

MANAGEMENT OF ABANDONED CONSTRUCTION AND DEMOLITION MATERIALS

Executive Summary

1. Construction and demolition (C&D) activities give rise to abandoned C&D materials, comprising inert C&D materials (e.g. rocks, rubble and soil) which can be reused as fill materials in reclamation and site formation projects (hereinafter referred to as fill materials) and non-inert C&D materials (e.g. waste bamboos, timber and other organic substances) which need to be disposed of (hereinafter referred to as non-inert construction waste).

2. Under the Waste Disposal (Designated Waste Disposal Facility) Regulation (Cap. 354L), abandoned C&D materials may be disposed of at: (a) two public fill banks managed by the Civil Engineering and Development Department (CEDD) for receiving fill materials; (b) two fill material transfer facilities managed by the CEDD for receiving fill materials which would be transported to the two public fill banks; (c) two sorting facilities managed by the CEDD for receiving abandoned C&D materials containing more than 50% of fill materials by weight (hereinafter referred to as the inert-content requirement); (d) three landfills, namely the Southeast New Territories (SENT) Landfill, the Northeast New Territories (NENT) Landfill and the West New Territories (WENT) Landfill managed by the Environmental Protection Department (EPD) for receiving abandoned C&D materials containing not more than 50% of fill materials by weight; and (e) seven Outlying Islands Transfer Facilities (OITFs) managed by the EPD for receiving abandoned C&D materials containing any proportion of fill materials which would be transported to WENT Landfill.

3. In 2014, of the 21 million tonnes (Mt) of abandoned C&D materials generated, 19.56 Mt (93%) were fill materials for reuse and 1.44 Mt (7%) were mixed C&D materials (containing both fill materials and non-inert construction waste) which were disposed of at landfills. The 1.44 Mt of mixed C&D materials

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accounted for 27% of the 5.42 Mt of the total waste being disposed of at landfills in the year. According to the EPD, SENT Landfill and NENT Landfill could only cope with the territory-wide disposal need up to late 2020s. The Audit Commission (Audit) has recently conducted a review to examine the Government's efforts in managing abandoned C&D materials.

Construction Waste Disposal Charging Scheme

4. Since January 2006, a charging scheme for disposal of abandoned C&D materials (hereinafter referred to as the charging scheme) has been in force, under which the charge rates per tonne of abandoned C&D materials are \$27 for disposal at public fill banks and fill material transfer facilities, \$100 for disposal at sorting facilities, and \$125 for disposal at landfills and OITFs (paras. 2.4, 2.5 and 2.16).

5. ***Significant under-recovery of cost.*** In 2003, during the deliberation of the charging scheme, the Government informed the Legislative Council that the levels of charges under the charging scheme were based on the user-pay principle, and full recovery of the capital and recurrent costs of the facilities deployed for disposal of abandoned C&D materials. However, Audit noted that the charge rates under the charging scheme had not been revised from January 2006 to August 2016, resulting in significant under-recovery of costs of providing services for disposal of abandoned C&D materials. For example, in 2014-15, only 33%, 44% and 63% of the costs of providing disposal services at sorting facilities, public fill banks and landfills were respectively recovered from the charges. From 2006-07 to 2014-15, the estimated unrecovered cost totalled \$3,811 million. The charge rates will be revised from April 2017 (paras. 2.8 to 2.11 and 2.17).

6. ***Annual review of the costs and charge rates not conducted.*** According to Financial Circular No. 6/2006, Controlling Officers should generally review fees and charges and, where necessary, revise them on an annual basis. However, Audit examination revealed that, despite repeated requests from the Financial Services and the Treasury Bureau (FSTB) from mid-2006 to mid-2014, the EPD and the CEDD had not conducted any review of the charge rates and related costs of disposal of abandoned C&D materials and provided the FSTB with the review results during the period (paras. 2.18 and 2.21).

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7. ***Inadequate enforcement actions under the charging scheme.*** Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N), a main contractor who undertakes construction works under a contract having a value of \$1 million or above shall, within 21 days after being awarded the contract, make an application to the EPD to establish a billing account, which would enable the EPD to charge the contractor for disposal of abandoned C&D materials in respect of the contract. Contractors are not allowed to dispose of C&D materials at government facilities without establishing a billing account. Hence, contractors not having established a billing account may resort to illegal dumping. During the period December 2005 to December 2015, of the 19,453 applications for establishing billing accounts, 2,724 (14%) did not meet the 21-day requirement. However, the EPD had only taken prosecution actions in 338 cases. For the remaining 2,386 (2,724 less 338) cases, applicants on average took 78 days (ranging from 22 days to 5.8 years) to make applications after award of the pertinent works contracts (paras. 1.6 and 2.26 to 2.30).

Measures to increase reuse of fill materials

8. Abandoned C&D materials meeting the inert-content requirement (i.e. containing more than 50% of fill materials by weight) would be accepted at sorting facilities and processed to recover fill materials for reuse. The residue would be disposed of at landfills. The CEDD has adopted a screening methodology (based on the weight ratio of a load of abandoned C&D materials) to determine whether a vehicle should be allowed to dispose of a load of abandoned C&D materials at a sorting facility (paras. 3.3 to 3.6).

9. ***Many vehicle loads of abandoned C&D materials being disposed of at sorting facilities not meeting the inert-content requirement.*** Under the inert-content requirement, only abandoned C&D materials containing more than 50% of fill materials by weight would be accepted at sorting facilities. From 2006 to 2015, on an annual basis, only 2% to 6% of vehicle loads of abandoned C&D materials were not accepted at sorting facilities on the grounds that they did not meet the inert-content requirement. However, surveys of the EPD and the CEDD during the period 2006 to 2014 revealed that, on an annual basis, 18% to 56% of vehicle loads of the materials accepted at sorting facilities did not meet the inert-content requirement. During the period 2006 to 2015, on average only 28%

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(ranging from 14% to 44%) of the annual quantities of abandoned C&D materials accepted at the sorting facilities were recovered as fill materials, indicating that the inert-content of many vehicle loads accepted might not meet the inert-content requirement (paras. 1.4(c) and 3.8 to 3.13).

Measures to prevent and detect illegal dumping

10. The number of public reports on illegally dumped C&D materials had increased by 328% from 1,517 in 2005 to 6,499 in 2015. In 2015, 6,300 tonnes of illegally dumped C&D materials were cleared by government departments. In August 2015, the EPD commenced a trial scheme to install surveillance camera systems at 12 black-spot locations for detecting illegal dumping activities. During the trial-scheme period August 2015 to February 2016, the 12 camera systems captured images of 998 cases involving illegal dumping of waste by vehicles, of which 170 (17%) related to illegal dumping of C&D materials. As of July 2016, of the 170 cases, the EPD had taken prosecution actions on 46 cases and investigations on 2 cases were in progress (paras. 4.7 and 4.16 to 4.18).

11. *Inadequacies in taking enforcement actions.* Regarding the remaining 122 (170 less 46 less 2) cases, the EPD did not take prosecution actions on 80 cases because the images of the vehicle registration marks captured by the cameras were unclear, some due to the quality of the cameras installed. For the remaining 42 cases, the lack of prosecution actions was attributed to: (a) letters sent to the vehicle owners concerned according to addresses provided by the Transport Department (TD) being returned unclaimed; (b) the pertinent vehicle owners or drivers not providing details of the cases; (c) long lapse of time taken in handling the cases; and (d) the responsible drivers claiming that the waste dumping was carried out under instructions of persons hiring the delivery services (paras. 4.18 and 4.20 to 4.31).

Way forward

12. *Need to formulate long-term plan for exporting surplus fill materials.* From 2007 to 2014, owing to the fact that local works projects could not fully utilise fill materials generated in Hong Kong, a total of 73.67 Mt of fill materials had been delivered to Taishan on the Mainland, representing 59% of the total 125.65 Mt of

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fill materials generated during the period. However, as the quantity of fill materials for export to Taishan is subject to agreement between the Environment Bureau and the related Mainland authority on a yearly basis, there is a risk that Taishan may not be able to absorb all surplus fill materials generated in Hong Kong in a given year and in the long term (paras. 5.6 and 5.7).

Audit recommendations

13. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Government should:**

Construction Waste Disposal Charging Scheme

- (a) **take measures to ensure that fees and charges are revised in a timely manner (para. 2.36(a));**
- (b) **take measures to ensure that annual reviews of fees and charges are conducted and the review results are forwarded to the FSTB in a timely manner (para. 2.36(b));**
- (c) **issue specific guidelines on factors for consideration in taking prosecution actions against persons not complying with the 21-day statutory requirement on applying for establishing a billing account for disposal of abandoned C&D materials (para. 2.37(a));**

Measures to increase reuse of fill materials

- (d) **conduct a review of the screening methodology adopted for accepting vehicle loads of abandoned C&D materials at sorting facilities with a view to complying with the inert-content requirement as far as possible (para. 3.27(a));**

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Measures to prevent and detect illegal dumping

- (e) **take measures with a view to ensuring that surveillance camera systems installed for collecting evidence for prosecution purposes are capable of capturing clear images of registration marks of vehicles involved in illegal dumping of waste (para. 4.33(a));**
- (f) **forward cases where letters sent to vehicle owners using addresses provided by the TD are returned unclaimed to the TD for follow-up actions (para. 4.33(e));**
- (g) **seek legal advice on ways and means to take prosecution actions against the responsible persons involved in illegal waste dumping cases who do not provide case details (para. 4.33(f)); and**

Way forward

- (h) **explore destinations other than Taishan for receiving surplus fill materials generated in Hong Kong (para. 5.10).**

Response from the Government

14. The Government agrees with the audit recommendations.