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## Understanding the Current Trends in Plastics Recycling

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This paper is the result of a joint research initiative between EMG-Europe, EMG-China and USA Strategies.

## Introduction

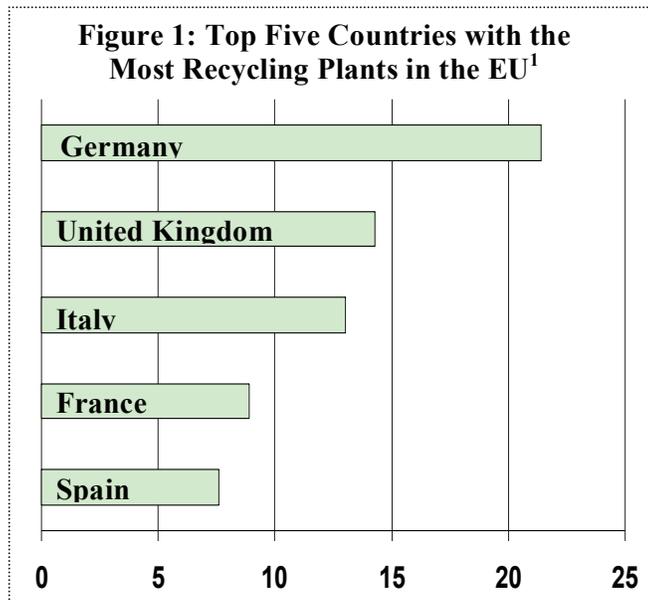
The demand for plastics continues to grow in the U.S., Europe and China, but each country's approach to recycling is radically different. For plastics manufacturers, the shifting trends in recycling will have a sizable impact on their bottom line. To understand and successfully navigate the recycling trends, manufacturers must study current consumer attitudes and the role the government and private institutions play in the global recycling debate.

## Overview of Plastic Recycling in Europe

Europe produces more than 21 million tons of post-consumer plastic waste every year and only 16.5% is recycled. Within the plastics market, the packing industry is the largest consumer of plastic in Europe, making up 37 percent (15 million tons) of the plastics market.<sup>1</sup>

Industry leaders in Europe agree that while consumer interest in the environment is high, government programs are critical for successful recycling. In Germany, after the launch of a government campaign to recycle plastics, consumer participation increased. Many EU countries have seen recycling rates increase after joining the EU and implementing the EU recycling legislation.

Strict regulations from Europe's "End of Life Directive", in which manufacturers must take more responsibility for the processing of waste from their products, has also had a sizeable impact. For example, the End of Life Directive has led to design innovations that allow products at the end of their life cycle to be disassembled and reused more easily.



## Buying Recycled Products

Industry experts agreed that consumers are willing to buy products made from recycled materials as long as the product looks, feels and costs the same as non-recycled-based products. However, very few consumers are willing to pay extra simply because a package is made from recycled material.

<sup>1</sup> [ec.europa.eu/environment/etap/pdfs/howtorecyclemoreplastics.pdf](http://ec.europa.eu/environment/etap/pdfs/howtorecyclemoreplastics.pdf)

### **The NOVPOL Project**

Despite the gains in recycling rates from government legislation, there are still hurdles to plastics recycling. Most recycling plants must carefully sort plastics by hand because the different properties of each polymer require different recycling techniques. The EU has launched "NOVPOL", a research initiative across several European countries that aims to create a recycling system that can recycle a mixture of at least five different polymers<sup>2</sup>.

The NOVPOL initiative is scheduled to be completed in the summer of 2007. If successful, recycling plants will be able to increase the rate at which they process plastics, making plastics recycling more economical and efficient.

### **Outlook for E.U. Recycling**

General interest in the environment continues to encourage consumers to recycle, but the main motivation for sustained, successful recycling rates has been government legislation. Industry experts agree that the rate of recycling in Europe will continue to increase due to government legislation. Going forward, initiatives like NOVPOL will allow Europe to increase their rate of recycling plastics and demand will continue for improved product lifecycles.

### **Overview of Plastic Recycling in the U.S.**

In the United States, plastics manufacturers have moved proactively to process their own scrap material in-house, thus improving the manufacturing practices. However, post-consumer recycling at the end of the product lifecycle in the U.S. is well behind European standards.

In Europe, recycling is a part of the consumer's daily life. In the U.S., consumers still choose convenience over recycling. In addition, there isn't a strong business motivation to recycle. In the case of glass and metal, it is now less expensive and more efficient to use recycled materials, from a raw materials perspective. In addition, glass and metal can be recycled efficiently. Because plastics are still sorted manually, the recycling process is expensive and time-consuming. Because the business of recycling is not strongly profitable, there is little incentive for businesses to recycle.<sup>3</sup>

However, there has been a growing trend toward "sustainability", which is the effort to ensure that the lifecycle of a product does not destroy the source of the product or the environment. For plastics, that means industry leaders must consider the environmental impact of manufacturing practices, the use of renewable resources, overall resource minimization and, critically, recycling at the end of the product lifecycle.

The increased attention on sustainability has led to a renewed focus on recycling plastics. It has also prompted an effort to reduce overall plastics consumption. For example, Walmart, the leading U.S. retailer, has launched a sustainability campaign that pledges to reduce the

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<sup>2</sup> <http://ec.europa.eu/environment/etap/pdfs/howtorecyclemoreplastics.pdf>

<sup>3</sup> Lisa McTigue Pierce, Editor-in-Chief, Food and Drug Packaging

size of packages and increase their use of recycled materials in an effort to save energy and reduce carbon-dioxide emissions.<sup>4</sup>

### **Bio-Based Plastics Alternatives in the U.S.**

In addition to recycling plastics, several environmental groups have supported efforts to use bio-based resins rather than petroleum-based resins. Products made with bio-resins must be deposited in the regular garbage collection, not the recycling collection. In California, the state government supported an expansive program that educated residents about bio-based plastics. From natural food shops to sporting venues, the majority of consumers in California know that if a green stripe is on the package, that package goes in the garbage, not the recycling bin.<sup>5</sup>

However, outside California, most consumers aren't aware of bio-based options and don't understand the concept. In addition, the sustainability effort has highlighted the fact that bio-based resins are not automatically good for the environment. These plastics are made from a renewable resource, which is critical for sustainability; but bio-based materials are marketed as biodegradable, which is only true if the garbage is composted, not land-filled. Because most garbage in the U.S. is land-filled, many of the bio-based products never have the opportunity to biodegrade.<sup>6</sup>

Bio-based plastics have the potential to yield sustainable plastic manufacturing options in the future, but the industry still has to address many hurdles.

### **Outlook for U.S. Recycling**

Despite the Walmart initiative and other sustainability efforts, most industry experts expect little or no growth in recycling trends in the U.S. due to a lack of business motivation. A legislative push to build a recycling collection infrastructure would increase consumer participation, but with today's political climate, industry experts agreed that the government was unlikely to pass any new recycling legislation.<sup>7</sup>

### **Overview of Plastic Recycling in China**

Like the U.S., China has seen an increased interest in the overall product lifecycle of plastics. During the last 10 years of rapid growth, the plastics industry in China focused on productivity, expansion and technological improvements. Today, China has begun to focus on the relationship between industrial development and environmental protection.

There are few regulations or special policies to encourage recycling industry development. Like the U.S., without a profit motive or government intervention, there is little incentive for Chinese companies to sponsor recycling initiatives.<sup>8</sup>

### **Impact of Plastic Resin Imports**

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<sup>4</sup> [http://walmartstores.com/microsite/walmart\\_sustainability.html](http://walmartstores.com/microsite/walmart_sustainability.html)

<sup>5</sup> Mary Ann Falkman, Editor-in-Chief, Packaging Digest

<sup>6</sup> Lisa McTigue Pierce, Editor-in-Chief, Food and Drug Packaging

<sup>7</sup> Steve Toloken, Staff Reporter, Plastics News

<sup>8</sup> Zheng Kai, General Secretary, China Engineering Plastics Industry Association (CEPIA)

China depends on plastic resin imports. In 2005, more than 40 million tons of plastic were consumed annually, of which 20 million tons of plastic material were imported. From this, more than 10 million tons of waste plastic was produced.<sup>9</sup>

Being able to increase plastic recycling would make China's plastic industry much less dependent on imports. However, industry leaders agree that there are several major hurdles that China must conquer before recycling rates increase.

Most importantly, few Chinese consumers are aware that domestic companies rely on plastics imports that the consumer could be providing by recycling. In addition, education about environmental concerns is just beginning in China. Most consumers are becoming more and more interested in the environmental impact from the industry, but there is a general lack of recycling knowledge. Many consumers cannot distinguish between products that can be recycled and those that can not. The main motivation to recycle is from buy-back programs that provide a monetary return to the consumer. Unlike Europe, there isn't a strong environmental motivation to recycle.

Because the government has not launched a recycling education program, educating the consumer is the responsibility of the recycling companies. In China, most recycling companies are small- to medium-sized. They lack the funds and technical support to increase recycling efforts and provide education about environmental issues. There is little sharing of recycling technology, so problems with resource waste and new pollutants being generated from the recycling process are still critical issues for the industry.

### **Outlook for China Recycling**

Overall, there is a drive to become more aware of the impact the recycling industry has on the environment. However, the education of China's consumer is in its infancy. Chinese consumers are not familiar with recycled plastic products and are not strongly motivated to recycle. But the plastic industry's dependence on resin imports could spur a Chinese industry push to increase the rate of recycling. Such a push would be dependent on the industry's ability to overcome funding and educational issues.

### **Conclusion**

Across the board, consumers are motivated to recycle. However, without government intervention, recycling trends will not change. Manufacturers can continue to expect new legislation from the EU about recycling. In the U.S. and China, manufacturers will not see recycling trends change for the next five years.

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<sup>9</sup> Ma Zhan Feng, Secretary-General, Waste Plastics Recycling Committee of China Plastics Processing Industry Association.

European Union	United States	China
<ul style="list-style-type: none"> <li>• Consumer interest is <b>high</b></li> <li>• Government involvement is <b>high</b></li> </ul>	<ul style="list-style-type: none"> <li>• Consumer interest is <b>moderate</b></li> <li>• Government involvement is <b>low</b></li> </ul>	<ul style="list-style-type: none"> <li>• Consumer interest is <b>low</b></li> <li>• Government involvement is <b>low</b></li> </ul>

**About the Research**

This white paper is a joint research venture between USA Strategies in the U.S. and EMG in Europe and China. The two offices surveyed industry leaders to assess current levels of recycling and to predict the industry's direction for the next five years.

**About USA Strategies**

USA Strategies is a strategically focused marketing communications firm that assists companies with new product and market development programs. USA Strategies concentrates on the packaging, chemical, plastics, biotechnology, and software industries, and has partner offices in Europe and Asia to provide global solutions. For more information, call 630-920-1929 or email [pyanahan@usa-strategies.com](mailto:pyanahan@usa-strategies.com).

**About EMG, Europe**

EMG was founded in 1991 in the Netherlands by two international marketing communications professionals with a strong belief in the power of effective communications strategy as part of overall corporate policy to meet commercial objectives. With a background in the materials sector EMG has developed itself as a specialist industrial agency with a focus on the plastics, building and construction, chemicals, packaging, technology and life sciences markets.

EMG was international from the outset and has consistently added big name industrial companies to its client roster, helping them to introduce products, launch new brands, create brand identities, liaise with business and industry press, in short to create awareness and generate new business leads. Today we have offices in Europe, China and Singapore with the capability to implement localized marketing communications and media relations programs in all of our clients' key markets across the world. For more information, visit our website [www.emg.nl](http://www.emg.nl).

**About EMG China**

EMG China was established in 2004 to provide international clients with local support in the mainland China marketplace. With 12 qualified communication professionals with backgrounds in public relations, marketing, journalism, digital media, writing and design, EMG China excels at the development and implementation of integrated programs that use a full range of communication platforms to exchange information with customers, authorities, communities and staff. Our Shanghai office, combined with our presence in Singapore and our office in Beijing which opens shortly, enables EMG to service clients throughout the Asia-Pacific region. We work closely with EMG's global headquarters in The Netherlands to provide our clients with local market expertise within a wider global context.