



Hong Kong Waste Management Association



South Korea Study Trip

Waste Recycling and Charging

17 July 2018

Topics

- Background
- History
- Recycling
- Charging
- Lessons for Hong Kong



Background

❖ Industrial Waste

- South Korea – large industrial sector (more so than Hong Kong)
- Generates significant quantities of industrial waste
- Legislation for waste – heavy emphasis on addressing industrial waste
- Circular economy active – because of industrial sector demand for recyclables as raw materials (something Hong Kong lacks)

❖ Government Structure

- South Korea – several tiers of Government – like China and most of the rest of the world!
 - “Federal” or “Central” Government
 - Municipalities
- Again Hong Kong unique as we have just one “Government”

❖ Focus on Seoul

- Population – 25 million (Seoul City, Incheon City and Gyeonggi Province - area surrounding Seoul)

Introduction (cont)

❖ Koreans are more “noisy”

- Remember HK WTO Meeting in 2005
- South Korean fought with our police – pitched battles in Wanchai near convention centre



South Korea Recycling and Charging

History

❖ **Nanjido – Seoul's first formal landfill**

- 1978 to 1993
- Municipal facility

❖ **Replaced by Sudokwon Landfill and WtE plants**

- Sudokwon Landfill - Central Government initiative for Seoul City, Incheon City and Gyeonggi Province (area surrounding Seoul)
- Significant objections during landfill construction – NIMBY concerns over smell
- 11 incinerators planned
- Significant objections to incineration – only 4 built

❖ **Early 1990s Initiative to promote recycling**

- Driven by increasing waste quantities, and limited disposal capacity
- Initially recycling bins introduced
- But waste & recyclables mixed – largely ineffective! (as in HK)

History (cont)

- ❖ **1995 Volume based waste charging introduced**
 - Recyclables no charge
 - Although significant improvement in recycling – no outlet for recyclables
- ❖ **1998 Separate treatment for food waste introduced**
 - Driven by concerns over odour at landfills and incinerators
 - But public also objected to organic waste treatment facilities
- ❖ **2003 Enhanced Producer Responsibility Schemes (PRS) introduced**
 - Improved facilities to process recyclables
- ❖ **2005 Direct landfilling of food waste banned**
 - Subsidies provided by Central Govt for food waste treatment facilities
- ❖ **Development of strategies**
 - Koreans are “noisy” – therefore essential to get “buy-in” by stakeholders
 - Extensive public consultation

Recycling

❖ Driven by waste charging

- Extensive separation at source
- Plastics separated by type
- Comprehensive network to collect recyclables



Recycling (cont)

❖ Collection point at housing development



Recycling (cont)

❖ Recycling bags



Recycling (cont)

❖ RFID Food Waste Collection Bins



Recycling (cont)

❖ Roadside collection



Recycling (cont)

❖ Roadside collection (cont)



Recycling (cont)

❖ Roadside collection (cont)



Recycling (cont)

❖ Roadside collection (cont)



Recycling (cont)

❖ Roadside collection bins

- Note co-mingled recyclables (unlike HK)



Recycling (cont)

❖ Roadside collection vehicle



Recycling (cont)

❖ Roadside collection vehicle (cont)

- Food waste collection in city street in late evening (unlike HK)



Charging

❖ Volume Based Charging

- Pay as you throw system
- Based on purchase of designated plastic bags
- If waste not in designated bag – not collected!
- Recyclables – if separated out – no charge
- Decentralised – every municipality – own bags & own charges
- Similar to system in Taipei City
- *(Hong Kong planning similar system - but HK scheme more complicated)*

❖ Charges

- About HK\$3 for 20 litre bag – being increased to about HK\$4
- *(HK plans HK\$2.2 for 20 litre bag)*

Charging (cont)

❖ Charging bags



Charging (cont)

❖ Over full charging bag



Charging (cont)

❖ Impact of charging

- Reduced waste generation
- Improved awareness of waste disposal
- Pressure from consumers to reduce packaging of products
- Reduced waste for disposal
- Increased separation of recyclables

❖ Statistics (City of Seoul)

- MSW generation trending down to about **1.05 kilos per day per head**
- ***(HK MSW risen from 1.27 in 2011 to 1.41 kg per head in 2016)***
- Recycling rate about **65 to 69% of collected MSW** (recyclables + food waste)
- ***(HK about 36% of generated MSW – say 25 % of collected MSW)***
- Seoul about 23% of collected waste incinerated – only 10 to 15% landfilled

Charging (cont)

❖ Food waste

- Food waste handled differently
 - Pay as you throw bags (cheaper than MSW bags – about third of price)
 - Standard container with chip or sticker
 - Weight based system using electronic card with RFID



Charging (cont)

❖RFID Weight based system

- Each householder has electronic card
- Card used to open bin
- Tip in food waste
- Automatic weighing, with monthly invoicing based on weight



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Lessons for Hong Kong

❖ Observations

- Seoul experienced many similar problems as Hong Kong
- Volume based charging introduced in 1995 (over 20 years ago) was significant driver for change (*HK first tried to introduce charging in 1994*)
- Korea adopts trial and error approach to find correct solution (*HK spends ages deciding what to do and then rejects criticism if it does not work*)
- Seoul recognises importance of stakeholder buy-in so engages with communities at early stage to explain problem, and seeks suggestions (*HK tends to decide what to do first and then try and get stakeholders to agree*)

❖ Suggestions for Hong Kong

- Pursue MSW charging vigorously
- Introduce more categories of recyclables at housing developments, eg plastics & paper categories
- Look at domestic food waste collection

Thank you

