

## **Review of the Construction Waste Disposal Charging Scheme**

### **Purpose**

We have reviewed the disposal charges under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N) (“CDCW Regulation”) (or collectively “construction waste disposal charges”). This paper briefs the Waste Management Subcommittee of the Advisory Council on the Environment (“WMSC”) on the Government’s plan to –

- (a) increase, subject to approval of the Legislative Council (“LegCo”), the various construction waste disposal charges relating to public fill reception facilities, landfills and sorting facilities, in line with the established fees and charges policy; and
- (b) continuously explore complementary measures on construction waste management including, in particular the mandatory use of positioning technology at construction waste collection vehicles so as to enhance control of fly-tipping of construction waste.

### **Background**

2. In general, construction and demolition (“C&D”) materials of different nature are abandoned from our daily construction works, most of which are reusable inert materials such as rock, rubble, boulder, earth, soil, sand, concrete, asphalt, brick, tile, masonry and used bentonite. We encourage on-site sorting by works contractors to reuse the reusable inert materials in suitable projects. These reusable C&D materials are generally referred to as “public fill”<sup>1</sup>. Two fill banks, namely the Tseung Kwan O Fill Bank (“TKOFB”) and the Tuen Mun Fill Bank, were set up in 2002 and 2003 respectively to stockpile surplus public fill

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<sup>1</sup> Or “inert construction waste” in the context of the CDCW Regulation.

generated from local construction works pending reuse. The fill banks are each equipped with a sorting facility to cater for situations where on-site sorting is infeasible. As local reuse cannot absorb all public fill generated in Hong Kong, we entered into an agreement with the State Oceanic Administration in 2007 for the delivery of surplus public fill to Taishan (台山市) for reclamation. Up to end 2014, we have delivered some 73.6 million tonnes (“Mt”) of surplus public fill to Taishan enabling the creation of new land of some 570 hectares there.

3. On the other hand, mixed construction waste containing non-inert C&D materials such as wood waste and other miscellaneous substances may only be disposed of at the landfills. Previously up to half of our landfilled waste was mixed construction waste<sup>2</sup>. In order to promote waste reduction and recycling in the construction industry, we implemented the Construction Waste Disposal Charging Scheme in 2006, imposing construction waste disposal charges comprising (i) a public fill charge (at \$27 per tonne), (ii) a sorting charge (at \$100 per tonne) and (iii) a landfill charge (at \$125 per tonne). These charges were at that time set at levels that represented 100% recovery of the full costs of the relevant construction waste handling facilities. The stratified disposal charges were intended to provide economic incentives for construction waste producers to reduce waste and to practise sorting. In response, the construction industry has adopted various construction waste reduction measures such as selective demolition, on-site sorting and reuse/recycling, modular building design and pre-casting of building components etc. As a result, the disposal of mixed construction waste at the landfills has declined substantially. Statistics on the disposal of construction waste at the relevant designated waste disposal facilities are summarized at Annex A.

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4. At present, construction waste management is mainly undertaken by the Civil Engineering and Development Department (“CEDD”) and the Environmental Protection Department (“EPD”). In 2013, the various construction waste handling facilities operated by the two

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<sup>2</sup> For instance, in 2002, among the 7 Mt of solid waste being disposed of at the three landfills, about 48% of them were construction waste, 45% were municipal solid waste (“MSW”) and 7% were other special waste.

departments received about 14.6 Mt of C&D materials<sup>3</sup> in total, or equivalently about 40,000 tonnes per day. About 92% were public fill and the rest was mixed construction waste. Notwithstanding the efforts made and the waste reduction achieved in the past decade, mixed construction waste still makes up over 25% of all waste disposed of at the three landfills. Even though public fill is reusable, temporary stockpiling involves high opportunity cost for the land that the two fill banks occupy and the ultimate delivery to the Mainland is also costly. In recent years, an increasing amount of various C&D materials is generated and abandoned from our daily construction works, causing a heavy burden on our construction waste handling facilities.

5. It is an established policy that government fees should in general be set at levels adequate to recover the full costs of providing the goods or services. Since the existing construction waste disposal charges have not been adjusted since introduction in 2006, we consider it necessary to review the construction waste disposal charges having regard to the established fees and charges policy and the “polluter pays” principle<sup>4</sup>. Further, the effectiveness of the existing charges in reducing construction waste has diminished over time. Having conducted a costing review, we propose to –

- (a) increase the landfill charge and the public fill charge from \$125 per tonne to \$200 per tonne and from \$27 per tonne to \$71 per tonne respectively, so as to achieve full-cost recovery; and
- (b) increase the sorting charge from \$100 per tonne to \$175 per tonne, so as to maintain the current differential of \$25 between this charge and the landfill charge in order to promote the use of sorting facilities. At this proposed fee level, the sorting charge will only attain cost recovery rate of 66% (i.e. \$90 below its full cost). But charging at its full-cost recovery level (which is \$265 per tonne) will be higher than the proposed landfill charge and runs contrary to our intention of promoting the use of the sorting facilities.

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<sup>3</sup> Excluding such waste that has been reused or recycled after generation without going through any designated waste disposal facilities.

<sup>4</sup> The existing cost recovery rates are in the region of 40% to 60%.

## Further Review of the Disposal Charges in Future

6. We are taking concurrent actions in taking forward the various initiatives committed under *Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022* (“*The Blueprint*”) which has set an ambitious target to reduce the per capita MSW disposal rate by 40% by 2022. Amongst other things, MSW charging will be a key policy driver under *The Blueprint*. As a result of its extensive public engagement, the Council for Sustainable Development (“SDC”) recommended amongst other things that a weight-based gate fee be imposed on the disposal of MSW delivered to the landfills or refuse transfer stations by private MSW collectors. As a rough indication, based on the feedback received during its public engagement, the SDC advised that the community would find the MSW gate fee at \$400 to \$499 per tonne acceptable.

7. The policy intent of introducing quantity-based MSW charging in Hong Kong is to create an economic incentive to drive the necessary behavioural change so as to promote waste reduction and recovery. As mixed construction waste is occupying landfill space in a similar way as MSW does, we need to review the charging basis and fee levels of construction waste disposal charges when we consider MSW charging. Of note is that the indicative MSW gate fee as mentioned in the SDC’s report (at \$400 to \$499 per tonne) is higher than the currently proposed landfill charge for mixed construction waste, as the latter only reflects the full costs (both capital and recurrent) of the existing landfills. As we are concurrently making necessary preparation for the implementation of MSW charging, we will need to further review the construction waste disposal charges in the light of the charging principles in respect of the MSW gate fee having regard to the policy objective of driving behavioural change. The review will address the differential (if any) between landfill charge for construction waste and the MSW gate fee planned to be rolled out in 2018-19.

## **Measures to Enhance Construction Waste Management**

### Enhanced Control of Fly-tipping of Construction Waste

8. While construction waste is subject to a statutory disposal charge, some free-riders may seek to evade the charge through fly-tipping. Unauthorized depositing of construction waste is primarily regulated

under, amongst others<sup>5</sup>, section 16A(1) of Waste Disposal Ordinance (“WDO”) (Cap. 354) which provides that a person commits an offence if the person deposits or causes or permits to be deposited waste (including construction waste) in any place except with lawful authority or excuse, or except with the permission of any owner or lawful occupier of the place.

9. Our plan to increase the construction waste disposal charges has led to concerns about aggravation of the fly-tipping problem. We are exploring options to enhance the existing control using appropriate technologies. In addition to undertaking a trial scheme of using surveillance cameras at 12 black spots of fly-tipping of construction waste to aid our investigation, we have also been working closely with the Construction Industry Council (“CIC”) to explore the potential of using automatic monitoring technology at construction waste collection vehicles to help track and log their activities, which may in turn deter illegal activities notably fly-tipping of construction waste. The tracking may facilitate investigation on fly-tipping. With the support of the Development Bureau (“DEVB”) and building upon some studies of CIC, CEDD launched in October 2015 a pilot trial to examine the technical feasibility and stakeholder acceptance of mandating the use of positioning technology at all construction waste collection vehicles.

10. Our initial views are that positioning technology is technically mature and there are affordable applications in the market. Indeed the trade is also gradually adopting the technology for fleet management purposes. However, there could be possible concerns on privacy, compliance cost and other operational issues. To this end, we would continuously engage the affected trades through CEDD’s pilot trial with a view to achieving a broad consensus on the operational details.

### Promotion of Construction Waste Reduction and Recycling

11. It would be more effective to achieve the intended waste management objective of the Construction Waste Disposal Charging Scheme if the proposed adjustments to the construction waste disposal charges can be coupled with appropriate waste reduction and recycling initiatives. To this end, CIC has engaged a consultant to review the development strategy of the Hong Kong construction industry and

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<sup>5</sup> Depending on the facts and circumstances in a particular case, other legislation including the Land (Miscellaneous Provisions) Ordinance (Cap. 28) and the Town Planning Ordinance (Cap. 131) may also be relevant.

construction waste management has been included in the review as a key area of study under the theme of “Promoting a Greener Built Environment”.

12. CIC’s consultancy is in progress. We understand that their recommendations will include a review of the construction waste disposal charges and measures to enhance the control of fly-tipping. As for CIC’s consultancy’s other recommendations relating to the reduction, reuse and recycling of C&D materials, the broad direction advocated by CIC’s consultancy is to pursue concerted efforts by the Government (including the Environment Bureau, EPD and DEVB) and the industry (as spearheaded by CIC). Amongst other things, it is considered important to facilitate the development of a vibrant local recycling industry for construction waste with the appropriate treatment technologies, adequate handling capacity as well as effective incentives to promote usage. After CIC’s consultancy is completed, we will conduct further studies in conjunction with the relevant Bureaux and Departments on the measures that can be taken to promote development of local recycling industry for construction waste.

#### Promotion of Reuse of C&D materials

13. Meanwhile, for public fill, the two fill banks are close to be fully occupied<sup>6</sup> and they will not be able to accept any more public fill starting from mid-2016 without first sparing some of the used stockpiling capacity. We will expedite clearance of the stockpiled public fill so as to ensure that there is space in the fill banks to maintain their daily operation. In 2015, we aim to deliver about 13 Mt of surplus public fill to the Mainland for gainful reuse. In 2016, we will maintain the same quantity of delivery.

14. Notwithstanding the availability of a Mainland receptor site as an outlet for surplus public fill generated in Hong Kong, it has been our priority to promote local reuse in suitable fill-absorbing projects. For this purpose, a mechanism is in place amongst the works departments under which –

- (a) a Public Fill Committee, chaired by the Director of Civil

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<sup>6</sup> As at end 2014, 16.9 Mt of public fill was stockpiled in the two fill banks whereas the overall capacity of the fill banks is about 22.3 Mt. By mid-2016, a 13-ha land strip in TKOFB has to be released for the extension of the South East New Territories (“SENT”) Landfill and thereafter the total stockpiling capacity of the two fill banks will be reduced to 18.5 Mt.

Engineering and Development, is responsible for vetting public works projects to determine if the generation of C&D materials is minimized and the use of public fill is maximized;

- (b) project offices are required to draw up and implement a C&D material management plan for major fill generation projects. They are required to critically examine alternatives to reduce public fill produced during design stage and to monitor its implementation during construction; and
- (c) public works contractors are required to prepare and implement waste management plan to carry out on-site sorting and implement a trip-ticket system to ensure that public fill and waste are delivered to the appropriate reception sites or facilities.

15. Looking ahead, a number of fill-absorbing projects will attain implementation stage. We will closely monitor developments and will strive to maximize the reuse of public fill in these projects through enhanced coordination.

## **Implementation**

16. In October 2015, the Hong Kong Green Building Council organized a trade engagement session in which representatives from different sectors of the construction and recycling industries deliberated the problem of construction waste management in Hong Kong. There was broad consensus that the current construction waste disposal charges are far too low<sup>7</sup>. Subsequent liaison with the individual sectors has affirmed the trade consensus.

17. We will amend the relevant Schedules to the CDCW Regulation by notice published in the Gazette under section 23 of the CDCW Regulation pursuant to section 33(6)(b) of the WDO. We propose that the new construction waste disposal charges will take effect on 7 April 2017 (Friday).

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<sup>7</sup> As a comparison, in Germany, unsorted construction waste is charged \$750 to \$1,508 per tonne; in Singapore, it is \$471 to \$495 per tonne.

18. We will closely engage relevant stakeholders on the issues relating to fly-tipping, interface with MSW charging and other operational matters. As for the use of positioning technologies at construction waste collection vehicles, we will continue to engage the trade through CEDD's pilot trial and further consider the legislative arrangements that may be necessary after confirming the technical feasibility and securing majority support from the affected trades.

### **Advice Sought**

19. We welcome views from WMSC on our plan (including the implementation timetable) to increase the various construction waste disposal charges in line with the established fees and charges policy.

**Environment Bureau / Environmental Protection Department  
January 2016**

**Disposal of Construction Waste at Relevant  
Designated Waste Disposal Facilities**

<b>Year</b>	<b>Disposal of Inert Construction Waste at Public Fill Reception Facilities  (tonne per day)</b>	<b>Disposal of Mixed Construction Waste at Sorting Facilities  (tonne per day)</b>	<b>Disposal of Mixed Construction Waste at Landfills  (tonne per day)</b>
<b>2005</b>	22,226	N/A*	6,556
<b>2006</b>	16,590	4,005	1,495
<b>2007</b>	17,177	2,446	1,303
<b>2008</b>	18,585	2,084	1,452
<b>2009</b>	18,560	2,051	1,451
<b>2010</b>	28,362	2,091	1,718
<b>2011</b>	30,688	1,156	2,681
<b>2012</b>	34,529	1,197	2,764
<b>2013</b>	34,867	1,361	2,759
<b>2014</b>	33,947	1,591	2,811

\* The sorting facilities have started operation since 2006.