

Waste Treatment Policy and Measures in South Korea

Background Information

Note: South Korea, with a thriving industrial sector, is different from HK in economic structure. Waste statistics of South Korea in this document do not take account of its industrial waste.

South Korea, one of the four little dragons in Asia, saw a rapid increase in wasteload after its economy took off in the 1990s. The wasteload per capita was comparable to that in Hong Kong today. The South Korea government originally planned to build 9 incinerators in Seoul, but with the objection from the public, it could only strengthen the policy of waste reduction at source, in particular through municipal solid waste (MSW) charging. As a result, starting from 1995, the overall waste disposal rate substantially dropped by 40% in just a few years. The recycling rate has further increased to 60%, whereas the economic benefits of the recycling industry has increased from HK\$1.7 billion in 2001 to HK\$7 billion in 2009. All this has been achieved with only 4 incinerators built in Seoul.

The Per Bag Trash Collection Fee System, which is quite a success in Taipei, has been implemented in South Korea since 1995. Before its launch in South Korea, the waste charges were imposed according to property tax or as fixed charges, regardless of how much waste people produced. Since January 1995, South Korea has implemented nationwide quantity-based MSW charging system through pre-paid garbage bag. Under this system, people are required to dispose of trash in pre-paid garbage bags (capacity ranges from 2 to 100 litres), price of bags was determined by regional government according to the cost of waste disposal, roughly Korean won 16.5 (i.e. HK\$0.11) per litre. Recyclable items should be disposed of in separate containers without any charges.

South Korea has introduced the following measures to complement the Per Bag Trash Collection Fee System:

- Regional governments issued guidelines on source separation of waste. Residents of high-rise buildings have to dispose of their waste and recyclables separately in designated public collection containers at public area of the building. Residents of low-rise buildings have to dispose of their source separated waste in front of the entrance of residence. Irregularities could be easily identified under such collection arrangements.
- Providing funding to each city and district for setting up additional recycling facilities, installing adequate monitoring equipment and

deploying additional manpower to prosecute those who do not make use of designated trash bags (fly-tipping). Voluntary groups had been set up with appointed members from residents' organizations and non-governmental green groups, to monitor fly-tipping. Reward system was set up in 2000. Any reporting on fly-tipping may be rewarded with at most 80% of penalty. Prosecution figures fell annually from a million cases nationwide in 1995 to less than 140 000 cases in 2004. (Table 3)

- Launching intensive publicity and education programmes to teach the public how to classify recyclables and use the designated garbage bags and, more importantly, to make known to the public the purpose and significance of waste reduction.
- Given the difficulties in monitoring fly-tipping in rural areas, residents there are not required to dispose of trash in designated garbage bags. Instead, public collection boxes had been set up in rural area for trash and recyclables, relevant charges are shared by all residents in the community.
- Local officials mentioned that appropriate assistance had been offered to low-income people to alleviate the burden of MSW charges on them.

This system not only backed the emergence of recycling industry in Korea, but also enhanced the market competitiveness of recycling companies and changed the lifestyle of people and the conduct of companies. Companies have been driven to adjust their production and marketing practices to reduce unnecessary packages and waste as far as possible. More people purchase second-hand goods and refillable products to reduce waste. They are also more ready to bring their own reusable shopping bags.

Table 1: Comparison of waste quantities among four little dragons of Asia

Area (year)	Hong Kong (2011)	Taiwan (2011)	Taipei (2011)	South Korea (2009)	Seoul (2010)	Hong Kong (2011)	Singapore (2011)
Type of waste	Domestic Waste *	General waste *	General Waste *	Municipal / Domestic Waste *	Municipal / Domestic Waste *	MSW *	Total solid waste excluding construction debris, sludge and used slag *
Disposal (tonnes per day)	5,973	9,893	1,037	19,780	3,428	8,996	7,397
Disposal rate per capita (Kg/day)	0.84	0.43	0.39	0.41	0.32	1.27	1.43
Generation rate per capita (Kg/day))	1.36	0.88	1.00	1.04	0.95	2.44	2.75
Recycling rate	38%	52%	61%	61%	66%	48%	48% *

Sources : Environmental Protection Department of HK, environmental protection authority of Taiwan, Ministry of Environment of South Korea, and National Environment Agency of Singapore.

* The coverage of Taiwan and South Korea data is close to domestic waste of Hong Kong. Recycling rate of Singapore covers waste as a whole, and the adjusted figure excluding construction debris, sludge and used slag which is closer to MSW, is 48%.

Table 2: Waste management measures introduced by South Korea in the past two decades

Year	Measures
1995	Volume-based waste charging system (per bag charging)
1995	Civil monitoring mechanism for incinerators and landfills
1999	Banning or restricting the use of disposable products (by promoting saving and re-use of resources)
1998-2002	Basic recovery scheme for food waste
2003	Extended producer responsibility scheme
2005	Banning disposal of food waste at landfills

Table 3: Prosecution figures after the introduction of the Per Bag Trash Collection Fee Scheme in South Korea (rounded up)

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
No. of cases ('000)	1090	550	640	550	580	360	NA	NA	180	140

Source: Korea Environmental Policy Bulletin, Issue 1, Volume 1.

Table 4 MSW treatment modes in South Korea (2009)

Recycling	61%
Incineration	20%
Landfill and others	19%