

# Current Status and Perspectives on Recycling of Waste Plastics in Korea

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## Abstract

Since the use of plastics in various goods such as film, containers, and packaging has been increasing in Korea, the generation amount of waste plastics was increased from 17,239 ton/d in 2013 to 19,532 ton/d in 2017. For reduction and recycling of plastic waste, the Extended Producer Responsibility (EPR) and voluntary agreement of waste plastics collection-recycling system under the Act on the Promotion of Saving and Recycling of Resources has been promoted in Korea. And the Framework Act on Resources Circulation has been enacted in order to activate the recycling of the waste in 2018. Recently, waste collection companies have refused collection of waste plastics due to cost burdens and lack of demand. Globally, China banned the import of 24 kinds of solid wastes including plastic waste. After the ban on the import of waste plastics in China, waste plastics in Korea are not exported and the export of waste plastics imported from Japan and the USA to Korea has been increasing.

In Korea, the recycling of waste plastics was increased from about 52.2% in 2013 to about 59.5% in 2017. The thermal treatment including incineration was decreased from about 41.1% in 2013 to 35.8% in 2017. Waste plastics can be used as a solid refuse fuel (SRF), but construction and operation of the SRF power plant are suspended by local residents due to a generation of fine dust. In order to prevent the generation of waste plastics, it is necessary to divide the generation source into two ways such as the household sector and the industrial sector. In the household sector, it is desirable to suppress the consumption of disposable products and plastic bags as a measure to prevent the generation of plastic waste. In the industrial sector, the generation of plastic waste should be prevented by reducing the consumption of plastics by optimizing the process of consuming plastic raw materials. In addition, the grade of materials and structure of packaging materials is necessary to set for enhancing the recycling of waste plastics. The grade should be used to classify material recycling or energy recovery in the recycling of waste plastics.

Some waste plastics are generated by using hazardous substances such as plasticizers and flame retardants in plastic products. Since waste plastics contained hazardous substances, it is difficult to have constant quality specifications. In the recycling of waste plastics, it is necessary to manage hazardous substances for quality control, human health, and environmental protection. In developed countries such as the USA, Japan, and the European Union prohibit the use of hazardous substances such as brominated flame retardants, bisphenol A, cadmium and lead compound in the production of plastic products to control hazardous substances in waste plastics. Therefore, hazardous substances used in plastics should be prohibited and the eco-friendly materials should be used to replace hazardous substances in plastic products.

**Keywords:** *Plastic waste, Extended Producer Responsibility, Recycling, Resources Circulation*

## Biography

Dr. Seung-Whee Rhee is a professor in Kyonggi University, Kyonggi Korea. He is the president of the Korea Society of Waste Management.