

## EPAct Tax Aspects of Logistics Clusters

*By Charles R. Goulding, Andressa Bonafe, and Daniel Audette*

In a recently published book, Yossi Sheffi, Professor of Engineering Systems at MIT and Director of the MIT Center for Transportation and Logistics, presents an outstanding analysis of logistics clusters. *Logistics Clusters: Delivering Value and Driving Growth*<sup>1</sup> is a response to the lack of knowledge and understanding of such hubs as well as an attempt to help governments and companies take better advantage of the benefits generated by these entities.

According to Mr. Sheffi, major geographic concentrations of logistics related business activities, the logistics clusters, have created a very favorable environment for companies operating in this industry. Energy intensive facilities and rising sustainability standards from customers, however, are pushing these companies to walk an extra mile in their efforts to enhance competitiveness. EPAct tax savings are available to assist them in the transition toward energy efficient technology.

### **EPAct Tax Savings**

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Pursuant to Code Sec. 179D, as enacted by the Energy Policy Act of 2005 (EPAct)<sup>2</sup>, properties that make qualifying energy-reducing investments in new or existing locations can obtain immediate tax deductions of up to \$1.80 per square foot. If the building project does not 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; heating, ventilating and air conditioning (HVAC); and the building envelope. The building envelope comprises of every item on the building's exterior perimeter that touches the outside world including roof, walls, insulation, doors, windows and foundation. The following table exemplifies potential benefits available to prominent logistics clusters.

**Exhibit 1** illustrates the potential EPAct tax savings for some of the major logistic cluster companies.

### **Understanding Logistics Clusters**

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One may wonder why some regions stand out as centers for particular industries. Silicon Valley, Hollywood, Wall Street, Napa Valley, and "Bio Cambridge" are well-known examples of the geographic concentration of economic activities, or economic clustering. The basic notion behind this phenomenon is that clusters enhance competitiveness due to increased productivity. The agglomeration of specialized suppliers and service providers, the concentration of industry-specific labor force and knowledge, along with a favorable environment are a few examples of "positive externalities" that explain the competitive advantage of clusters. The combination of these characteristics explain both the creation and endurance

of clusters: once a critical threshold is reached, the region acquires a key position in a given industry, making it considerably more advantageous for companies to operate in this particular location.

Logistics clusters include three types of companies:

- i. Logistics services providers;
- ii. Companies with logistics-intensive operations;
- iii. The logistics operations of industrial firms.

In many cases logistics clusters grow around major transportation hubs: ports, airports, significant intersections and rail hubs. The co-location of firms can be understood as a result of both transportation and asset sharing advantages. With regards to transportation, the higher freight volume makes it possible to use larger conveyances and consequently reduce costs. Similarly, more frequent movements in and out the cluster allow for bigger returns. Resources-wise, it is possible to share both equipment and labor, particularly as logistics firms have relatively similar needs regarding warehousing and transportation. In a nutshell, logistics clusters work on a virtuous circle: the more companies co-locate, the more advantages arise.

In the U.S., five examples of leading logistics clusters deserve our attention:

### **1. Memphis, TN**

Logistics firms are attracted to Memphis by a combination of favorable conditions, both geographic and

economic. On the one hand, Memphis's strategic east-central location facilitates access from and to the East and West coasts, optimizing distances. On the other hand, the city's time zone further increases efficiency (due to time differences, a flight leaving Memphis at 3 a.m. can be either in Washington, D.C. or in San Francisco by 6 a.m.). Additionally, favorable weather conditions, away from extreme temperatures and natural disasters, reduce the risk of interferences in schedules and deadlines.

FedEx's move to Memphis, in 1973, contributed greatly to the cluster formation. The company's necessity of ever-larger aircrafts and ever-growing fleet was crucial for the consolidation of the aerotropolis<sup>3</sup>. Since then, Memphis developed an air-freight cluster and therefore attracted a major number of logistics firms.

Mallory Alexander International Logistics, Flextronics, Medtronic's, and Siemens Medical Systems are a few examples of companies that take advantage of Memphis's combination of high quality industry-specific services and very favorable geographic conditions.

### **2. Louisville, KY**

United Parcel Service Inc. (UPS) Worldport Air Hub in Louisville is a very telling example of the concentration of logistics activities. Worldport is the largest fully automated package handling facility in the world. An average of 1.6 million packages is processed every day in a 5.2 million square feet facility.

UPS's Air Hub has attracted various companies to Louisville, particularly those with highly time-sensitive shipments. The company has set a Technology and Logistics Center in the city, which comprises more than 3 million square feet and hosts inventories from more than 70 of UPS Supply Chain Solutions' customers from the high-tech and healthcare sectors. It includes specialized services, such as product testing and repair, critical parts deployment, and product configuration.

### **3. Alliance Texas Park (Dallas, TX)**

Logistics Parks are a distinctive type of agglomeration, easily identifiable by their ownership and geographic property limits. They can be developed by real estate investment trusts (REIT), private companies, or government agencies. The Alliance Texas Park in Dallas and the Center Point Park in Chicago are good examples of concentration in the logistics industry.

The Alliance Texas Park is anchored by the Alliance Global Logistics Hub, which consists of a high quality multi-modal transportation infrastructure. It includes the Fort Worth Alliance Airport, world's first 100% industrial airport, BNSF Railway's Alliance Intermodal Facility, two Class I rail lines, and different highways. This very favorable environment has attracted more than 220 companies, which either run their own logistics operations at the Park or use the services of one of the many third-party logistics providers in the cluster (a few examples are: AmeriCold, BNSF Logistics, Ceva, DSC Logistics, Exel

Logistics, KFS, PT, Ryder, Trans-Trade, and UPS).

### **4. Center Point Park (Chicago, IL)**

Chicago's CenterPoint Intermodal Center-Joliet ("CIC-Joliet") is the largest master-planned inland port in the country, strategically located in relation to major transportation infrastructure. The Park hosts major logistics companies, such as DCS Logistics, Maersk, Sanyo Logistics, and Alliance 3PL, among others.

### **5. Raritan Center Business Park (Middlesex County, NJ)**

Federal Business Centers' Raritan Center Business Park is one of New Jersey's most widely selected business parks, offering 15 million square feet of office space, flex space, and warehouse/distribution space for lease. It hosts hundreds of companies – Fortune 500 companies, Global 500 companies, and market leaders from every business sector.

The business park is locally situated to serve major markets in the Northeast and is accessible by multiple major highways, by railway, and by sea. This strategic location, combined with high quality infrastructure, has led to the constitution of a regional logistic cluster where industry-leading trans-loading, warehousing, and packaging services are available. FedEx, United Parcel Service, TNT Logistics, and Eagle Global Logistics are a few examples of companies acting in the location.

## **Energy Efficiency in the Logistics Clusters**

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Logistics companies' facilities are energy intensive. The necessity of large warehouse spaces means high electricity consumption, even more so when special temperature and humidity conditions are required. In this scenario, potential energy cost savings cannot be neglected. Companies in clusters enjoy significant comparative advantage in relation to those located elsewhere. Intra-cluster competition, however, is still a challenge and opportunities for differentiation lay on every detail. Enhancing energy efficiency is an outstanding opportunity to reduce costs and improve a company's performance.

Warehouse facilities can reduce energy costs while earning significant tax benefits<sup>4</sup>. EAct lighting tax incentives can be achieved on a stand-alone basis if the warehouse space wattage is reduced at least 50 percent as compared to the ASHRAE 90.1 2001 wattage standard (1.2 watts per square foot). HVAC and building envelope EAct deductions are also available but conditioned on an IRS-approved building energy simulation model. In most cases, dry warehouses that reduce wattage to approximately 0.45 per square foot (0.50 with sensors) qualify for maximum \$1.80 per square foot tax incentives.

New energy-efficient technologies are available to help logistics companies reduce energy consumption and qualify for EAct tax deductions. LED lighting, for example, lasts forty times longer than traditional technologies and uses one-tenth the

electricity that today's incandescent light bulbs use. Different from fluorescent lamps, which don't function well in cold environments, LEDs are a particularly good solution for cold storage. Another major advantage of LEDs is their ability to be integrated with automated systems, which segment and control lighting usage according to necessity.

Natural gas heaters are also a good investment. Large shale gas fields, such as Marcellus, Barnett and Utica, have increased the supply of natural gas in the U.S., driving its price down. New natural gas heaters are generally superior to previous generations making EAct savings a possibility, especially when considering non-conditioned warehouses. When combined with energy-efficient lighting, modern heaters are likely to qualify for at least \$1.20 per square foot deductions<sup>5</sup>. Robotic technology, which increase productivity and reduce the need for human occupancy and lighting, can also favor EAct savings since reduced energy needs contribute to a better performance when comparing new equipment to a 2001 reference building.

Raritan Center Business Park has been at the forefront of energy efficiency improvements. In 2009, Federal Business Center launched an energy efficiency upgrade effort, aimed at modernizing its buildings. A combination of energy cost reduction, New Jersey Smart Start Utility Rebates and EAct Federal Tax savings was used to support retrofits of more than 3 million square feet. T8, T5, induction, and LED lighting as well as natural gas

heating units are examples of energy-efficient technologies installed. Federal Business Centers has received more than \$800,000 in EAct tax deductions, according to Ray Willer, president of RFW Clean Energy Consulting<sup>6</sup>.

### **Supply Chain Sustainability Programs**

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As third-party service providers, logistics companies are directly concerned by supply chain sustainability programs implemented by their customers. The remarkable multiplication of such initiatives in recent years is already changing the way business is done, as sustainability gains increased strategic importance.

Major companies from different industries have implemented programs to measure suppliers' environmental performance. Initiatives have different designs and function differently - Wal-Mart, for instance, determined 15 Supplier Assessment questions in four categories, namely energy and climate, materials efficiency, nature and resources and people and community<sup>7</sup>; similarly, Procter & Gamble developed a "Supplier Sustainability Scorecard" to assess the environmental footprint of its business partners<sup>8</sup>. What all programs have in common, however, is a new, holistic approach to sustainability, encompassing the totality of the production cycle, from growing raw material to consumer's disposal. PepsiCo<sup>9</sup>, Baxter International's<sup>10</sup>, Target<sup>11</sup>, and PVH/Warnaco<sup>12</sup> are a few examples of companies with Supplier

Sustainability Programs that follow this same logic.

Warehousing and transportation are key components of every production cycle and therefore a recurrent target of suppliers' sustainability initiatives. Logistics companies must quickly enhance their environmental performances in order to respond to rising sustainability standards and expectations.

### **Conclusion**

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Logistics companies located in clusters such as Memphis, Louisville, Dallas, and Chicago, enjoy significant comparative advantage. The nature of their business, intra-cluster competition, and supply chain sustainability programs, however, should lead them to consider energy efficiency measures. EAct tax savings are available to assist logistics companies in their change transition to more efficient technology.

**Exhibit 1:**

Property	Total Square Footage	Lighting		HVAC	Building Envelope	Total
		Minimum Deduction	Maximum Deduction	Maximum Deduction	Maximum Deduction	
<b>FedEX (Memphis, TN)</b>	30,500,000	\$ 9,150,000	\$ 18,300,000	\$ 18,300,000	\$ 18,300,000	\$ 54,900,000
<b>United Parcel Service Inc. (Louisville, KY)</b>						
Worldport Facility	5,200,000	\$ 1,560,000	\$ 3,120,000	\$ 3,120,000	\$ 3,120,000	\$ 9,360,000
Technology and Logistics Center	3,300,000	\$ 990,000	\$ 1,980,000	\$ 1,980,000	\$ 1,980,000	\$ 5,940,000
<b>CenterPoint Intermodal Center-Joliet (Chicago, IL)</b>						
Wal-Mart	3,400,000	\$ 1,020,000	\$ 2,040,000	\$ 2,040,000	\$ 2,040,000	\$ 6,120,000
DCS Logistics	1,022,000	\$ 306,600	\$ 613,200	\$ 613,200	\$ 613,200	\$ 1,839,600
Georgia Pacific	1,001,200	\$ 300,360	\$ 600,720	\$ 600,720	\$ 600,720	\$ 1,802,160
Maersk	740,520	\$ 222,156	\$ 444,312	\$ 444,312	\$ 444,312	\$ 1,332,936
Potlatch, Inc	624,000	\$ 187,200	\$ 374,400	\$ 374,400	\$ 374,400	\$ 1,123,200
Bissel Home Care	500,000	\$ 150,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
Sanyo Logistics	400,000	\$ 120,000	\$ 240,000	\$ 240,000	\$ 240,000	\$ 720,000
McKesson Pharmaceuticals	400,000	\$ 120,000	\$ 240,000	\$ 240,000	\$ 240,000	\$ 720,000
Alliance 3PL	400,000	\$ 120,000	\$ 240,000	\$ 240,000	\$ 240,000	\$ 720,000
California Cartage, Inc	213,500	\$ 64,050	\$ 128,100	\$ 128,100	\$ 128,100	\$ 384,300
Partners Warehouse	200,000	\$ 60,000	\$ 120,000	\$ 120,000	\$ 120,000	\$ 360,000
<b>AllianceTexas (Dallas, TX)</b>	1,874,000	\$ 562,200	\$ 1,124,400	\$ 1,124,400	\$ 1,124,400	\$ 3,373,200
<b>Raritan Center Business Park</b>	15,000,000	\$ 4,500,000	\$ 9,000,000	\$ 9,000,000	\$ 9,000,000	\$ 27,000,000
<b>Totals:</b>	<b>64,775,220</b>	<b>\$ 19,432,566</b>	<b>\$ 38,865,132</b>	<b>\$ 38,865,132</b>	<b>\$ 38,865,132</b>	<b>\$ 116,595,396</b>

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<sup>1</sup> Yossi Sheffi, *Logistics Clusters: Delivering Value and Driving Growth*, Cambridge, Mass.: MIT Press, 2012.

<sup>2</sup> Energy Policy Act of 2005 (P.L. 109-58).

<sup>3</sup> Charles R. Goulding and Charles G. Goulding, *The EAct Tax Aspects of the Aerotropolis*, available at <http://www.energytaxsavers.com/articles/Article%20-%20The%20EAct%20Tax%20Aspects%20of%20the%20Aerotropolis.pdf>

<http://www.energytaxsavers.com/articles/Article%20-%20The%20EAct%20Tax%20Aspects%20of%20the%20Aerotropolis.pdf>

<sup>4</sup> Charles R. Goulding and Charles G. Goulding, *Warehouses Cut Energy Bills and Taxes*, Building Operating Management, July 2012, at 36.

<sup>5</sup> Charles R. Goulding, Andrea Albanese and Charles G. Goulding, The time is now for natural gas heaters and EAct tax deductions, CORP. BUS. TAX'N MONTHLY, March 2012, at 15.

<sup>6</sup> Lindsay Audin, *Section 179D Rules Mean Clock is Ticking on EAct Deductions*, Building Operating Magazine, Oct. 2012. Available at <http://www.facilitiesnet.com/powercommunication/article/Section-179D-Rules-Mean-Clock-Is-Ticking-On-EAct-Deductions--13518>

<sup>7</sup> Charles Goulding, Jacob Goldman and Christopher Winslow, *The EAct and Alternative Energy Tax Aspects of Wal-Mart's Supplier Sustainability*

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<sup>8</sup> Charles R. Goulding, Charles G. Goulding and Andressa Bonafe, *The Tax Aspects of the Procter & Gamble Sustainability Program*, to be published.

<sup>9</sup> Charles R. Goulding, Charles G. Goulding and Jennifer Pariente, *The Tax Aspects of the PepsiCo Sustainability Supply Chain*, COROP. BUS. TAX'N MONTHLY, Nov. 2012, at 15.

<sup>10</sup> Charles R. Goulding, Jennifer Pariente and Charles G. Goulding, *The Tax Aspects of the Baxter International Medical Device Sustainability Supply Chain*, COROP. BUS. TAX'N MONTHLY, Nov. 2012, at 11.

<sup>11</sup> Charles R. Goulding, Andressa Bonafe and Raymond Kumar, *The Tax Aspects of Target's Corporate Responsibility Program*, to be published.

<sup>12</sup> Charles R. Goulding, Andressa Bonafe and Andrea Albanese, *The Tax Aspects of PVH and Warnaco's Corporate Environmental Policy*, available at [http://www.energytaxsavers.com/articles/Article\\_-\\_The\\_Tax\\_Aspects\\_of\\_PVH\\_and\\_Warnaco%27s\\_Corporate\\_Environmental\\_Policy.pdf](http://www.energytaxsavers.com/articles/Article_-_The_Tax_Aspects_of_PVH_and_Warnaco%27s_Corporate_Environmental_Policy.pdf).