China's New Regulations on Waste Paper Importing and Their Impacts on Global Waste Paper Recycling and the Papermaking Industry in China

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China is the largest waste paper importing market in the world. Due to more and more demands and awareness of environment/ safety issues, in recent years the Chinese government has implemented a number of new regulations on waste paper importing, for example, prohibiting importing of unsorted waste paper and lowering the foreign (non-paper) content in the imported waste paper from 1.5% to 0.5%. Small-scale (less than 50,000 tons per year capacity) paper mills are not eligible for importing waste paper. These new regulations have had profound impacts on the global waste paper recycling practice and the papermaking industry in China. At the same time, these new regulations bring up new challenges to the global waste paper recycling practices, such as increased labor costs and decreased recycling efficiency.

Keywords: New regulations; Waste paper; Importing; Papermaking industry; Recycling

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China New Regulations of Waste Paper Importing

Since 2008, China has become the country with the largest paper and paperboard production and consumption. Because of the shortage of raw materials, the recycled fibers from waste paper are key raw materials for the pulp and paper industry, and China has been importing much of them from many worldwide countries, including USA, Japan, and the United Kingdom. Recent statistics show that the waste paper has accounted for 60 to 65% of the raw materials for the Chinese papermaking industry and more than a third is imported (Guo 2017).

China is also the largest consumer of the global waste paper, such that nearly half of the global waste paper was imported into China in recent years (Xu 2017). Without the imported waste paper, it would not be possible to sustain the rapid growth and development of the Chinese papermaking industry.

Together with more than 20 million tons of imported waste paper every year, a large sum of foreign garbage, pollutants, even dangerous wastes also enter China, and these have significant negative environmental impacts in China. For this reason, the Chinese Government started to tighten the regulations on importing waste paper, and the main ones for this purpose are listed in Table 1.

These policy/ regulations changes related to importing waste paper in recent years by the Ministry of Environmental Protection of China are in agreement with others that aim to clean up the environment of the country. They have made, and will continue to make profound impacts on the China papermaking industry and global waste paper recycling practice.

Table 1. New Regulations in Recent Years

Issue Date	Title of regulation	Specifications
December, 2014	Management of imported wastes	Waste paper listed as “restricted imported goods”
August, 2017	Management of imported wastes	Unsorted waste paper from the “restricted imported goods” list to the “prohibited imported goods” list
December, 2017	Environmental protection and management of imported waste paper	Mills with lower than 50, 000 tons/ year capacity prohibited from importing of waste paper
January, 2018	Environment protection control standard for imported solid wastes-waste paper and paperboard as raw materials	Non-paper content of lower than 0.5% in the imported waste paper

Impacts on Global Waste Paper Recycling

The new policy/ regulations will bring significant challenges to companies/ enterprises running the waste paper recycling business in the international market. The quantity and cost of waste paper imported into China will be negatively affected in the near future, especially for the low grade waste paper. The unsorted waste paper is prohibited from being imported, and the unsorted waste paper will have to be processed, for example, for removal of contaminants, such as plastics and metals. Such changes imply an increase in the cost and price. The increased price of the imported waste paper means that it will face fierce competition from the domestic waste paper in China.

On the other hand, these new regulations bring a great opportunity to the Chinese domestic waste paper recycling business. In fact, the Chinese government has implemented some new initiatives that aim to improve the practice/ management of domestic waste paper recycling in China. It is planned to construct a highly efficient waste paper recycling network around the country so that the quality and quantity of domestic waste paper recycling can meet the new demands from the China papermaking industry. In January 2017, the Ministry of Industry and Information of China issued “Guidance on speeding up the development of renewable resources industry”, with the plan of establishing 3 to 5 waste paper recycling centers of 300,000 to 500,000 tons per year, 15 national recycling companies, and 10 mid-scale recovery operations for every 5 million of population (Guo 2017).

Thanks to the rapid development of e-commerce, Chinese express-delivery packages surpassed 30 billion pieces in 2016, and they are expected to reach 50 billion in 2020 (Xu 2017). Because waste paper is the principal raw material for paperboard, which is used to manufacture express packaging boxes, the demand for waste paper will be strong in the near future.

The new policy/ regulations will drive new research and development of new technologies and materials in packaging industry. For example, if metal-based wires, polybags, and plastic products (bags, strapping, *etc*.) are replaced by paper-based products, there will be less foreign containments in the recycled waste paper, which will result in not only improved quality of waste paper, but also decreased processing cost in sorting/ managing waste paper.

Impacts on China Papermaking Industry

The new policies and regulations had made and will continue to have far-reaching impact on China papermaking industry.

The good news is that the quality of waste paper to be imported to the Chinese market will be improved, which means higher pulping yield and lower processing cost for the pulp and paper mills that are relying on the imparted waste paper as the main raw materials. Unfortunately, a higher purchase price of waste paper will be a burden.

To some extent, large business/ enterprises have benefited greatly from these new policy/ regulations, as well as from the booming of the Chinese e-commerce market. For example, in 2017, the stock prices rose sharply for some major Chinese paper companies. The stock prices of Nine Dragons paper limited, Chen-Ming group, Bo-Hui paper, Shandong Sun paper, and San-Ying paper rose 125%, 81%, 77%, 41%, and 36%, respectively (Liu 2017). The new regulations stipulate that small mills/ operations (less than 50,000 tons per year) will not be eligible to directly import waste paper, which may be another reason that the small operations will be bought by bigger ones, or there will be closures in China, which has already been happening in a number of provinces in China.

These new regulations from the Chinese Government will lead to significant changes in practices to both the global waste paper recycling and the papermaking industry in China. It is expected that waste paper recycling management and practices, for example, pre-sorting and some classification effort, will have to be taken to ensure that the waste paper will be cleaner, which will improve the overall quality of waste paper. Some technological advances, for example, cellulose paper- based strapping, rather than metal wire or plastic strapping, will also help in meeting this requirement.

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References Cited

Guo, C. (2017). "Market situation of waste paper in China & the world in 2016," *China Paper Newsletters* (10), 71-80.

Xu, M. (2017). "New demand, opportunity and situation of domestic waste paper recycling in China with New policy and overall adjustment," *China Paper Newsletters* (5), 14-18.

Liu, S. (2017). "Price of waste paper recycling is double comparing with the last year, far more than price of scrap steel," *China Recycling* 94(1), 30-32.