

**Legislative Council Panel on Environmental Affairs**

**Proposed Landfill Charging Scheme**

**Purpose**

This paper sets out details of a proposed landfill charging scheme and the charging arrangements in other economies, and invites Members' comments on the details of the proposed scheme.

**Background**

2. When Members discussed LC Paper No. CB(1) 1122/01-02(05) on "Inviting Expressions of Interest in Providing Integrated Waste Treatment Facilities" at the Panel meeting on 25 February 2002, Members asked the Administration to provide implementation details of the proposed landfill charging scheme and also the arrangements adopted by other economies.

3. Landfill charging is an essential component of our waste management strategy as it provides an economic incentive for waste producers to reduce waste and to carry out sorting to facilitate reuse/recycling, thereby helping to slow down the depletion of limited landfill capacity. Experiences in many places like Shenzhen, Shanghai, Taipei, the US, Canada, most European countries, Japan, and Singapore have shown that landfill charging is one of the most common and effective measures to reduce waste.

4. In 1995, we proposed to introduce a landfill charge of \$43 per tonne for construction, commercial and industrial waste. The scheme was devised to be simple to administer using pre-paid tickets to be submitted at the landfill gates. Waste producers/haulers could choose to

be charged on a per-tonne basis or on a per-vehicle basis. The relevant legislation was passed. However, the scheme faced strong objection from waste haulers and was not implemented.

### **The Revised Proposal**

5. After conducting many rounds of discussions with relevant stakeholders, particularly waste haulers and construction contractors, we have developed a revised proposal incorporating various features in response to their concerns. The key features of the revised proposal are as follows :

- (a) imposing landfill charge on all construction and demolition (C&D) waste in the first phase;
- (b) setting the charge at \$125 per tonne so as to recover the full capital and recurrent costs of the three existing landfills;
- (c) establishing a direct settlement system so that major C&D waste producers, mainly contractors of construction sites, would pay the landfill charge direct to the Government;
- (d) charging waste haulers who take care of C&D waste arising mostly from ad hoc renovation works; and
- (e) exempting all construction contracts that have been signed before the implementation of the scheme.

### **Coverage of the Scheme**

6. Instead of imposing a landfill charge on all types of waste in one go, we propose to introduce a phased approach that would target only C&D waste in the first phase. The reasons for imposing a landfill charge on C&D waste first are :

- (a) local construction activities currently generate around 14

million tonnes of C&D materials<sup>1</sup> each year. About 11 million tonnes (80%) are reused in reclamation works but the remaining 20%, most of which are C&D waste, are disposed of at landfills, and they account for about 40% of all the waste disposed of at landfills each year; and

- (b) the construction industry has yet to adopt widely waste reduction measures, such as balancing cut and fill, as well as the use of metal formwork and prefabricated materials. Introduction of a landfill charge would provide the economic incentive for the industry to step up its efforts in preventing and recovering C&D waste.

7. C&D waste is mainly generated from construction sites (about 70 - 80%) and renovation of domestic/commercial premises (about 20 - 30%). The key sectors affected by the proposed scheme would be developers and contractors who are waste producers, and waste haulers who transport C&D waste to landfills. The scheme would also impact on general members of the public when they undertake renovation.

#### Charge Level

8. In accordance with the polluters-pay principle, we propose to charge all C&D waste at \$125 per tonne. This represents full recovery of the capital (\$56) and recurrent (\$69) costs of the three existing landfills. It is lower than landfill charges in other developed economies (e.g. the charge is HK\$730 per tonne in Japan, HK\$413 in France, HK\$340 in Australia, HK\$323 in Singapore and HK\$235 in the United Kingdom). Most economies also levy a landfill tax in addition to landfill charges.

9. We believe that for landfill charging to be effective, the charge level must be able to create an incentive for waste producers to reduce C&D waste. A reasonable level of landfill charge is also necessary to create an environment conducive to the operation of

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<sup>1</sup> C&D materials are a mixture of inert materials and waste arising from construction, excavation, renovation, demolition and road works. The useful inert materials comprising rocks, concrete, asphalt, rubbles, bricks, stones and earth are suitable for reuse in reclamation and site formation projects. Some of them can also be recycled for use in construction works. C&D waste comprises bamboo, plastic, timber and packaging waste, and are often mixed and contaminated. They are therefore not suitable for reuse or recycling and have to be disposed of at landfills.

sorting/recycling facilities which will provide alternative outlets for waste producers to dispose of C&D materials instead of delivering them to landfills. The lower the charge level, the lower the incentive for waste producers to reduce C&D waste or to carry out sorting/recycling. This runs against our objective to reduce C&D waste. It should also be noted that to avoid escalating the proposed charge to a higher level which would be a key concern of the affected trades, we have already excluded the opportunity cost (\$90)<sup>2</sup> for sterilizing the land used in setting the proposed charge.

### Charging Arrangements

10. In 1995, efforts were made to introduce a landfill charge. Waste haulers objected strongly to the payment system, mainly because they would be required to pay landfill charges upfront and seek reimbursement from waste producers. They claimed they would suffer cash flow and bad debt problems. To address the waste haulers' concern, we have revised the charging arrangements and propose the following :

- (a) A direct settlement system for major C&D waste producers, which generate about 70 - 80% of all C&D waste, so that they would pay the landfill charge direct to Government through a "chit system". This system is similar to a cheque book arrangement where waste haulers may bring along a "chit" issued by the account holder (i.e. the construction contractor) when they deliver C&D waste to landfills for disposal. Waste haulers would NOT be required to pay the charges for waste producers. Detailed arrangements are at Annex A.
- (b) An account billing system for waste haulers who handle the remaining 20 - 30% C&D waste arising mostly from ad hoc renovation works. As there are about 300,000 small ad-hoc waste producers each year, it would be almost impossible to locate them and extend the direct settlement system to them. Hence, we have no alternative but to put the responsibility on

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<sup>2</sup> Using notional agricultural land cost as the basis.

waste haulers – a practice which is adopted by many economies with a landfill charging system. To allay waste haulers’ concern about cashflow problems, they would be billed on a monthly basis and given a credit period of 30 days (i.e. they would be required to pay the charge in arrear within 30 days after receiving the monthly invoice). Furthermore, a security deposit would not be required. Detailed arrangements are at Annex B.

11. We believe that the current proposal should help address waste haulers’ concern about failure to collect/recover charges from waste producers. With construction contractors paying the charge through the chit system, 70 - 80% of the targeted charges would be paid to Government direct. While it is true that waste haulers will have to collect the charge from small waste producers under this arrangement, we believe this could tie in well with the present practice of the trade as they could collect the charge at the same time that they collect their transportation cost from waste producers. We will also widely publicize the introduction of landfill charging and this should help waste haulers in collecting the charge from waste producers.

12. The proposed arrangement of providing a credit period should alleviate possible cashflow problems that waste haulers might encounter and allow them more time to collect the charge from waste producers. Moreover, measures would be put in place to suspend the payment of landfill charges if haulers have clear evidence to show that they fail to collect charges from waste producers within the credit period.

#### Charging Arrangements in Overseas Economies

13. It must be noted that in many overseas economies, landfill charges are collected through a “gate fee” system, rather than through direct charging of the waste producers. This is particularly the case for C&D waste. Under the “gate fee” system, charges are imposed on the waste haulers or individuals who arrive at the landfill gate with the waste. They would have to pay either in cash or through account billing. A brief description of the landfill charging arrangements in other economies, as requested by Members, is at Annex C.

### Running Construction Contracts

14. We understand that there are concerns from the construction industry about running contracts signed before the implementation of the landfill charging scheme as there are no provisions to enable them to recover landfill charges from their clients. To address such concerns, we propose to exempt all construction contracts that are signed before the implementation of the charging scheme. If Members agree with this proposal, we will work out a detailed mechanism to distinguish running contracts from new ones.

### Sorting Facilities for C&D Materials

15. To assist the construction industry to reduce waste and recycle C&D materials, we will set up two sorting facilities, one in Tuen Mun near the West New Territories Landfill, and another in Tseung Kwan O near the Southeast New Territories Landfill. Waste producers can deliver their C&D materials to the sorting facilities where recyclable materials will be sorted from C&D waste. The residual C&D waste that cannot be recycled will then be disposed of at landfills. We are already examining the implementation details of these sorting facilities.

### Fly-tipping problem

16. Our proposal adopts a direct payment approach where up to 70 - 80% of the waste charges would be paid directly by waste producers. Waste haulers that work under this approach should have little incentive to fly-tip as they could not pocket the charge. Under the Waste Disposal Ordinance, fly-tippers, if convicted, would be subject to a maximum penalty of \$200,000 and imprisonment for six months for the first offence, and \$500,000 and imprisonment for six months for second or subsequent offence. Following the introduction of the scheme, relevant departments will step up surveillance and enforcement actions against illegal fly-tipping and we will keep the situation under review.

## **Financial Implications**

17. Using our proposed coverage of the charging scheme (paragraph 6) and the proposed charge level of \$125 (paragraph 8) as the basis, and assuming that the charge would bring about a reduction of at least 20%<sup>3</sup> of C&D waste disposed of at landfills through sorting and other measures, we estimate that the scheme would generate about \$280 million per annum. Given that about half of the C&D materials are generated by Government works<sup>4</sup>, we estimate that the scheme would bring about a net revenue of around \$140 million per year from private-sector construction and renovation works.

18. The costs in implementing the landfilling charging scheme, including the capital cost for setting up the relevant computer system, and staff cost for administering the scheme, would be absorbed by the Environmental Protection Department (EPD). The capital and recurrent costs for the sorting facilities cannot be ascertained at this stage, as these are highly dependent on the facilities' throughput and modus operandi, which are still being examined.

## **Consultation with the Affected Trades**

19. Some 50 meetings have been held with the affected trades between April 2000 and May 2002. A list of the organisations that we have consulted is at Annex D. All of them are supportive of the landfill charging scheme in principle. However, waste haulers and the construction industry still have the following concerns :

- (a) Waste haulers might face cashflow and bad debt problems.
- (b) The "chit" system that apply to major waste producers will lead to operational problems as waste haulers would need to

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<sup>3</sup> Overseas experiences show that imposing a landfill charge will bring about a 20 – 40% decrease in the amount of waste delivered to landfills. We have thus adopted 20% as the assumption of our calculation.

<sup>4</sup> This is based on a survey carried out jointly by EPD and the Civil Engineering Department in 1999-2000.

spend time waiting for the chit before they could leave a construction site.

- (c) Large transport companies might drive small ones out of business.
- (d) Some consider that the level of charge is too high. Some propose to introduce a lower charge initially and to increase the charge to higher levels incrementally.

20. On paragraph 19(a), our current proposal has been designed specifically to address waste haulers' concern about cashflow and bad debt problems. For major C&D waste producers, the proposed "chit" system would enable EPD to charge waste producers direct. For small waste producers, the account billing system would facilitate payment of the landfill charge in arrear, thus allowing waste haulers sufficient time to collect the charge from waste producers. As mentioned in paragraph 10(b) above, a security deposit will not be required, and we will suspend payment of a charge if a waste hauler could provide evidence showing that he fails to collect the charge from the waste producer.

21. On paragraph 19(b), we agree that it is necessary to minimize the impact of the landfill charging scheme on the daily operation of the concerned trades. We propose to set up a liaison group, comprising representatives from waste haulers, the Hong Kong Construction Association and the Government, to sort out operational issues related to the scheme. EPD would also set up a hotline to provide immediate advice and assistance to affected trades.

22. On paragraph 19(c), we consider that this is an issue that would continue to exist, whether or not landfill charging is in place. It would not be appropriate for the Government to intervene in the free operation of the market or direct how business activities are to be conducted.

23. On paragraph 19(d), we have explained in paragraph 9 that for landfill charging to be effective, the charge level must be able to create an incentive for waste producers to reduce C&D waste. We consider that

the proposed charge level of \$125 per tonne is required to produce the necessary effect of the scheme.

**Advice Sought**

24. Members are invited to comment on the details of the proposed landfill charging scheme as set out in paragraphs 5 to 14 of this paper.

Environment and Food Bureau  
Environment Protection Department  
May 2002

## **Direct Settlement System for Major C&D Waste Producers**

Major C&D waste producers will pay landfill charge directly to Government through a “chit system”. The chit system is similar to a cheque book arrangement where waste haulers may bring along a “chit” issued by the waste producer (e.g. the construction contractor) for each vehicle load delivered to landfills.

2. Upon registration, EPD will assign an account number to waste producers and send them the chits printed with bar codes. The chit will be printed in triplicate, with one copy to be retained by the waste producers for record purpose, one to be collected by EPD for invoicing purpose, and one to be returned to waste haulers together with a waste disposal receipt to acknowledge usage. The chit itself does not contain any face value and will only be valid for use at landfills. To validate a chit for waste delivery, the waste producer will need to sign, stamp and fill in the required information (e.g. name, date of issue, vehicle registration mark and the permitted gross vehicle weight of the employed vehicle).

3. At the weighbridge of the landfills, the operator will input the information contained in the chit into the computer system. Landfill charge will be calculated both on a per tonne basis and on a per vehicle (according to the registered gross vehicle weight of the vehicle employed) basis. The weighbridge computer system will compare the two charges and automatically debit the lower one to the chit account. EPD will send an invoice to the waste producer based on the waste volume recorded in the account over the month.

### **Account Billing System for Waste Haulers**

Waste haulers will have to first register their vehicles and open an account with EPD based on the vehicle registration mark (VRM). At the weighbridge of the landfills, the operator will input the VRM number into the computer system. Valid registered VRM users will be allowed to enter. Upon each visit to landfills, EPD will record the amount of waste carried by a vehicle using the VRM as the identification key for the account. Landfill charge will be calculated both on a per tonne basis and on a per vehicle basis. The weighbridge computer system will compare the two charges and automatically debit the lower one to the VRM account. Invoices will be sent to account holders based on their accrued usage over a month. A credit period of 30 days will be given and a security deposit will not be required.

2. For those waste haulers who have not registered their vehicles with EPD, on-site payment will have to be imposed. The charge will be calculated on a “per-tonne” basis.

## **Landfill Charging Arrangements of Other Economies**

Most countries/cities adopt a “gate fee” system to collect landfill charges, particularly for commercial, industrial and construction waste. Under this approach, charges are imposed on the individuals or waste haulers who arrive at the landfill gate with the waste. They would need to pay either in cash or through account billing. For domestic waste, some economies impose a flat rate on all households while some collect charges according to the waste quantity either by volume or by weight.

2. The landfill charging arrangements for construction waste of other economies are outlined below :

### Shenzhen, Mainland

Private waste collectors are required to pay the charge in cash at the landfill gate with charges calculated on a per-tonne basis (\$33 per tonne for landfills). For registered users, they can choose to pay through an electronic payment arrangement.

### Singapore

Licensed waste disposal contractors are required to pay the charge at the landfill gate with charges calculated on a per-tonne basis (\$323 per tonne). The contractors will charge the waste producers the landfill charge plus a haulage fee per trip.

### Taipei

Private waste collectors are charged a gate fee calculated on a per-tonne (\$181 per tonne) basis for delivering waste to landfills.

### USA

Private waste collectors are charged a gate fee calculated on a per-tonne (rate varies between states, ranging from \$182 to \$330 per tonne with an average of around \$270 per tonne) basis for delivering waste to waste facilities.

### Vancouver, Canada

Landfill users can choose to separate recyclable materials from a waste load and pay a lower rate of \$225 per tonne for waste disposal or pay a higher rate of \$525 per tonne to have the entire load landfilled.

### London, UK

Private waste collectors are charged a gate fee calculated on a per-tonne (\$235 per tonne) basis for delivering waste to landfills. On top of the landfill charge, there is a landfill tax of \$143 per tonne.

### Denmark

Private waste collectors are charged a gate fee calculated on a per-tonne (\$255 per tonne) basis for delivering waste to landfills. In addition, they have to pay a landfill tax of \$264 per tonne.

### France

Landfill operators are liable to pay a landfill tax to the Government. Exemptions are granted to sorting facilities, transfer sites and landfill sites managed by companies to stock their own waste. To recover the landfill tax, landfill operators will charge waste collectors a gate fee calculated on a per-tonne (\$413 per tonne) basis for delivering waste to landfills.

**Parties That Have Been Consulted on Landfill Charging**

1. The Real Estates Developers Association of Hong Kong
2. The HK Construction Association
3. The General Building Contractors Association
4. The HK Association of Property Management Companies
5. The Environmental Contractors Management Association
6. The Island Cleansing Service Association Ltd
7. The HK Dumper Truck Drivers Association
8. The HK, Kowloon & NT Grab Mounted Lorries Association Ltd.
9. The HK, Kowloon & NT Refuse Collection Vehicle Owners Union Ltd.
10. Greenpeace
11. Friends of the Earth
12. Greenpower
13. Conservancy Association
14. Hong Kong Institute of Engineer
15. Hong Kong Waste Management Association
16. Advisory Council on the Environment
17. Waste Reduction Committee
18. Waste Reduction Task Force on Construction Industry
19. Hong Kong General Chamber of Commerce