average salary for primary metals industry employees in Kentucky in 2004 was \$46,338/year.
- Gallatin Steel Company, a state-of-the-art steel mill at Ghent in Gallatin County is a joint venture between Dofasco, Inc. and Gerdau Ameristeel. It began production in 1995 and is one of the most technologically advanced mills in the world. It currently produces over 1.4 million tons of hot steel bands on an annual basis and recycles over 4,000 tons of scrap metal daily.
- In 2005, Kentucky exported nearly \$936 million in primary and fabricated metals to foreign countries, with Canada and Mexico making up over \$611 million of this amount.<sup>9</sup>
- The United States exported over \$55 billion of primary metal and fabricated metal products in 2005.<sup>10</sup>
- Kentucky is one of the top twenty metal product exporting states.<sup>11</sup>
- The automotive, appliance and construction industries are the largest markets for Kentucky steel establishments.
- Kentucky's plastic exports have grown from \$212,411,176 in 2002 to \$308,189,580 in 2005 or over 45% in three years for an average growth of 15% a year.

## **II. Recycling/Materials Industries in Kentucky**

### **Aluminum Industry Highlights**

Kentucky has a strong presence in both the primary and fabricated aluminum sectors. It also has the potential to create a formidable presence in the aluminum recycling industry. Primary aluminum establishments produce aluminum as their primary product. Fabricated aluminum businesses fabricate aluminum into a finished or secondary product.

Kentucky ranks as the number one state in the primary aluminum industry and the number seven state in primary metal when measured by value of shipments and as listed by the U. S. Census Bureau in its 2005 *Annual Survey of Manufactures*. In 2005, the value of shipments for the primary aluminum industry in Kentucky totaled over \$4.3 billion. That was 11.8% of the total national shipments for that year. (See Table 1)

**Table 1: Primary Aluminum Shipments (2005)**

<b>State</b>	<b>Value of Shipments</b>
<b>Kentucky</b>	\$ 4,312,243,000
Indiana	\$ 3,529,093,000
Tennessee	\$ 3,271,237,000
New York	\$ 3,007,779,000
Ohio	\$ 2,507,250,000

Source: *Geographic Area Statistics 2005: Annual Survey of Manufactures*, U.S. Census Bureau.

**Aluminum Companies**

Kentucky is home to several industry-leading recycling facilities, including:

- **Alcan Ingot** in Sebree is one of two aluminum smelters in Kentucky. Alcoa, in Hawesville, is the other. In 2006, Alcan Ingot had 629 employees, and it produced over 191,171 metric tons of aluminum.
- **Aleris International, Inc.**, one of the world’s largest recyclers of aluminum and zinc operates a rolling mill in Lewisport that employs over 800 people. Coils, tubing and conduit are the primary products manufactured at this facility. Recycling is its primary method of production.
- **Logan Aluminum** in Russellville is the largest aluminum employer in Kentucky with 950 employees (2006). The company manufactures rolled sheet for use in beverage cans. It produces around one-third of the aluminum sheet for all beverage cans made in the U.S., and ships out 35,000 truckloads annually.
- **Norsk Hydro Aluminum Metal Products** in Henderson is a revolutionary re-melt plant. Hydro recycles aluminum scrap into primary aluminum extrusion billets, and has a production capacity of around 90,000 metric tons a year. Because of its advanced technology, Hydro uses just 5 percent of the energy that a smelter uses, which translates into significant cost savings.

## Steel Industry Highlights

As of April 2007, the steel industry in Kentucky included 52 manufacturing establishments with 7,311 employees, based on surveys conducted by the Kentucky Cabinet for Economic Development. Kentucky has a strong presence in steel production and is one of the top ten steel producing states.

Kentucky ranks as one of the top primary metal and fabricated metal exporting states in the nation as measured by value of shipments. In 2005, the value of exports for the metal industry in Kentucky totaled nearly \$936 million.<sup>12</sup>

When measured by value of shipments and as listed by the U. S. Census Bureau in its 2005 *Annual Survey of Manufactures*, Kentucky ranks as one of the top ten primary metal producing states. The value for primary metal shipments for the same year was over \$10.1 billion. This represented nearly 5% of the total national shipments. (See Table 2)

**Table 2: Primary Metal Shipments (2005)**

<b>State</b>	<b>Value of Shipments</b>
Indiana	\$ 26,540,912,000
Ohio	\$ 22,519,694,000
Pennsylvania	\$ 21,441,629,000
Illinois	\$ 11,985,211,000
Texas	\$ 11,350,604,000
<b>Kentucky</b>	<b>\$ 10,120,386,000</b>
Michigan	\$ 8,270,969,000

Source: *Geographic Area Statistics 2005: Annual Survey of Manufactures*, U.S. Census Bureau.

### Highlights of the Kentucky steel industry include:

- In 2005, Kentucky exported nearly \$936 million in primary and fabricated metals to foreign countries with Canada and Mexico making up over \$611 million of this amount.<sup>13</sup>
- For the same year, the Bureau of Labor Statistics lists the state as having 58 steel-related facilities with 3,387 employees, but its data was incomplete.<sup>14</sup>
- The United States exported over \$55 billion of primary metal and fabricated metal products in 2005.<sup>15</sup>

- Kentucky is one of the top twenty metal products exporting states.<sup>16</sup>
- The average salary in 2005 for primary metals industry employees in Kentucky was \$50,626/year. (See Labor Cost Comparison worksheet in Appendix)
- The automotive, appliance and construction industries are the largest markets for Kentucky steel establishments.
- 20 of Kentucky's steel facilities are considered automobile-related suppliers.

### **Steel Companies**

Kentucky is home to several state-of-the-art steel facilities producing a variety of products. Some of these facilities are:

- **AK Steel** in Ashland, the state's second largest steel employer with 1,150 employees. It was awarded the 2005 Max Eward Safety Award from the American Coke and Coal Chemicals Institute (ACCCI). It was also named one of America's Most Admired Companies by Fortune Magazine.<sup>17</sup>
- **Gallatin Steel Company**, a state-of-the-art steel mill at Ghent in Gallatin County and joint venture between Dofasco, Inc. and Gerdau Ameristeel. It began production in 1995 and is one of the most technologically advanced mills in the world. It currently produces over 1.4 million tons of hot steel bands on an annual basis and recycles over 4,000 tons of scrap metal daily.
- **Louisville Forge and Gear Works, LLC**, a custom manufacturer of highly engineered, impression die steel forgings for demanding applications. Its products are shipped throughout the world to serve a diverse industrial clientele including the following industries: 1) automotive/truck; 2) aerospace; 3) off-highway equipment; 4) farm machinery; 5) mining; and 6) oil field markets.
- **North American Stainless (NAS)** in Ghent the largest steel employer in Kentucky with 1,200 employees (2006). NAS, part of the most competitive stainless steel manufacturing group in the world, Acerinox, S.A. NAS, produces both long products (such as wire, cold bar, peeled bar, angle and rebar) and flat products (for use in commercial manufacturing for everything from appliances to automotive exhausts). It is the only North American single integrated site that takes a product from melt to finish for both flat and long products. It is also the largest investment by a Spanish corporation in the United States.<sup>18</sup>

### **Plastics Industry Highlights**

Kentucky was in the top twenty states for plastic shipments when measured by value of shipments and as listed by the U. S. Census Bureau in its 2005 *Annual Survey of*

*Manufactures*. It ranked 16<sup>th</sup> out of the fifty states and ships over \$4.2 billion in plastic and rubber products accounting for over 2% of the total national shipments in 2005.<sup>19</sup>

Most of the nation's automotive production facilities are within 500 miles of central Kentucky. Since the automotive industry is a major purchaser of rubber and plastics products, Kentucky provides excellent access for just-in-time deliveries.

**Table 3: Plastics and Rubber Shipments (2005)**

<b>State</b>	<b>Value of Shipments</b>
Ohio	\$ 17,419,978,000
California	\$ 15,593,956,000
Illinois	\$ 13,510,558,000
Texas	\$ 12,963,080,000
Michigan	\$ 10,339,364,000
Pennsylvania	\$ 9,967,073,000
Indiana	\$ 9,559,401,000
North Carolina	\$ 9,465,361,000
South Carolina	\$ 7,532,983,000
Georgia	\$ 7,344,643,000
Tennessee	\$ 6,827,110,000
Wisconsin	\$ 6,591,937,000
Virginia	\$ 5,795,666,000
New York	\$ 5,478,356,000
New Jersey	\$ 4,845,128,000
<b>Kentucky</b>	<b>\$ 4,227,249,000</b>

Source: *Geographic Area Statistics 2005: Annual Survey of Manufactures*, U.S. Census Bureau.

**Table 4: Rankings for Kentucky and Competitor States--2004  
Kentucky's Plastics Industry--Plastics Product Manufacturing (NAICS 3261)**

Competitor States	Total Employees (1)		Estimated Annual Wage		Total Business Establishments	
	Total Jobs	Rank	Wage	Rank	Establishments	Rank
<b>United States</b>	<b>739,197</b>	<b>-</b>	<b>\$ 35,571</b>	<b>-</b>	<b>12,571</b>	<b>-</b>
Alabama	10,440	22	\$ 33,331	29	161	23
Arkansas	8,754	25	\$ 32,647	34	128	29
Georgia	21,238	12	\$ 34,672	22	343	13
Illinois	49,541	4	\$ 36,917	12	706	5
Indiana	35,411	7	\$ 34,131	26	452	9
<b>Kentucky</b>	<b>16,483</b>	<b>16</b>	<b>\$ 32,869</b>	<b>32</b>	<b>173</b>	<b>22</b>
Michigan	51,996	3	\$ 35,263	17	710	4
Mississippi	7,406	27	\$ 29,057	39	122	31
Missouri	17,106	15	\$ 34,681	21	265	17
North Carolina	28,697	8	\$ 33,384	28	388	12
Ohio	61,093	2	\$ 34,184	25	861	2
South Carolina	15,044	18	\$ 39,739	5	178	21
Tennessee	20,676	13	\$ 33,090	30	288	16
Virginia	18,963	14	\$ 39,614	6	157	25
West Virginia	3,448	37	\$ 29,423	37	41	40

Source: Data derived from the United States Census Bureau, County Business Patterns 2004.  
 Note: A ranking of one (1) is the highest ranking nationally. Note: All data is NAICS based (3261).  
 Note: The Number of Employees estimate is based on survey data for the week including March 12, 2004.

### Plastics Companies

- **Dart Container Corporation** in Horse Cave is the state's largest plastic facility with 1,310. It produces plastic food containers for the food service industry and for the end-use consumer.
- **Guardian Automotive Trim, Inc.**, in Morehead is a manufacturer of plastic automotive exterior trim. It employed 550 people as of December 2006 according to a database with the Kentucky Cabinet for Economic Development.
- **Pella Corporation** produces windows and doors at its Murray facility. It employees 1,000 people and the company has been recognized by *Fortune* magazine as one of the "100 Best Companies to Work for in 2007."

- **TG Kentucky, LLC** in Lebanon employs over 900 and produces rubber molded and plastic interior components for the automotive industry.

### **Electronics Recycling Industry Highlights**

Information about businesses focusing on electronics recycling is limited. This is true for both the Commonwealth and nationally as well. Although the industry is not a new one, there seems to be a new interest or focus on it over the last few years. This is particularly true as more and more mainstream businesses take up the mantle of becoming more “green,” or eco-friendly. Given that this is an industry that may be experiencing a new infancy, it is also one that has the potential for explosive growth over the next few years.

Kentucky has the potential to be not only a leader, but also on the cutting edge of this industry. Most of today’s recycling is in the areas of aluminum, steel and plastics, but electronic recycling or “e-cycling” has the potential to create revolutionary growth for those states that take the necessary steps to catch this wave of growth.

According to an article on the Earth 911 web site<sup>20</sup>, about 75% of all obsolete computers are sent to storage instead of being disposed of by other means such as dumping or recycling. It is further estimated that by the end of 2007, there will be 500 million computers in storage and awaiting disposal. This number alone illustrates the potential of “e-cycling.” Since new technology enters the market on an average of every two years, the potential for the recycling of electronics is indeed staggering.

Computers are made with a variety of elements, like plastics, glass, steel, gold, lead, mercury, cadmium and fire retardants that can be recaptured through recycling and used again. If thrown away, these computers can release toxins to the environment, potentially polluting the groundwater we drink and the air that we breathe. Recycling the resources in computers also eliminates the need to obtain these elements from nature, decreasing production impact on the environment. By eliminating e-waste, the environment is protected, resources are saved, organizations in need benefit and you make a difference in the quality of your local environment.<sup>21</sup>

**Table 5: Major Recycling Employers in Kentucky (2006)**

<b>Company</b>	<b>Employment</b>
Best Buy Stores LP	550
ISP Chemical LLP	512
General Cable	436
Gallatin Steele	423
Jabil Global Services, Inc.	337
The Okonite Company	300
Truseal Technologies	280
Pomeroy IT Solutions, Inc.	266
Mallinckrodt-Baker, Inc.	250
Belden CDT Electronics Division	230
Trillium Industries, Inc.	207

Source: Kentucky Cabinet for Economic Development.

### **Electronic Recycling Companies**

Kentucky is home to a variety of companies involved with the recycling of computers and electronics related products. They include some of the following:

- **RJ Industries, LLC** in Frankfort is a minority owned plastic injection molder for the automotive industry. It is a plastic (electronic and non-electronic) recycler, provider of service parts and has a staffing service. It employs 55 people.
- **Shamrock Technologies**, which has two plants in Henderson is one of the world's largest processors of recycled polytetrafluoroethylene (PYFE). The company manufactures more than 250 products and is a leading supplier of a broad line of micronized powders, dispersions, emulsions and compounds.
- **Silrec Corporation** in Lexington manufactures silicon wafers and recycles other silicon products. It is a manufacturer of both quality prime and test wafers of all types. It has a commitment to protecting the environment and does this by recycling scrap silicon material that would otherwise be discarded to landfills

### **Kentucky Advantages**

Recycling companies are attracted to Kentucky for several reasons, including:

- **Ports along the Ohio and Mississippi Rivers:** Access to these river ports provides low cost transportation of bauxite (mineral of which aluminum is made) and aluminum products to national and global markets.

- **Low Cost of Electricity:** Due largely to its abundant coal reserves, in 2005, Kentucky ranked as the lowest cost state for the sixth straight year for the provision of industrial electrical power.<sup>22</sup> Because the aluminum industry is so energy intensive, the cost of electricity is a significant cost factor.
- **Central Location:** Kentucky is centrally located within the Eastern United States, where aluminum consumption is centered. Two-thirds of the nation's population, personal income, and manufacturing establishments are located within 600 miles of Kentucky's borders.
- **Auto Industry:** In 2006, Kentucky ranked 3rd among the states in light vehicle production,<sup>23</sup> and it is the location for almost 500 motor vehicle-related suppliers. As more motor vehicle-related firms move to Kentucky and automobile manufacturers increase their use of aluminum, Kentucky becomes a natural home for aluminum-related companies. In 2006, aluminum passed iron to become the second most used material in new cars and trucks. It trails only steel, another industry in which Kentucky has a strong presence, as the most used material in the light vehicle production process.<sup>24</sup>
- **Quality Workforce and Training:** Kentucky has an abundant labor base with manufacturing experience. *Expansion Management* magazine's June 2006 issue ranked *Kentucky's Workforce Training Programs*, which includes the Bluegrass State Skills Corporation (BSSC), 8th in the U.S. For the 4th consecutive year, Kentucky has ranked in the Top Ten, placing 3rd in 2005, 5th in 2004 and 8th in 2003. The ranking considered the programs' efforts in facilitating customized business and industry training services for new, expanding and existing companies.
- **Location Quotient Specialization:** Kentucky has a specialization in the primary metals, fabricated metals and plastics industries when compared to the rest of the nation. (See Table 6 and the Location Quotient calculations that follow.)

**Table 6: Employment Totals**

<b>Employment Totals for Kentucky and the United States for the Primary Metal, Metal Fabrication and Plastics Industries (2004)</b>				
	<b>US Industry Total</b>	<b>US All Industries Total</b>	<b>Kentucky Industry Total</b>	<b>Kentucky All Industries Total</b>
<b>Primary Metal</b>	451,142	115,074,924	12,402	1,489,497
<b>Fabricated Metal</b>	1,514,595	115,074,924	25,399	1,489,497
<b>Plastics Industry</b>	908,100	115,074,924	20,133	1,489,497

Source: U.S. Census Bureau, 2004 County Business Pattern.

The Location Quotients (LQit) for Kentucky as compared to the United States for the following industries (plastics and rubber product manufacturing, primary metals manufacturing and fabricated metal products manufacturing) are listed below. All data were taken from Table 6 - XX shown above.

### Location Quotient (LQit) Formula

$$LQit = (Mi/Mt) / (USi/USt)$$

Where:

Mi = industry employment for the region

Mt = total employment for the region

USi = industry employment for the nation

USt = total employment for the nation

An LQ of 1.0 for an industry indicates that there is an average concentration for a particular region. An LQ below 1.0 indicates that the industry is relatively under represented in that region. An LQ above 1.0 indicates a concentration for that industry in the region. AN LQ of 1.2 or greater illustrates that Kentucky has a specialization in that industry.

LQit for Kentucky Plastics and Rubber Products Manufacturing in 2004:

Mi = 20,133

Mt = 1,489,497

USi = 908,100

USt = 115,074,924

LQit = **1.71**

LQit for Kentucky Primary Metals Manufacturing in 2004:

Mi = 12,402

Mt = 1,489,497

USi = 451,142

USt = 115,074,924

LQit = **2.12**

LQit for Kentucky Fabricated Metals Products Manufacturing in 2004:

Mi = 25,399

Mt = 1,489,497

USi = 1,514,595

USt = 115,074,924

LQit = **1.30**

Kentucky exhibits a specialization in all three industries when compared to the nation as a whole.

**Table 7: Average Annual Wages for the Three Materials Industries**

<b>Average Annual Wages for the Three Materials Industries for Kentucky for the Year 2004</b>				
	<b>All Industries</b>	<b>Primary Metal</b>	<b>Fabricated Metal</b>	<b>Plastics</b>
<b>Employees</b>	1,489,497	12,402	25,399	20,133
<b>Average Annual Wages</b>	\$30,992	\$46,338	\$36,495	\$33,483

Source: U.S. Census Bureau, 2004 County Business Pattern.

**Table 8: Total Average Annual Wages for the Three Materials Industries**

<b>Total Average Annual Wages for the Three Materials Industries for Kentucky for the Year 2004</b>			
	<b>Number Employees</b>	<b>Average Annual Wage</b>	<b>Calculation</b>
<b>Primary Metal</b>	12,402	\$46,338	\$574,683,876
<b>Fabricated Metal</b>	25,399	\$36,495	\$926,936,505
<b>Plastics</b>	20,133	\$33,483	\$674,113,239
<b>Total</b>	57,937	\$37,555	\$2,175,733,620

Source: U.S. Census Bureau, 2004 County Business Pattern.

### III. Profile of Kentucky Materials Companies

#### Aluminum Companies

The aluminum industry in Kentucky consists of companies that produce aluminum as their primary product and those that fabricate aluminum into other products, such as cans or automotive parts.

Kentucky aluminum-related companies represent over 20 different industry classifications, but they are primarily concentrated in 7 industries. According to data supplied by the Kentucky Cabinet for Economic Development, as of April 9, 2007, Kentucky had 42 aluminum facilities (by the seven concentrated industries) employing 9,970 people. Table 8 shows the number of facilities and employees for the 6-digit NAICS industries with a significant presence in the Kentucky economy. Aluminum extruded product manufacturing (NAICS 331316) has the largest presence in Kentucky with 12 establishments and nearly 3,300 employees. Primary production of aluminum (NAICS 331312) and aluminum die-castings foundries (NAICS 331521) also compose a large share of Kentucky's aluminum industry with six and ten facilities and 2,261 and 3,034 employees, respectively.

Kentucky aluminum facilities manufacture several products. Common products of Kentucky aluminum establishments include rolled sheet stock, tubing, die-castings, ingots, extrusions, billets, foil, die cast automotive parts, coils, containers, gutters, windows, and several products for automobiles. The transportation and containers & packaging industries are the biggest markets for aluminum companies in Kentucky.



**Table 9: NAICS Composition of Kentucky Aluminum Facilities**

<b>NAICS Code</b>	<b>Description</b>	<b>Facilities</b>	<b>Employees</b>
331312	Primary Production of Aluminum	5	1,974
331314	Secondary Smelting and Refining of Nonferrous Metals	8	772
331315	Aluminum Sheet, Plate, and Foil Manufacturing	4	1,133
331316	Aluminum Extruded Product Manufacturing	12	3,212
331319	Other Aluminum Rolling and Drawing	4	600
331521	Aluminum Die-Castings Foundries	9	3,179
331524	Aluminum Foundries, except Die Casting	1	50

Note: Since many facilities are classified into more than one NAICS code and not all NAICS codes are mentioned, the sum of the 7 industries does not equal the total of all aluminum-related facilities.

Source: Kentucky Cabinet for Economic Development.

## **Steel Companies**

The steel industry in Kentucky consists of companies that produce steel as their primary product and those that fabricate steel into other products, such as wires or automotive parts. Kentucky steel-related companies represent seven different industry classifications, but they are primarily concentrated in five industries. Table 9 shows the number of facilities and employees for the 6-digit NAICS industries with a significant presence in the Kentucky economy. Rolled steel shape manufacturing (NAICS 331221) has the largest presence in Kentucky with 21 establishments and nearly 3,900 employees. Iron and steel mills (NAICS 331111) also compose a large share of Kentucky's steel industry with 14 facilities and 2,167 employees.

Common products of Kentucky steel establishments include stainless steel coils, sheets, and long products such as bar, wire, angle and rebar. Many of the facilities specialize in producing products for the automotive industry and the majority of their production goes to supply the demands of that industry. Other areas of concentration are in fabricating and forging steel and stainless steel production.

**Table 10: NAICS Composition of Kentucky Steel Facilities**

<b>NAICS Code</b>	<b>Description</b>	<b>Facilities</b>	<b>Employees</b>
331111	Iron & Steel Mills	12	2,167
331210	Iron/Steel Pipe & Tube Mfg (Purchased Steel)	7	484
331221	Rolled Steel Shape Manufacturing	21	3,898
331222	Steel Wire Drawing	7	721
332111	Iron & Steel Forging	9	1,376

Note: Since many facilities are classified into more than one NAICS code and not all NAICS codes are mentioned, the sum of the 5 industries does not equal the total of all steel-related facilities.

Source: Kentucky Cabinet for Economic Development.

### **Plastics Companies**

Kentucky's plastic exports have grown from \$212,411,176 in 2002 to \$308,189,580 in 2005 or over 45% in three years for an average growth rate of 15% a year. The neighboring nations of Mexico and Canada are the Kentucky plastic industry's most important trading partners, followed by the United Kingdom, Brazil and Japan. Foreign trade is becoming increasingly important to plastics industry employment. (See Table 11)



**Table 11: Kentucky's Exports of Plastic and Rubber Products  
Top 15 Countries-- Annual 2005**

Country of Destination	Exports	Kentucky Jobs Created by Exports			
		Direct	Indirect	Induced	Total
<b>All Countries</b>	<b>\$ 308,189,580</b>	<b>1,440</b>	<b>631</b>	<b>1,166</b>	<b>3,238</b>
CANADA	\$ 168,132,812	827	363	670	1,859
MEXICO	\$ 66,470,039	327	143	265	735
UNITED KINGDOM	\$ 14,559,614	72	31	58	161
BRAZIL	\$ 9,705,001	48	21	39	107
JAPAN	\$ 6,603,871	32	14	26	73
CHINA (MAINLAND)	\$ 5,950,097	29	13	24	66
GERMANY	\$ 3,995,292	20	9	16	44
BELGIUM	\$ 3,419,995	17	7	14	38
COLOMBIA	\$ 2,733,477	13	6	11	30
ARGENTINA	\$ 2,683,370	13	6	11	30
AUSTRALIA	\$ 2,668,874	13	6	11	30
REPUBLIC OF SOUTH AFRICA	\$ 1,621,590	8	3	6	18
FRANCE	\$ 1,466,408	7	3	6	16
NETHERLANDS	\$ 1,458,537	7	3	6	16
IRELAND	\$ 1,312,466	6	3	5	15

Source: "Origin of Movement Series," Massachusetts Institute of Social and Economic Research, University of Massachusetts. Economic Impact data produced by the Kentucky Cabinet for Economic Development, Division of Research.

The plastics industry in Kentucky has 233 total business establishments with 28,458 employees based on surveys conducted by the Kentucky Cabinet for Economic Development and dated April 2007. Thirty-six businesses are in the resin and synthetic rubber manufacturing sector (NAICS code 32521), employing 4,094 people. There are 152 businesses in the "all other plastics product manufacturing sector" (NAICS code 326199) employing 20,301 people (See table 11).



**Table 12: NAICS Composition of Kentucky Plastic Facilities**

<b>NAICS Code</b>	<b>Description</b>	<b>Facilities</b>	<b>Employees</b>
32521	Resin & synthetic rubber mfg	36	4,094
326111	Plastics bag mfg	4	282
326112	Plastics packaging film & sheet (including laminated) mfg	4	252
326113	Unlaminated plastics film & sheet (except packaging) mfg	11	1,829
326121	Unlaminated plastics profile shape mfg	8	580
326122	Plastics pipe & pipe fitting mfg	10	803
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing	6	589
326140	Polystyrene foam product mfg	9	1,927
326150	Foam product (except polystyrene) mfg	7	1,153
326160	Plastics bottle mfg	8	880
326191	Plastics plumbing fixture mfg	3	140
326199	All other plastics product mfg	152	20,301

Note: Since many facilities are classified into more than one NAICS code and not all NAICS codes are mentioned, the sum of the various industries does not equal the total of all plastic-related facilities.

Source: Kentucky Cabinet for Economic Development.

On May 28, 2004, the United States and five Central American nations (Costa Rica, El Salvador, Honduras, Guatemala, and Nicaragua) signed the U.S. - Central American Free Trade Agreement (CAFTA). The Dominican Republic joined the treaty on August 5, 2005, thus creating the (CAFTA-DR) agreement. The agreement leveled the playing field for U.S. plastic products exported to this region, which is the 10th largest export market for the United States, with El Salvador being the 16th (2005) largest market. These countries have been exporting goods to the United States duty free for decades. The agreement lowers the barriers to U.S. goods coming into the region. Demand for plastics in this area is increasing as the trade barriers for U.S. exports begin to decrease. This combination should increase demand for Kentucky plastics. (Sources: The Society of the Plastics Industry, [www.plasticsindustry.org](http://www.plasticsindustry.org) and [www.export.gov](http://www.export.gov)).

Although it currently is only a niche market, one of the brightest spots for growth in the plastics industry is in the area of bio-degradable products. Currently, many plastic products that are disposable have a life expectancy of nearly 100 years. Biodegradable

plastics can have a shelf life of as little time as 60 days to a maximum life of five to six years. Globally, many jurisdictions have moved to either tax or ban such plastic items as thin plastic bags and foam fast-food boxes. As nations struggle to find a solution to their growing plastic disposal problem, many nations are looking to bio-degradable and compostable plastics as the solution to this dilemma. Many nations are experimenting with new production processes in order to produce plastic products that will harmlessly degrade over a short period of time. (Source: Canadian Plastics Industry Association, [www.cpia.ca](http://www.cpia.ca) )

PLA or polylactic acid is a polymer (chemical chains) made from lactic acid formed in the fermentation of cornstarch. PLA polymers are used in plastics that are competitive with or superior to hydrocarbon-based polymers. PLA are completely renewable. Annually, the United States produces between 70 and 80 billion pounds of plastics, mostly from "hydrocarbon" or petroleum-based sources. If corn-based products were used instead, the process would consume 2 billion bushels of corn annually, representing a significant market for U.S. corn.

PLA competes against four different hydrocarbon-based resins: 1) polyethylene; 2) polystyrene; 3) polypropylene; and 4) polyester. Compared to the others, PLA is: 1) clear; 2) glossy; 3) resistant to moisture and grease and is naturally stiff; and 4) can be processed using most conventional techniques and equipment. It can be co-polymerized with other materials and readily accepts fillers.

One of the strengths of PLA is that it can be engineered to be biodegradable in controlled compost situations. Currently, about 25 percent of the total market is appropriate for biodegradable plastics. This is expected to change due to the significant market opportunity for biodegradable plastics. The market for non-biodegradable plastics is also expected to grow in the future.

PLA has been designated as a "new generic fiber" by the Federal Trade Commission, thus, opening the door for increased uses and markets. (Source: Kentucky Corn Growers Association, [www.kycorn.org](http://www.kycorn.org))

**Table 13: NAICS Composition of Kentucky Recycling Facilities 2006**

<b>NAICS Code</b>	<b>Description</b>	<b>Facilities</b>	<b>Employees</b>
325612	Polish and Other Sanitation Good Manufacturing	2	60
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	24	2,432
331314	Secondary Smelting and Refining of Nonferrous Metals	8	772
331423	Secondary Smelting, Refining, and Alloying of Copper	2	33
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	10	1,616
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	7	259
423930	Recyclable Material Merchant Wholesalers	19	685
562920	Materials Recovery Facilities	3	366
811212	Computer and Office Machine Repair and Maintenance	15	2,000

Note: Since many facilities are classified into more than one NAICS code and not all NAICS codes are mentioned, the sum of the 9 industries does not equal the total of all recycling-related facilities.

Source: Kentucky Cabinet for Economic Development.

#### **IV. Business Cost Comparison**

Kentucky has one of the lowest overall costs of doing business in the Eastern United States according to Regional Financial Associates (Economy.com). Regional Financial Associates publishes the *North American Business Cost Review*, which determines the cost of doing business within a state by measuring unit labor costs, energy costs, and state and local taxes. Kentucky ranks as the 14th lowest state for the overall cost of doing business and fifth in the Eastern United States. According to this index, the overall cost of doing business is eight percent (8%) below the U.S. average, and with respect to the cost of energy, Kentucky is significantly below the national average.<sup>25</sup>

**Table 14: Cost of Doing Business for Competitor States (2005)**

	<i>Overall Cost of Doing Business</i>		<i>Unit Labor Cost</i>		<i>Energy Cost</i>		<i>State &amp; Local Taxes</i>	
	<i>Index</i>	<i>Rank</i>	<i>Index</i>	<i>Rank</i>	<i>Index</i>	<i>Rank</i>	<i>Index</i>	<i>Rank</i>
U.S.	100		100		100		100	
Alabama	97	26	99	33	85	22	75	1
Arkansas	89	9	91	12	75	11	95	24
Georgia	95	22	97	27	91	26	91	13
Illinois	101	36	102	42	88	24	96	26
Indiana	89	7	91	14	77	12	91	14
<b>Kentucky</b>	<b>92</b>	<b>14</b>	<b>97</b>	<b>25</b>	<b>67</b>	<b>3</b>	<b>91</b>	<b>15</b>
Michigan	103	40	105	48	95	32	102	37
Mississippi	92	15	92	16	98	33	92	17
Missouri	93	16	96	23	72	7	86	8
North Carolina	85	3	82	2	84	20	93	20
Ohio	100	32	99	31	91	27	113	46
South Carolina	93	19	97	26	84	21	92	19
Tennessee	89	5	89	9	84	18	79	3
Virginia	93	18	97	24	73	9	87	9
West Virginia	96	24	95	20	66	2	122	49

Source: Derived from data provided by *North American Business Cost Review*, 2006 Edition, Prepared by Economy.com, Inc., Updated May, 2007. Note: A ranking of 1 represents the best condition = lowest business cost.

Kentucky ranked 22<sup>nd</sup> in the nation for having the lowest “Business Taxes as a Share of State, Local, and Total and Private Sector GSP, FY 2006” according to a study released in February 2007 by Ernst & Young (<http://www.ernst-young.com>) and titled: “Total State and Local Business Taxes, 50-State Estimates for Fiscal Year 2006.” Kentucky had a total share of 4.9% which was lower than the national average of 5.1%.<sup>26</sup>

Two of the major costs for companies in the recycling industry are energy and labor. Each represents about a third of the cost of smelting production in Kentucky.<sup>27</sup> Labor is a significant cost factor for the aluminum industry as with all manufacturing industries. The following section details how Kentucky compares to the other top aluminum industry states with respect to these business costs.

## Utility Cost

A globally, competitive business environment compels companies to examine the long-term costs of production and distribution, and to focus on regional differences in the net costs of doing business. Among the most significant factors having a direct influence on bottom-line costs is the annual capital that must be committed to utility consumption, which is especially true for the aluminum industry.

Kentucky enjoys a tremendous competitive advantage in the provision of energy, natural gas, and water supply. The state's large coal reserves and their resulting proximity to coal-burning utility plants, its direct location on the interstate natural gas pipeline corridor, and an abundant natural water supply derived from an extensive network of rivers, streams, and lakes, keep Kentucky's utility costs among the very lowest in the nation. Kentucky's electric power cost, in the industrial sector, has ranked the lowest in the nation for six consecutive years.

Approximately ninety-seven percent (97%) of Kentucky's electric power is produced by coal-fired power plants, with the balance generated by hydroelectric dams, fuel oil, and natural gas. Kentucky's large coal reserves ensure abundant supplies of electric power for the future. In turn, a large number of utility providers and oversight by the Kentucky Public Service Commission continue to ensure competitive rates for industrial users. These power distributors are allowed to negotiate lower economic incentive rate contracts. Significant discount rates may be granted to expanding operations.



**Table 15: Average Industrial Electrical Rates 2000 - 2005**

<b>AVERAGE INDUSTRIAL ELECTRICAL RATES FOR COMPETITOR STATES FOR THE YEARS 2000 - 2005</b>						
<b>States</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>
Alabama	4.5	4.2	4.0	3.8	3.8	3.9
Arkansas	4.7	4.2	4.0	4.0	4.4	4.2
Georgia	5.3	4.4	4.0	4.0	4.3	4.1
Illinois	4.6	4.7	4.9	5.0	4.9	5.0
Indiana	4.4	4.1	3.9	4.0	4.1	3.8
<b>Kentucky</b>	<b>3.6</b>	<b>3.3</b>	<b>3.2</b>	<b>3.1</b>	<b>3.0</b>	<b>3.0</b>
Michigan	5.3	4.9	5.0	5.0	5.1	5.1
Mississippi	5.4	4.8	4.5	4.4	4.4	4.1
Missouri	4.5	4.6	4.5	4.4	4.4	4.4
N. Carolina	5.0	4.9	4.8	4.7	4.7	4.6
Ohio	5.1	4.9	4.8	4.7	4.3	4.4
S. Carolina	4.6	4.1	4.0	3.9	3.9	3.7
Tennessee	4.7	4.5	4.3	4.2	4.1	4.1
Virginia	4.5	4.3	4.2	4.1	4.2	3.9
W. Virginia	3.9	3.8	3.8	3.8	3.7	3.8
<b>U.S. Average</b>	<b>5.7</b>	<b>5.3</b>	<b>5.1</b>	<b>4.9</b>	<b>5.0</b>	<b>4.6</b>

Source: Energy Information Administration/Electric Power Annual 2005. Rates are in Cents per KWH.

### **Cost of Labor**

Kentucky had the 19<sup>th</sup> lowest cost of living index for the fourth quarter of 2006 according to the Council for Community and Economic Research (C2ER, <http://www.c2er.org>), formerly ACCRA. Kentucky had an overall index of 95.2 compared to a national index of 100.0. The index is a composite of various household expenses to include, housing, transportation, groceries, health care utilities and day-to-day miscellaneous expenses.<sup>28</sup> A lower cost of living allows Kentucky to have lower labor costs and still provide for an excellent quality of life when compared with the rest of the nation.

**Table 16: Annual Wages, Employees and Establishment Comparison for Recycling Industry Among Competitor States**

<b>Average Annual Wages, Employees and Establishments 2004</b>				
<b>State</b>	<b>Recycling Industry</b>	<b>Number of Employees</b>	<b>Number of Establish.</b>	<b>Private Industry</b>
United States	\$46,377	211,444	15,951	\$36,967
Alabama	\$36,409	2,546	256	\$30,552
Arkansas	\$36,058	1,228	133	\$28,457
Georgia	\$40,618	6,469	481	\$35,147
Illinois	\$45,735	11,760	784	\$39,846
Indiana	\$42,892	5,839	396	\$32,897
<b>Kentucky</b>	<b>\$37,385</b>	<b>3,079</b>	<b>213</b>	<b>\$30,992</b>
Michigan	\$44,458	7,936	521	\$37,917
Mississippi	\$30,452	673	109	\$26,734
Missouri	\$38,657	4,068	332	\$32,690
North Carolina	\$44,894	5,686	442	\$32,556
Ohio	\$45,763	13,937	783	\$34,135
South Carolina	\$30,616	2,232	244	\$29,897
Tennessee	\$25,836	6,653	316	\$32,770
Virginia	\$36,515	3,956	347	\$37,610
West Virginia	\$26,532	581	88	\$27,449

Sources: Derived from data provided by the U.S. Census Bureau, County Business Patterns 2004. <http://www.census.gov/>.  
 Note: Some of the data is incomplete due to incomplete data provided by the Census Bureau.

## **V. Materials Industries - Automobile Relationship**

### **Automobile Industry in Kentucky**

Kentucky has a strong presence in the automobile industry. Kentucky ranks 3rd among the 50 states in total light vehicle production. In 2006, 1,069,926 cars and light trucks were produced in Kentucky, which is almost 10 percent of all cars and trucks manufactured in the United States.<sup>29</sup>

There are four automobile assembly plants in Kentucky employing nearly 16,000 people. Ford has two plants in Louisville that produce the Ford Explorer and Mercury Mountaineer in one plant and the Ford Super Duty F-Series in the other plant. GM has

a plant in Bowling Green that manufactures the Corvette and the Cadillac XLR, and Toyota has a plant in Georgetown that makes the Camry and Avalon sedans. In the fall of 2006, Toyota began production of the Camry hybrid at its Georgetown assembly plant. In addition to the four assembly plants, Toyota's North American Manufacturing Headquarters is located in Erlanger. There are almost 500 auto-related suppliers located in Kentucky with nearly 90,000 employees.

**Table 17: Total Light Vehicle Production in 2006**

<b>State</b>	<b>Total Light Vehicle Production</b>
Michigan	2,279,672
Ohio	1,669,741
<b>Kentucky</b>	<b>1,069,926</b>
Missouri	984,353
Tennessee	699,352
Alabama	698,086
Indiana	657,531
Illinois	470,322
California	428,633
Georgia	303,012

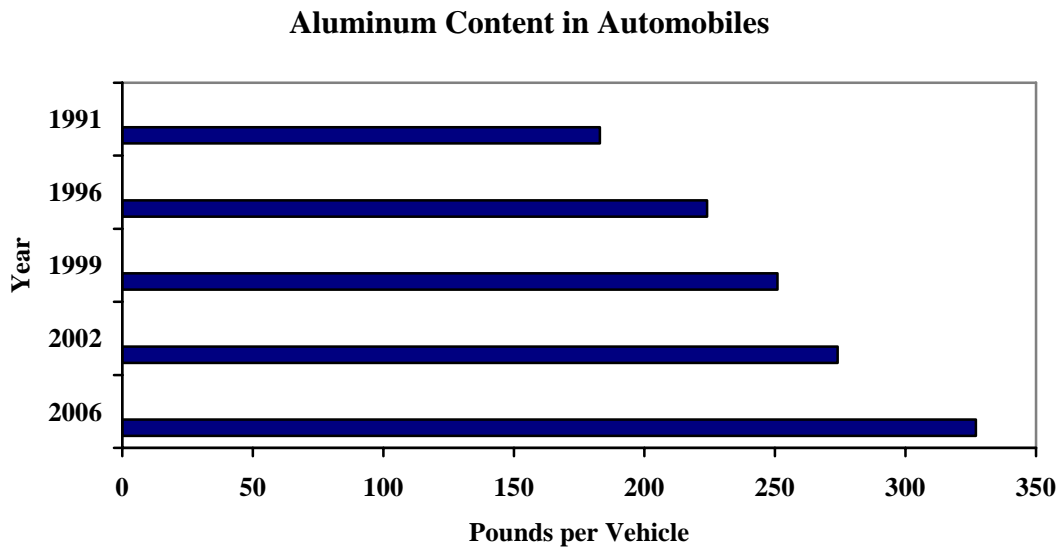
Source: *Automotive News*, <http://www.autonews.com/>

### **Aluminum Usage in Automobiles**

The transportation industry is the largest and fastest growing market for aluminum. In the last decade, aluminum usage has doubled in cars and tripled in SUVs. In 2006, its usage in vehicles was estimated at 327 pounds per unit. It has surpassed plastic and trails only iron and steel as a percentage of vehicle content.<sup>30</sup>

Automakers are increasing the use of aluminum to solve design, engineering, and marketing challenges. Substituting aluminum for steel and iron allows auto manufacturers to decrease vehicle weight and improve fuel economy. Aluminum also offers increased safety performance since it can be 2.5 times stronger than steel and can absorb twice as much crash energy. Increasing the use of aluminum in automobiles also offers environmental benefits. Substituting aluminum for iron and

steel can significantly decrease greenhouse emissions. Approximately 60 percent of all aluminum used in cars is recycled aluminum, and 90 percent of aluminum in autos is recovered and recycled.<sup>31</sup>



### **Auto-related Aluminum Facilities**

The migration of the automobile industry southward and the increasing use of aluminum in motor vehicles has resulted in a number of aluminum-related facilities in Kentucky being auto suppliers. Of the 42 facilities in the seven primary aluminum NAICS codes, 18 are aluminum-related facilities that are considered auto-related, and these establishments employ 4,663 people. Aluminum wheels, aluminum heat exchanger tubing, aluminum ingots and castings, alloys, and aluminum die-cast automotive parts are some of the common products of Kentucky aluminum-related facilities sold to automotive assembly plants and automotive parts manufacturers.

## **VI. Location and Transportation System**

Kentucky's location in the geographical center of the Eastern United States and its extensive highway, air, rail, and waterways transportation systems place the Commonwealth of Kentucky in a strong position to compete in the global marketplace. Over sixty percent of the nation's population, personal income, and manufacturing

business establishments are located within 600 miles of Kentucky's borders. Kentucky's intermodal freight and passenger transportation systems have reached out to provide safe, efficient, and cost-effective access to all points of the globe.

Kentucky is located at the heart of both the aluminum and automobile producing regions in the United States. Over the last 30 years, manufacturers in the auto industry have steadily moved southward, and as a result a new auto corridor has been created that runs southward from Michigan to Alabama, in which Kentucky is located in the center. In 2002, within 500 miles of central Kentucky, there were 4,829 motor vehicle-related manufacturers, including 69 auto assembly plants accounting for 62 percent of the motor vehicle-related manufacturers in the United States.<sup>32</sup> (See appendix for map)

## **Transportation**

A freight distribution network that is efficient, safe, and technologically competitive makes Kentucky an ideal location for businesses needing just-in-time delivery and reliable access to markets and suppliers. Geographically located within a day or two highway travel to over sixty percent of the nation's buying power, Kentucky maintains a continuing six year highway construction and improvement plan that ensures necessary structured growth and regular maintenance.

The [Reason Foundation](#) ranked Kentucky's highways as the 7<sup>th</sup> most efficient in the nation in its *15<sup>th</sup> Annual Performance of State Highway Systems* report. The cost effectiveness for each state is computed by averaging its 12 performance ratios (ratio of each state's statistic to the national average, for 5 financial measures and 7 condition measures), then ranking the states. The report was released in October 2006 and compared the state highway systems from 1984 to 2004.<sup>33</sup>

Kentucky's railroads – the CSX, Norfolk Southern, and Canadian National Railroads - ensure direct service between Kentucky and the major rail centers of the Great Lakes, Gulf of Mexico, and Atlantic Seaboard.

Kentucky is at the center of a port and waterways system that offers globally competitive, inexpensive transport for bulk materials and containerized freight. Kentucky has 1,100 miles of navigable waterway. With access to the junction of the Upper and Lower Mississippi, Ohio, and Tennessee-Tombigbee navigation corridors,

Kentucky has a waterway link to the Great Lakes and Canada, to Mexican and South American markets, and to the deep-draft ports of New Orleans and Mobile for overseas shipments.

Accessibility to major airport services, and safe, efficient air travel for business purposes are well addressed by Kentucky's statewide system of commercial and general aviation airports. Non-stop international flights depart from the Cincinnati/Northern Kentucky International Airport and from the Louisville International Airport.

Kentucky's airports can compete with any in the world. The Louisville International Airport ranked 10th largest airport in the world based on tonnage for cargo according to the July 2006 issue of *Air Cargo World* magazine. In North America, the magazine ranked Louisville International 4th and the Cincinnati/Northern Kentucky International Airport ranked 27<sup>th</sup>.<sup>34</sup>

## **VII. Additional Materials Industries Resources**

### **American Plastics Council**

1300 Wilson Blvd., Arlington VA 22209, 1-800-2-HELP-90 Outside U.S. 703-253-0710  
<http://www.americanplasticscouncil.org/>

### **American Recycler (AR)**

AR is a monthly newspaper serving those in the recycling, salvage and waste industries. It is an excellent source of new and important government policies and regulations affecting these industries. 118 E. Third Street, Suite A, Perrysburg, OH 43551, Phone: (877) 777-0737, Fax (419) 931-0740, ([www.americanrecycler.com](http://www.americanrecycler.com)).

### **Bluegrass State Skills Corporation**

The Bluegrass State Skills Corporation (BSSC), [www.thinkkentucky.com/bssc](http://www.thinkkentucky.com/bssc), was established in 1984 by the General Assembly as an independent, de jure corporation to stimulate economic development through programs of skills training. BSSC provides training grants for the training of workers of Kentucky's new and expanding companies and for skills and occupational upgrade training of workers of Kentucky's existing companies. BSSC acts as a broker by coordinating the resources of providers of skills training and employment services. BSSC also administers any special state appropriation for industry specific training. BSSC is attached to the Cabinet for Economic Development for administrative purposes and in recognition of the relationship between economic development and skills training efforts.<sup>35</sup>

### **Business Industry Recycling Program (BIRP)**

BIRP is a coalition of concerned citizens, businesses and trade associations across the Commonwealth working to promote recycling and “buy recycled programs.” D. Ray Gillespie, Executive Director. Post Office Box 1143, Frankfort, KY 40602, (502) 227-7481, ([www.birp.org](http://www.birp.org)).

### **Canadian Plastics Industry Association (CPIA)**

CPIA is dedicated to advancing the prosperity and international competitiveness of the Canadian plastics industry in an environmentally and socially responsible manner ([www.cpia.ca](http://www.cpia.ca)). Denis Cloutier, Senior Vice-President, 5915 Airport Road, Suite 712, Mississauga, ON L4V 1T1, Tel: (905) 678-7748, Fax: (905) 678-0774.

### **Center for Aluminum Technology (CAT)**

The Center for Aluminum Technology (CAT) was established in 1999 within the College of Engineering at the University of Kentucky. CAT is a multidisciplinary center providing research and educational services to the aluminum industry. Aluminum industry leaders, local officials, University of Kentucky, and the Kentucky Cabinet for Economic Development collaborated to form the nation’s only aluminum research laboratory supported by such a partnership.<sup>36</sup>

### **Center for Manufacturing**

The Center for Manufacturing (CRMS), located in Lexington at the University of Kentucky - [www.crms.uky.edu/crms/index.htm](http://www.crms.uky.edu/crms/index.htm), is renowned worldwide for its research, education, and technical assistance in manufacturing. CRMS provides engineering assistance to approximately 15,000 people in North America and Europe with its staff of professional engineers with extensive industrial experience. CRMS also conducts research on manufacturing systems and provides a wide range of educational opportunities for students and industrial professionals. CRMS has earned praise from organizations such as the Society of Manufacturing Engineers in recent years for its strong emphasis on manufacturing research and education.

Because of CRMS’ capabilities, Toyota Motor Manufacturing selected CRMS to develop a working model of the Toyota Production System. CRMS’ efforts with Toyota resulted in the Lean Manufacturing program, which is an integrated research, education, and technology transfer effort. The CRMS Lean Manufacturing program has trained thousands of people from hundreds of companies throughout the world on the concepts of lean manufacturing. The Lean Manufacturing program includes courses for operating managers and first-line supervisors, customized in-plant training, the International Lean Manufacturing Conference, Lean Manufacturing Network (users group for groups practicing lean manufacturing principles), and a simulation that demonstrates the effect of lean manufacturing implementation.<sup>37</sup>

**ConnectKentucky**

ConnectKentucky is an independent non-profit organization that promotes technology-based economic development in the Commonwealth. Its *No Child Left Offline* is an innovative program that puts quality computers in the homes of students that need them most. It accomplishes this goal through the support of public and private partners.

1020 College Street, Bowling Green, KY 42101, Phone 270-781-4320,  
<http://www.connectkentucky.org>.

**Division of Waste Management (DWM)**

DWM is a state government agency operating under the umbrella of the Kentucky Department for Environmental Protection. The division mission is to protect human health and the environment by minimizing adverse impacts on all citizens of the Commonwealth through the development and implementation of fair, equitable and effective waste management programs. 14 Reilly Road, Frankfort, KY 40601, Phone: (502) 564-6716, Fax (502) 564-4049, ([www.waste.ky.gov](http://www.waste.ky.gov)).

**Earth 911**

Earth 911 is an organization with a mission to empower the public with community-specific resources to improve their quality of life. Its goal is to achieve a partnership between the public and private sectors to protect the environment in cost effective and sustainable methods through the use of a user-friendly network. 14646 North Kierland Boulevard, Ste. 100, Scottsdale, AZ 85254, Phone: (480) 889-2650, Fax: (480) 889-2660. ([www.earth911.org](http://www.earth911.org))

**Institute of Scrap Recycling Industries, Inc., (ISRI)**

ISRI is an association of companies that process, broker, and consume scrap commodities. 1615 L Street, NW, Suite 600, Washington, DC 20036-5610, Phone: (202) 662-8500, Fax: (202) 626-0900, ([www.isri.org](http://www.isri.org)).

**Mid-America Plastics Partners, Inc. (MAPP)**

MAPP 7321 Shadeland Station Way, Suite 285, Indianapolis, IN 46256. (317) 913-2440. <http://www.mappinc.com>

**National Association for PET Container Resources**

The National Association for PET (polyethylene terephthalate) Container Resources (NAPCOR) is the trade association for the PET plastic industry in the United States and Canada. NAPCOR was founded in 1987. PO Box 1327 Sonoma, CA 95476, Voice: (707) 996-4207, <http://www.napcor.com>

## **Resource Recycling**

Resource Recycling is a journal for recycling and composting professionals. It is a monthly magazine that provides the latest information about post-consumer waste recovery efforts. P.O. Box 42270, Portland, OR 97242-0270, (503) 233-1305. <http://www.resource-recycling.com/pru.html>

## **Secat, Inc.**

Secat, [www.secat.net](http://www.secat.net), is a cooperative effort involving the aluminum industry, University of Kentucky, Kentucky Cabinet for Economic Development, and the U.S. Department of Energy. Secat is a for-profit business dedicated to facilitating research and development of innovative technology, processes, and products for the aluminum industry. Secat was formed in response to the megatrend of the disappearance of company-sponsored research and development facilities in the aluminum industry. Secat offers an alternative to companies who want to embark on research efforts but lack the necessary resources. Secat is located at the University of Kentucky Coldstream Research Campus, where it provides the space, hardware, and support services for individual companies and university researchers to work together on collaborative projects.

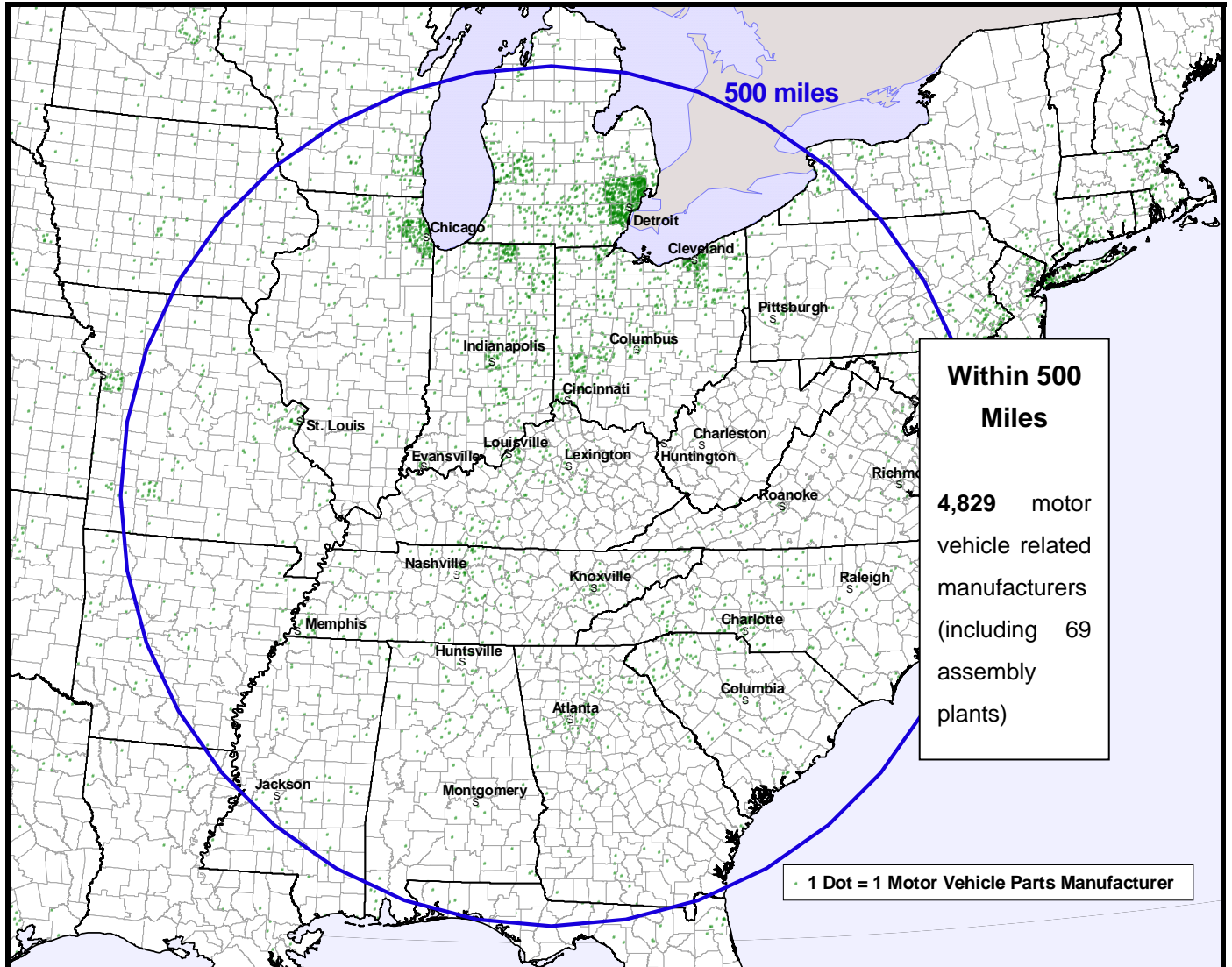
Secat performs proprietary and general research for individual companies, joint efforts by two or more companies, and industry-wide research projects. It also acts as a broker for aluminum companies identifying research needs, coordinating funding for projects, and allocating the funding to the lowest cost research provider. By working with universities and the Department of Energy, Secat is able to provide aluminum companies access to the intellectual resources at national and university laboratories. Because Secat recognizes the importance of attracting and training students for science and engineering occupations, it aids the education of multidisciplinary undergraduate, graduate, and postgraduate programs to develop future leadership in aluminum technology.<sup>38</sup>

## **The Society of the Plastics Industry**

The Society of Plastics Industry, founded in 1937, is the trade association representing one of the largest manufacturing industries in the United States. SPI's members represent the entire plastics industry supply chain, including processors, machinery and equipment manufacturers and raw materials suppliers. 1667 K St., NW Suite 1000, Washington, DC 20006, Phone (202) 974.5200, Fax (202) 296.7005. [www.plasticsindustry.org](http://www.plasticsindustry.org)

# APPENDIX

# Motor Vehicle Related Manufacturers within 500 Miles of Central Kentucky



Map Date: 6/27/2005. Source: U.S. Census Bureau, County Business Patterns 2001-2002, Issued December 2004.

## Kentucky's Recycling-Related Facilities (2006)

Facility Name	Product Description	Employment
<b>Ashland</b>		
DTR, Inc.	Tire recycling, mfg barrell stabilizer, playground rubber, cow bedding, rubber mulch, pear-n-place, tire transporter.	12
<b>Barbourville</b>		
Truseal Technologies	Sealants for insulated glass windows	280
<b>Berea</b>		
Novelis Corporation	Ingots made from recycled aluminum cans	109
<b>Bowling Green</b>		
Owl's Head Alloys, Inc.	Melt recycled aluminum products	60
<b>Brooks</b>		
Kentucky Solite Corp., Div. Northeast Solite Corp.	Lightweight aggregate shells	37
<b>Calvert City</b>		
Estron Chemicals, Inc.	Acrylic emulsions & resins for paint industry	48
ISP Chemicals, LLC, Div. International Specialty	Acetylenic specialty chemicals	512
Noveon, Inc.	Carbopol polymers	88
<b>Carrollton</b>		
Arkema, Inc.	Organic & inorganic tin chemicals	200
<b>Catlettsburg</b>		
Calgon Carbon Corp.	Granular activated carbon	150
Special Metals Corp., A PCC Company	Nickel alloys	165
<b>Central City</b>		
Re-Tek, Inc.	Rubber products - Buffing, granules, and powders produced from processing various scrap rubber. Products used for rubberized athletic track and playground surfacing, synt.	25
<b>Cold Spring</b>		
Fabritec International Corporations	Corporate headquarters and dry cleaning chemicals	40
<b>Crestview Hills</b>		
Waltz Business Systems	Retail and service of office machines and technology, copies printers, servers and computers.	38

<b>Cynthiana</b>		
STI Manufacturing Co.	Wiring harnesses, automotive lights recycling, assembly & packaging	12
<b>Eddyville</b>		
Exel	Processing, blending and grinding of plastics and chemicals	42
<b>Edmonton</b>		
Sumitomo Electric Wintec America, Inc.	Magnet wire products	110
<b>Erlanger</b>		
Computer Services, Inc.	Data processing services	17
<b>Florence</b>		
Camco Chemical Co., Inc.	Chemicals & detergents	87
Signode Plastic Recycling Alliance. Div	Plastic recycling	37
Illinois Tool Works, Inc.		
<b>Frankfort</b>		
RJ Industries, LLC	Minority owned plastic injection molder for the auto industry. Plastic recycling, service parts production and staffing service.	55
<b>Georgetown</b>		
Green Metals, Inc.	Process scrap metal, ferrous & non-ferrous, including transportation	16
<b>Ghent</b>		
Gallatin Steel	Hot rolled coiled steel, flat rolled steel	423
MultiServ	Steel reclamation service	45
RECMIX of Kentucky	Process stainless steel slag	25
<b>Hebron</b>		
Pomeroy IT Solutions, Inc.	Computer services	266
Pomeroy IT Solutions Sales, Inc.	Computer service and sales	32
Pomeroy Select Integration Services, Inc.	Headquarters, computer service	101
<b>Henderson</b>		
Audubon Metals, LLC	Heavy metal separator and secondary specification aluminum alloy producer. Recycling process of automobile shredder residue into new aluminum castings.	160
Eastern Alloys, Inc.	Zinc alloy	40
Hydro Aluminum	Aluminum extrusion billet and log	52
Shamrock Technologies, Inc.	Teflon recycling micronized polytetrafluoroethylene,	65

	dry lubricant powder.	
<b>Hillview</b>		
Best Buy Stores, LP	Computer products repair center	550 (announced)
<b>Hopkinsville</b>		
Agri-Chem, Inc.	Blend chemicals, fertilizers & seed	70
Amfine Chemical	Specialty plastic additives	44
Cornerstone Information Systems, Inc.	Computer and technology services and products including servers, desktops, networking, Internet security, firewalls & VPN's, hardware repair, software and website development.	16
Plymouth Extruded Shapes, Div. Plymouth Tube Co.	Stainless, carbon & alloy steel extrusions; special structural titanium & nickel base shapes.	94
<b>Independence</b>		
Magni Industries, Inc., Subsidiary of the Magni Group, Inc.	Chemical preparations; corrosion resistant coatings	20
<b>Lawrenceburg</b>		
Dlubak Glass Company	Glass recycling for automotive & window fabricators. Recycling of laminated windshields, backltds, side lights automotive headlamps & insulated window glass.	11
General Cable	Telephone cable, datacom cable	436
<b>Lexington</b>		
Pomeroy Select Integration Services, Inc.	IT services	31
Silrec Corporation	Manufactures silicon wafers & recycles other silicon products	16
<b>Liberty</b>		
Calhoun Creek Trading Co., Inc.	Machine shop: general machining: drilling, cutting & honing; welding; ID, OD & surface grinding; lathe & mill work: livestock handling equipment; machinery parts	10
<b>London</b>		
Jasper Iron & Metal Co., Inc.	Scrap Metal and iron processing, aluminum smelting	12
<b>Louisville</b>		
ASUS Technology Service, Inc.	Computer repair and help desk	182
Bluegrass Kesco, Inc.	Water treatment products & technical support	28

DuPont Co.	Refrigerants, Intermediates	148
Eckart America Corporation	Metallic aluminum paint pigments, powders & paste	130
Electro Tech Service, Inc.	Computer repair & maintenance services	100
Forth Technologies, Inc.	Blended specialty chemicals & ink pigments	40
Freedom Metals, Inc.	Ferrous, nonferrous, industrial & precious scrap processing & recycling base metals	60
H L Lyons Co.	Custom X-ray equipment, radiation shielding, fabricated lead enclosures & metal fabricating	100
Industrial Services of America, Inc.	Headquarters, scrap metal & paper recycling, solid waste management services, waste handling equipment sales and service.	105
Jabil Global Services, Inc.	Electronics repair and logistics facility	337
Leonard Brush & Chemical Co.	Liquid cleaning agents & brushes, manufacture of custom made brushes for industry.	20
Posdata Inc.	Electronic repair center for point of sales, printers and other electronics	27
River Metals Recycling, LLC	Scrap metal recycling center	180
Roller Die & Forming Co., Inc.	Custom roll formed metal shapes, tool & die.	51
Russ Tech, Inc.	Concrete additives and surface coatings as well as sodium glucoheptonate and other commodity chemicals, also a distributor of LiquiDow Calciu.	15
Smurfit Stone Container Enterprises, Div. Smurfit-Stone Container	Paper recycling	15
Trillium Industries, Inc.	Computer service center	207
<b>Madisonville</b>		
Electro Cycle Inc., Div. Metal Exchange Corp.	Aluminum recycling	40
<b>Manchester</b>		
Denny Beckner & Co.	Scrap metal processing & recycling	12
<b>Mayfield</b>		
Continental Tire North America, Inc.	Mixed rubber compounds, tire warehousing	40
<b>McHenry</b>		
McHenry Brass, Inc.	Bronze castings, brass bushings & copper base alloys	13
<b>Morehead</b>		

Diamond Forest Resources, Inc.	Manufactures new custom pallets, graded lumber, recycled pallets, re-manufactured pallets, and skids. Distributors of sketch film and plastic pallets	40
<b>Morgantown</b>		
Aleris International	Aluminum recycling	160
Transteck Recycling, Inc.	Metal recycling	50 (announced)
<b>Murray</b>		
Vanderbilt Chemical Corp., Div. R T	Industrial chemical additives & petroleum product accelerators.	78
Vanderbilt Company, Inc.		
<b>Newport</b>		
River Metals Recycling, LLC	Scrap metal recycling	43
<b>Owensboro</b>		
Dahl & Groezinger, Inc.	Scrap iron, ferrous & nonferrous metal processing, export scrap.	20
Resort Management, Inc.	Computer & reservation service center	21
<b>Paris</b>		
Mallinckrodt-Baker, Inc.	High purity chemicals	250
<b>Princeton</b>		
Special Metals Powder Division, Special Metals Corporation.	Metal powder & nickel base metal alloy billets	90
<b>Radcliff</b>		
Pulau Electronics Corporation	Provide computer training, support, and maintenance	75
<b>Richmond</b>		
Blue Grass Chemical Agent Destruction Plant	Chemical weapons destruction, administrative management support	45
The Okonite Company	Insulated electrical cable	300
<b>Shelbyville</b>		
Ryerson, Inc.	Aluminum & stainless steel processing	59
<b>Smithfield</b>		
Safety-Kleen Systems, Inc.	Industrial waste management. Energy recovery/recycling of hazardous and non-hazardous wastes.	101
<b>Somerset</b>		
Jondy Chemicals, Inc., Ultrashield Div.	Flame retardant chemicals; stain protectors; stain resistant mattress pads & leather protection care, wood protection care.	34
Somerset Recycling Service, Inc.	Cardboard and plastic recycling; waste reduction	80

	programs, recycling equipment	
<b>South Union</b>		
Precision Strip, Inc., Plant 3	Steel, aluminum & copper processing & slitting service.	107
<b>Tomkinsville</b>		
Belden CDT Electronics Division	Electronic wire and cable	230
<b>TOTAL</b>		
<b>8,292</b>	<b>Employees</b>	<b>8,292</b>
<b>83</b>	<b>Facilities/Plants</b>	<b>83</b>

**Introduction and Methodology:** The Kentucky industry reports provide a list of facilities (with 10 or more employees) normally associated with Cabinet programs designed to locate and retain industry. Most information is taken directly from surveys completed by each facility or from phone or personal contact with the facility. Survey information is collected on an annual basis. Some facilities do not fully complete the survey instrument and in some cases incorrectly complete surveys. Facility name, address, location, product or service, employment and other information may change and often does change between annual survey attempts. While all attempts are made to capture changes between annual surveys from data provided by facilities, local economic development contacts, media announcements, and Cabinet programs designed to locate and retain industry, no guarantee can be made that changes will be discovered.

**Disclaimer:** The information provided herein by the Kentucky Cabinet for Economic Development is believed to be accurate but is not warranted and is for informational purposes only. While all attempts are made to insure the correctness and accuracy of information in this report and to make corrections and change errors brought to our attention, no representation or guarantee, express or implied, is made as to the accuracy of the information presented. Any information provided in this report is provided without assurances or warranties and should not be relied upon as fact. The Kentucky Cabinet for Economic Development assumes no liability for the accuracy of the information contained in this report.

## Endnotes

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- <sup>9</sup> Kentucky Economic Development Cabinet, *Exports 2005 Kentucky*.
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<sup>31</sup> Jackson, Les. *Aluminum's Qualities Make for Safer, Light Vehicles of the Future*, The Washington Times, Aluminum Association.

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<sup>33</sup> Hartgen, David T., Ph.D., P.E., and Karanam, Ravi K., *15th Annual Performance of State Highway Systems 1984-2000*, The Reason Foundation, October, 2006.

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<sup>35</sup> Bluegrass State Skills Corporation, Kentucky Cabinet for Economic Development, <http://www.thinkkentucky.com/bssc/>.

<sup>36</sup> Center for Aluminum Technology, <http://www.engr.uky.edu/cat>.

<sup>37</sup> Center for Manufacturing Systems, College of Engineering, University of Kentucky, <http://www.crms.engr.uky.edu/>.

<sup>38</sup> Secat, Inc., <http://www.secat.net>.