

China saves energy and resources as the largest importer of recyclables, and Europe is an important source of materials and know-how

China is playing a significant role in reducing the world's carbon footprint since it became the biggest importer of recycled material, used extensively in the country's rapid infrastructure construction. Also, improvements in China's recycling industry regulations have helped to improve the standards of recycling globally.

"China's growing economy has created great demand for scrap material, and the use of scrap instead of primary material reduces carbon emissions. Although China's economic growth has slowed, it is still playing an important role," says Alexandre Delacoux, director-general of the Brussels-headquartered Bureau of International Recycling.



**Workers dismantle scrapped TV sets at a recycling company in Beijing. Provided to China Daily**

With members from more than 70 countries, the bureau works to encourage best industrial practices in recycling so that the environmental impact of economic development is kept to a minimum.

According to 2008 research conducted by the bureau, the total estimated savings in carbon dioxide emissions obtained through recycling globally is approximately 500 million tons of carbon dioxide. Common recyclable materials include metal, paper and plastics.

As China grows, much of its construction work is done using a lot of scrap metals no longer needed in other countries. Such material comes at a cheaper cost than new material, and it helps to reduce global carbon emissions.

For example, making recycled paper can save about 75 percent of the energy needed to make new paper from virgin fiber. It can also reduce 35 percent of the water pollution and 74 percent of the air pollution caused in making new paper. Meanwhile, using ferrous scrap metal can save carbon dioxide emissions by 58 percent compared with primary ore, according to the bureau.

The recycling organization has more than 30 members from China, from cities such as Beijing, Hong Kong and Shanghai.

Delacoux says one significant change his team has witnessed in recent years is the improvement in the quality of China's recycling practices, resulting from effort both from the Chinese government and from companies.

One key policy that has changed China's recycling industry is China's Green Fence policy. Started in February 2013, it was designed to prevent the importation of solid waste-contaminated shipments.

The Green Fence policy has set a limit of 1.5 percent of allowable contaminant in each bale in an effort to keep trash out of China. Previously, some Western companies would illegally send non-recyclable waste material to China, hiding it by labeling it as recyclable material.

Headed by Wang Jiwei, vice-president and secretary-general of the China Nonferrous Metals Industry Association Recycling Metal Branch, the initiative conducts random inspections of all forms of "imported waste", meaning metal, plastic, textiles, rubber and recovered paper materials.

"The policy marked the beginning of Chinese authorities making sure whatever recycling material enters China is of good quality. Those companies that weren't offering the right quality of recycling material had to adjust their processing method to achieve the right quality," Delacoux says.

When the program first started, it hit the Chinese recycling industry very hard, but two years down the line, many firms have adjusted their practices and now the overall quality of material has improved.

"Due to the Green Fence program, the imported recycling material is of much better quality. I think the Chinese recycling industry's catching-up phase has passed, and China's recycling industry standards are in line with the rest of the world," he says.

As recycling costs in developed countries continue to grow, increasingly the world's recycling industry is shifting to China. Britain's exports of waste paper increased from 400,000 tons in 1998 to around 4.7 million tons in 2007, and exports of waste plastics increased from less than 40,000 tons to more than 500,000 in the same period.

More than half of waste paper and more than 80 percent of plastic collected by British authorities, supermarkets and businesses for recycling are being sent to China, according to a report by WRAP, a private British group that works with government, companies and individuals on waste reduction.

Much of the waste sent to China is sorted in the UK first in accordance with export regulations. Under current international shipping laws, countries of the Organization for Economic Cooperation and Development can export waste to non-OECD countries only for recycling, not disposal. As mixed waste falls into the "disposal" category, it cannot be exported to countries outside the bloc, as opposed to scrap metals that can be recycled into manufacturing products in countries like China.

China's large waste and recycling market has created great opportunities for Western businesses. Some Western recycling companies are also sharing their innovative importing processes with China, and one of them is the German waste management and recycling company Alba, which started exporting recycled material to China 20 years ago, including scrap metal, paper and plastic.

These materials all undergo treatment in Europe so that they can be used in production upon arrival in China. Because raw material is expensive, China increasingly sees purchasing recycled material from Western countries as a viable alternative.

Alba CEO Axel Schweitzer told China Daily in a previous interview that Alba has been looking into the possibility of offering comprehensive services to help China meet its environmental protection goal, including consulting and project delivery.

"Increasing need for raw materials supply and environmental protection in China are drivers for a development similar to Germany, where secondary raw materials are an economic and ecological solution," Schweitzer said.

He said that Alba's technological, operational and management know-how in Europe could be used to help China's recycling industry become greener.

For example, Alba has been exploring the possibility of turning Chinese household waste into an alternative fuel called "Green Coal". In Germany, the "Green Coal" Alba produces are used in coal power plants, resulting in a considerable carbon emissions reduction compared with using brown coal.

Another business opportunity is helping China establish recycling industry rules, as is the case of Valpak, the UK's leading environmental compliance scheme, which was developed initially to help UK businesses comply with the country's strict recycling regulations.

In 2004, Valpak established its China office in Tianjin. It has grown quickly and has secured contracts with over 100 reprocessing factories throughout China, all of which are inspected.

Although historically the growth of China's recycling industry has been driven by industry demand, in more recent years the Chinese government has started to build recycling parks to centralize the management of pollution from recycling factories.

There are now more than 20 recycling parks in China, one of which is the Tianjin Ziya Circular Economy Industrial Area. Established in 2006, the park has a total planning area of 135 square kilometers, comprised of a production and processing area, a scientific research and service area and a residential area.

The Tianjin Ziya area focuses on electronic information products, discarded vehicles, rubber and plastic processing.

Looking into the future, Delacoux says the bureau will continue to work closely with its Chinese members to promote information exchanges and to help implement good recycling standards in China.

cecily.liu@chinadaily.com.cn

(China Daily European Weekly 01/09/2015 page23)