



## Republic of Korea | The Republic of Korea's EPR system for packaging: an Asian role model

The Republic of Korea introduced its EPR system for packaging in 2003. The system significantly increased recycling, making the country a shining example of sustainable waste management in Asia.

### *Background and development*

The Republic of Korea is a high-income country located in the southern part of the Korean Peninsula. It has a land area of 100,363 km<sup>2</sup> and had a population of 51.362 million in 2017<sup>1</sup>. Urbanisation and rapid population growth led to an increase in the amount of waste generated in the country, bringing with it major waste management challenges. Its densely populated cities, including the capital, Seoul, suffer from many of the problems encountered by cities the world over, such as traffic congestion, housing shortages and waste treatment problems. Waste collection in rural and under-developed areas of the country can be challenging, as roads tend to be narrow and are easily blocked. Collection in these areas also has to be done door-to-door using small vehicles, which in turn means that more labour is required and raises the cost of operating an effective waste management system.

One of the Republic's major priorities has been to minimise its use of resources while meeting the country's high demand for energy. This was one reason why it adopted an efficient system for recovering resources from landfill and encouraging reuse and recycling. The Ministry of Environment drew up and implemented a number of laws on waste management designed to embed the principle of the '3Rs' - Reduce, Reuse, and Recycle. The firm legal foundation provided by this legislation makes it easier to implement these policies in the private sector. The government of the Republic of Korea introduced a number of recycling initiatives, such as a Volume-Based



<sup>1</sup> Korean Statistical Information Service.



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Waste Fee System, Extended Producer Responsibility, a deposit refund system and a waste charging system.

**EPR was introduced after the Waste Deposit Programme was implemented in 2003**, and there are also a number of waste-to-energy schemes operating in the Republic of Korea. Due to the combination of the huge range of products on the market, shorter product life cycles and lifestyle changes, the volume of packaging waste produced in the country has been increasing steadily for many years; packaging currently accounts for 30% of total household waste by weight and around 50% by volume. Waste generated in detached homes and small business premises is collected by local authorities and transferred to material recovery facilities (MRF) (public and private) for further treatment. Packaging from large apartment blocks and other buildings is collected by private recyclers and sent to privately-operated MRFs, from which it is then delivered to recyclers and manufacturers to produce recycled products.

The Korea Environment Corporation monitors the EPR system and ensures that producers and importers comply with requirements to report their sales and import data, as well as data on waste collection and recycling. The central government is responsible for drawing up and implementing regulations on EPR, while local governments are tasked with ensuring effective, responsible waste collection and improving rates of recycling and reuse. Apartment blocks contract private recycling collectors to collect their waste and sell it on to recyclers. Monitoring is enhanced by a number of labelling systems for products covered by the EPR system, including information on the recyclability of packaging and how it should be disposed of. These labels are produced by importers and manufacturers.

As part of the Republic's transition to a sustainable waste management system, the Ministry of Environment enacted and later amended the Enforcement Decree and Enforcement Rules associated with the Waste Management Act to increase the amount of material to be recycled. In 1982, over 96% of municipal solid waste was disposed of in landfill and the recycling rate was almost zero. Thanks to a combination of a consistent, long-term policy and adept implementation, the proportion of household waste going to landfill reduced to 13.5% by 2017.<sup>2</sup> Recycling, incineration, and other treatment options of municipal solid waste and industrial waste also became much more common over this period.

#### *The legal framework for the EPR system*

EPR was introduced to promote the reduction, reuse and recycling of waste by encouraging manufacturers to consider the environment at every stage of the product cycle, from product design to manufacturing, distribution, consumption and disposal. Every year, the Ministry of Environment announces a mandatory recycling rate for each product covered under the EPR system.

The EPR system primarily covers the following packaging: metal cans, glass bottles, cartons and card, PET bottles and synthetic resin packaging. These packaging are used to pack food and beverages, agricultural products, marine products, livestock products, cleansers, medicines, cosmetics, etc. It is currently being expanded to cover a total of 32 products including fluorescent lamps, packing films, mobile phones, audios, air conditioning units, PCs and batteries (see OECD 2014).

The deposit refund system that existed before 2003 was discontinued in 2003 and replaced by the EPR system. All products that had been covered by the deposit refund system, such as carton packaging, glass bottles, tyres etc. have automatically been covered by the EPR system since. New items including air conditioning units, TVs, refrigerators, etc. began to be added to the EPR from 2003 onwards. In 2004, packaging films and fluorescent lamps were added to the scheme, and audio equipment and mobile communication devices were added in 2005. Waste prevention regulations, such as restrictions on the use of hazardous materials, have been strengthened.

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<sup>2</sup> Environmental Statistics Yearbook from Ministry of Environment, Republic of Korea.

The EPR system has expanded significantly since inception, with a particularly strong focus on 27 specific types of electronic items including refrigerators, TVs, washing machines, air conditioning units, PCs. Printers, copiers, and fax machines were added in 2006, cosmetics were added in 2007, and in 2008 the system was further expanded to include manganese batteries, alkaline manganese batteries and Ni-MH batteries, as well as various electrical and electronic products (Table 1). Target recycling rates are set for each category of product, and any producer that fails to meet their targets is obliged to pay an additional recycling fee to cover the shortfall.

Table 1: The legal basis of the Republic of Korea’s EPR scheme (Source: OECD 2014, own representation)

EPR scheme	Legal basis	Target item	
Take-back with recycling targets	Act on the Promotion of Saving and Recycling Resources	Packaging (4 types)	Metal cans, glass bottles, drinks cartons, and synthetic resin packaging, used to pack food and beverages, agricultural products, marine products, livestock products, cleansers, medicines, cosmetics, etc.
		Products (11 types)	Batteries (mercury, silver oxide, lithium, nickel-cadmium, manganese, nickel-hydrogen), tyres, lubricants, fluorescent lamps, styrofoam.
	Act on Resource Recirculation of Electrical and Electronic Waste and End of Life Vehicles	Televisions, refrigerators, washing machines, air conditioning units, computers, audio, mobile phones, copiers, fax machines, printers, vending machines, electric water purifiers, electric ovens, microwaves, food waste dispensers, dishwashers, bidets, air purifiers, electric stoves, electric cookers, water softeners, humidifiers, irons, fans, blenders, vacuum cleaners, video cassette recorders	

Producers and importers of EPR items collect and recycle products or packaging at the end of their life cycles, or pay the relevant fees for the PROs to do so on their behalf. Producers and importers are also facilitate recycling by developing recycling technology, using resource efficient design techniques, restricting the use of hazardous substances, and producing or importing products that are easier to recycle. Producers or importers have the option of setting up a PRO to carry out their recycling responsibilities on their behalf (see Figure 1).



Figure 1: Roles and responsibilities in the Korean EPR scheme (Source: OECD, 2014, own representation)

Recycling rates for paper, plastic, metals, construction waste and e-waste are very high (>90%). Resource recovery facilities are in place to handle various separate waste streams, including paper, plastic, metals, construction waste and e-waste. The number of recycling companies has increased from 2,941 in 2001 to 5,972 in 2018. There are 217 public sector recycling facilities, with combined capacity of 4,723 tonnes/day. Private sector recycling facilities number 524, with a combined capacity of 60,291 tonnes/day. In 2016, the Republic of Korea Ministry of Environment issued a loan worth a total of 103.6 billion won (around USD 94.18m) to finance investment in recycling activities. The loan was to be paid back over 10 years, at an interest rate of 1.51%.<sup>3</sup>

Information correct as of June 2020

### Further reading

OECD (2014). "Case study for OECD project on extended producer responsibility - Republic of Korea," [http://www.oecd.org/environment/waste/OECD\\_EPR\\_case\\_study\\_Korea\\_revised\\_140522.pdf](http://www.oecd.org/environment/waste/OECD_EPR_case_study_Korea_revised_140522.pdf)

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<sup>3</sup> United Nations, "Republic of Korea," <https://www.undp.org/content/dam/uspc/docs/USPC%20Policy%20Brief%20203.pdf>, 2007.