CHAPTER 4

CREATION OF A CIRCULAR ECONOMY

4.1

Through the voluntary schemes mentioned in paragraph 2.7, 1,500 tonnes (i.e. around 3%) of waste glass beverage bottles were recovered out of 55,000 tonnes generated in 2011. International experience indicates that mandatory PRS on glass beverage bottles could achieve a recovery rate ranging from 60% to close to 100%. In those Asian jurisdictions described in Annex C, at least 70% recovery has been achieved. As a start for Hong Kong, we estimate that 38,000 tonnes could be collected annually in Hong Kong upon successful implementation of our PRS initiative accounting for about 70% of the glass beverage bottles. This would require a sizable expansion of the current scale of recycling operations and would facilitate the creation of a circular economy.

I am bringing new life to waste glass and in turn building a greener Hong Kong.

Ms. April Lai runs the Green Glass Green project initiated by the Hong Kong Dumper Truck Drivers Association with funding support from the Environment and Conservation Fund. It operates at Wanchai and other locations at scheduled hours. Every time she is asked to comment on her programme, she says it is a tough job but she wants to do more because turning waste into resource is practical and leads to a greener Hong Kong.

Glass bottles are now recovered for local manufacturing of eco-pavers.

4.2

At present, most of the waste glass bottles recovered for recycling was supplied to two local manufacturers of eco-pavers. Increasingly more of the paving blocks used in public works contain recycled glass. This enables more glass to be recycled rather than landfilled. Research also suggests that eco-pavers have positive characteristics over conventional paving blocks. They are lighter in weight, lower in water absorption value and enhanced surface appearance. Nowadays, our eco-paver technology is quite advanced, featuring a double layer structure with further enhanced surface appearance of the upper layer and addition of titanium dioxide which can help removing one of the air pollutants, nitrogen oxides (or "NOx"), in the air.

New applications of recycled glass in construction works are being explored.

4.3

A single application in the production of eco-pavers could not provide an adequate outlet to absorb all waste glass recovered under a territory-wide PRS. The Government has been actively exploring other feasible applications in construction works. We have identified a number of them. For instance, glass sand from crushed bottles has similar technical performance of recycled aggregates and could potentially be suitable for use in site formation, earth filling and reclamation works. Glass cullet in suitable size may be used as backfill or sub-base in roadway construction works. Besides eco-pavers, recycled glass cullet can also be used for production of partition wall blocks which may have a great potential market.

4.4

With the coordination of Development Bureau and EPD, a number of government departments are working together to explore and promote the use of materials with recycled glass in construction works. Annex D summarizes the potential applications for the reuse of waste glass materials that are under close examination, including some that may be implemented in the private sector. As these potential applications become mature, we will be able to further diversify the potential outlets for recycled glass to ensure the adequacy of the PRS as a local solution for the long term.

Our proposal is cost effective as compared to alternatives.

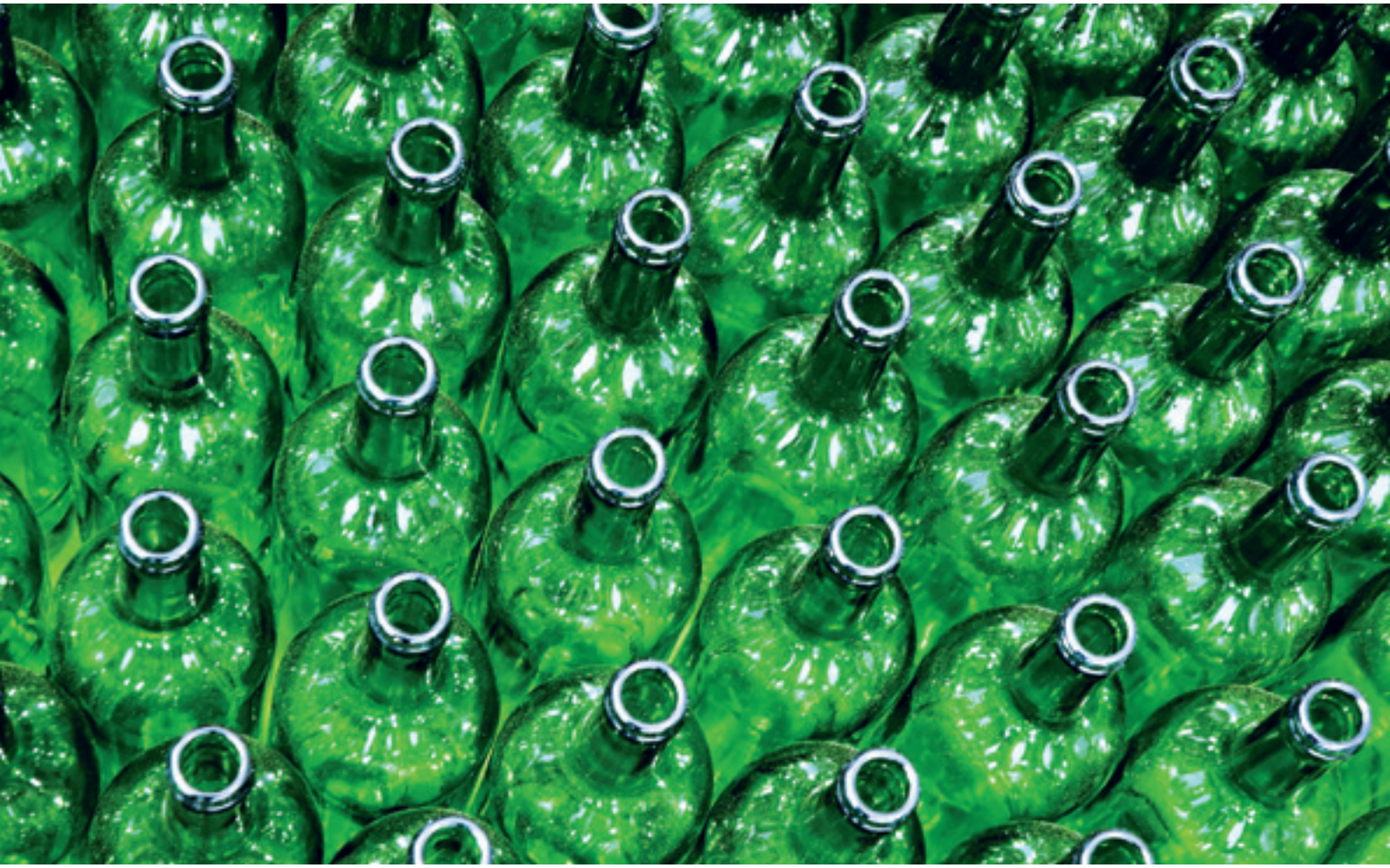
4.5

In Chapter 3, we proposed a pre-paid recycling fee be imposed on beverage suppliers. It is premature to prescribe any specific level for the ultimate recycling fee at the consultation stage; overseas experience suggests an indicative figure of around $1 per litre[5]. Under this scale, a normal-sized bottle of red wine would incur a recycling fee of around $0.75. We will determine the level of the recycling fee after completing the open tender for the GMC contract taking into account the "polluter pays" principle.

Remark :
5. In the three Asian jurisdictions referred to in Annex C (i.e. Japan, Taiwan and South Korea), the recycling fee is up to $0.4 per litre covering mainly the treatment cost.

4.6

We estimate that about 70% of the waste glass beverage bottles generated locally in Hong Kong can be recovered and turned into reusable resources. Our environment will benefit with a reduced demand for non-renewable resources including landfill space and other natural resources such as river sand. This would also help promote glass recycling as green industry as well as create green jobs.



4.7

Apart from our proposal, we are aware of other approaches adopted in other international experience, for instance —

(a) a "manufacturer-led" approach adopted in Germany, Sweden and California of the United States, with beverage manufacturers taking up certain statutory responsibility to arrange the collection and recycling waste glass beverage bottles up to a prescribed target set by the government; or

(b) a non-statutory approach as in Australia and Singapore where beverage manufacturers have entered into mutual agreements with the government for the former to undertake efforts to minimise the generation of waste glass beverage bottles and to achieve a certain target recovery rate.

We believe our proposed mandatory approach is designed to suit local circumstances, where most of our beverages are imported, making manufacturer-led schemes unsuitable. We also wish to go beyond non-statutory approaches that merely increase the recovery rate by developing a more comprehensive whole-cycle approach.