

CHAPTER 3

**Environment and Ecology Bureau
Environmental Protection Department**

**Producer Responsibility Scheme on
Waste Electrical and Electronic Equipment**

**Audit Commission
Hong Kong
28 October 2024**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 83 of the Director of Audit contains 8 Chapters which are available on our website (<https://www.aud.gov.hk>).



The Audit Commission website

Audit Commission
6th Floor, High Block
Queensway Government Offices
66 Queensway
Hong Kong

Tel : (852) 2867 3423
Fax : (852) 2824 2087
E-mail : enquiry@aud.gov.hk

PRODUCER RESPONSIBILITY SCHEME ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.14
Audit review	1.15
General response from the Government	1.16
Acknowledgement	1.17
PART 2: ADMINISTRATION OF THE PRODUCER RESPONSIBILITY SCHEME ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT	2.1
Processing of applications for suppliers and sellers of regulated electrical equipment	2.2 – 2.13
Audit recommendations	2.14
Response from the Government	2.15
Licensing and permit control on e-waste	2.16 – 2.27
Audit recommendations	2.28
Response from the Government	2.29

	Paragraph
Inspections on suppliers, sellers, collectors and recyclers	2.30 – 2.37
Audit recommendations	2.38
Response from the Government	2.39
 PART 3: DESIGN, CONSTRUCTION AND OPERATION OF THE WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT TREATMENT AND RECYCLING FACILITY	 3.1
Design and construction of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility	3.2 – 3.12
Audit recommendations	3.13
Response from the Government	3.14
Monitoring of operating costs	3.15 – 3.23
Audit recommendations	3.24
Response from the Government	3.25
Monitoring of operation and maintenance of facilities	3.26 – 3.33
Audit recommendations	3.34
Response from the Government	3.35
Monitoring of contractor's performance	3.36 – 3.47
Audit recommendations	3.48
Response from the Government	3.49
 PART 4: OTHER RELATED ISSUES	 4.1
Collection of recycling levies	4.2 – 4.16
Audit recommendations	4.17

	Paragraph
Response from the Government	4.18
Other administrative issues	4.19 – 4.27
Audit recommendations	4.28
Response from the Government	4.29
Way forward	4.30 – 4.32
Audit recommendation	4.33
Response from the Government	4.34

Appendices	Page
A : Environmental Protection Department: Organisation chart (extract) (31 March 2024)	81
B : Acronyms and abbreviations	82

PRODUCER RESPONSIBILITY SCHEME ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

Executive Summary

1. In May 2013, the Government committed to introduce the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment (WEEE) (hereinafter referred to as WPRS) with a view to achieving resources recovery and providing a long-term solution to potential land contamination and environmental problems arising from mishandling of WEEE during delivery, storage and dismantling processes. Since 1 August 2018, WPRS has been implemented in phases. WPRS initially covers eight types of regulated electrical equipment (REE) (i.e. air-conditioners, refrigerators, televisions, washing machines, computers, printers, scanners and monitors) and the scope has been expanded to cover two new types of REE (i.e. stand-alone tumble dryers and dehumidifiers) starting from 1 July 2024. The Environmental Protection Department (EPD) is responsible for the administration of WPRS and the Environment and Ecology Bureau is responsible for policy matters on environmental protection and for overseeing the implementation of waste-to-resources management strategies and programmes.

2. The regulatory measures of WPRS include that: (a) statutory free removal service should be arranged by sellers of REE in accordance with the removal service plans (RSPs) endorsed by EPD; (b) suppliers of REE are required to register as registered suppliers with EPD and pay recycling levies for REE distributed in Hong Kong in the course of their business; and (c) since 31 December 2018, recyclers must obtain the waste disposal licence for e-waste (e-WDL) from EPD for storing, treating, reprocessing or recycling e-waste, and obtain the import and export permit for e-waste from EPD for importing and exporting e-waste. As of March 2024, there were 3,617 sellers with RSPs endorsed, 208 registered suppliers of REE, 19 licensees of e-WDL and no permit holder for import and export of e-waste.

3. In February 2015, the Finance Committee of the Legislative Council approved the development of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility (hereinafter referred to as WEEE·PARK) at an approved project estimate of \$548.6 million. EPD adopted a design-build-operate

Executive Summary

(DBO) arrangement for implementing the design, construction and operation of WEEE·PARK. In March 2015, EPD awarded a consultancy agreement (Consultancy Y) to a consultant (Consultant Y) for the design and construction supervision work of WEEE·PARK and a DBO contract (Contract A) to a contractor (Contractor A) for the design, construction and operation of WEEE·PARK. The design and construction of WEEE·PARK commenced in April 2015 and were substantially completed on 7 March 2018. As of March 2024, the total project cost was \$455.1 million. The operation stage commenced by phases on 21 October 2017 and 8 March 2018. The Audit Commission (Audit) has recently conducted a review of EPD's work in the administration of WPRS and monitoring the design, construction and operation of WEEE·PARK.

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

4. *Time pledge for processing applications not met.* From October 2020 to March 2024, EPD received 164 applications for endorsement of RSPs and 95 applications for registration as registered suppliers of REE. According to EPD guidelines issued in October 2020, EPD should complete the checking and vetting of the applications within 10 working days after the submissions are in order. Audit noted that, as of March 2024: (a) of the 164 applications for endorsement of RSPs, the processing of 6 was completed more than 10 working days after the submissions were in order, ranging from 11 to 14 working days (averaging 12 working days); and (b) of the 95 applications for registration as registered suppliers of REE, the processing of 2 was completed 16 and 26 working days (averaging 21 working days) after the submissions were in order (paras. 2.3 and 2.4).

5. *Need to ensure timely submission of reports by licensees of e-WDLs.* According to EPD, licensees of e-WDLs should submit quarterly reports and annual reports to EPD within 10 days after the last day of the quarter and within one month after the last day of the calendar year to be reported on respectively. Audit noted that, as of March 2024: (a) of the 331 quarterly reports and 87 annual reports due for submission by the licensees of e-WDLs, 82 (25%) quarterly reports and 25 (29%) annual reports were not submitted by the due dates; and (b) EPD did not lay down guidelines on the procedures to follow up overdue submission of quarterly and annual reports from the licensees of e-WDLs. In September 2024, relevant guidelines were updated by EPD accordingly (paras. 2.17 to 2.20).

Executive Summary

6. ***Scope for enhancing the monitoring of compliance of licensing requirements of e-WDLs by licensees.*** According to EPD, to monitor the compliance of the licensing requirements of e-WDLs by the licensees, they are required to submit quarterly and annual reports. Audit noted that the quarterly reports submitted by the licensees of e-WDLs did not facilitate the monitoring of certain licensing requirements of e-WDLs. For example, according to the licensing requirements, the licensees should not treat or dispose of a quantity of e-waste exceeding the specified maximum daily handling capacity for each type of e-waste. However, the licensees were only required to report the amount of each type of e-waste treated during the quarter in the quarterly reports but not the daily breakdown of the amount of e-waste treated (paras. 2.24 and 2.25).

7. ***Scope for improvement in conducting inspections on suppliers, sellers and collectors of REE.*** Audit noted the following issues:

- (a) ***Inspections on suppliers of REE not conducted in accordance with stipulated frequency.*** According to EPD guidelines in November 2023, all registered suppliers of REE are targeted to be inspected within a 24 to 36-month cycle. Audit noted that, as of March 2024: (i) the inspections conducted on 22 (11 %) of the 208 registered suppliers of REE did not meet the target frequency (i.e. at least once in 36 months) and the periods between any two consecutive inspections on the same supplier ranged from 36.3 months to 5 years (averaging 3.5 years); and (ii) the last inspections of 7 (3 % of 208) suppliers were conducted 36.1 months to 3.7 years (averaging 3.3 years) ago (para. 2.31);
- (b) ***Need to properly document justifications of selecting sellers and collectors of REE for inspections.*** According to EPD, a risk-based approach is adopted to conduct inspections on sellers and collectors of REE. Audit noted that, from August 2018 to March 2024: (i) of the 3,617 sellers of REE with RSPs endorsed, 2,022 (56 %) had not been inspected and 1,595 (44 %) had been inspected for 1 to 19 times (averaging 1.7 times); and (ii) of the 218 collectors specified in the RSPs endorsed by EPD, 63 (29 %) had not been inspected and 155 (71 %) had been inspected for 1 to 4 times (averaging 1.3 times). There was no documentation showing the justifications of selecting these sellers and collectors of REE for inspections (para. 2.32); and

Executive Summary

- (c) *Need to prepare inspection reports in accordance with specific time pledge.* According to EPD, for inspections conducted on sellers and collectors of REE, inspection reports should be prepared within 5 working days after the inspections were conducted. Of the 20 inspection reports on sellers and collectors of REE examined by Audit, 13 (65%) were prepared more than 5 working days after the dates of inspection, ranging from 6 to 59 working days (averaging 18 working days) (para. 2.33).

8. *Inspections at e-waste disposal facilities of licensees of e-WDLs not conducted in accordance with stipulated frequency.* According to EPD guidelines issued in June 2020, regular inspections of not less than 8 times for the first year of licensing period at the e-waste disposal facilities of licensees of e-WDLs should be conducted. For each subsequent year, not less than 8 times of inspections should be conducted for facilities involving disposal of chemical waste or without good compliance records. Audit examined the inspection records of 5 licensees and noted that, from June 2020 to March 2024, 2 licensees (with e-WDLs commenced after June 2020) were inspected less than 8 times (i.e. 3 and 5 times) in the first year of their respective licensing periods and another licensee (involving in disposal of chemical waste) was inspected less than 8 times (i.e. 5, 2 and 3 times) in each of the three years from 2021 to 2023 (para. 2.36).

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

9. WEEE-PARK was designed with a treatment capacity of 30,000 tonnes per year (i.e. design treatment capacity) to treat two types of regulated WEEE, which were further classified into 8 different sub-types. Type 1 covers 4 sub-types (i.e. air-conditioners, refrigerators, televisions and washing machines) and Type 2 covers the other 4 sub-types (i.e. computers, printers, scanners and monitors). Each sub-type of regulated WEEE has its own sub-type-specific design treatment capacity (para. 3.2).

10. *Scope for better estimating the treatment demand in formulating the design of works.* Audit found that, from October 2017 to October 2023, while the actual quantity of regulated WEEE treated in WEEE-PARK was below the overall design treatment capacity (the yearly utilisation rate for the second to sixth year of operation ranged from 71% to 79%), the mix of regulated WEEE treated skewed

Executive Summary

heavily towards washing machines and refrigerators. In order to increase the treatment capacity of a treatment line, Consultant Y issued an Employer's Change (EC) (valued at a cost of \$3.5 million) under Contract A in January 2019 to instruct Contractor A to carry out the modification works. In vetting the EC, the Development Bureau commented in December 2018 that, for similar projects in the future, EPD should enhance the market survey and consultation with the stakeholders in the early design stage, so as to have a better estimate of the treatment demand and to incorporate the design with sufficient treatment capacity in the original tender, so as to reduce design changes during construction stage. Audit noted that while EPD conducted a number of consultations, business impact assessment, feasibility studies and surveys with the public, trade members, retailers, recyclers and relevant stakeholders in early 2010s, there was no specific consultation to assess the demand in using WEEE·PARK and to derive a more accurate estimate on the total quantity and the mix of regulated WEEE to be processed by WEEE·PARK (paras. 3.4 and 3.5).

11. ***Construction works completed later than the scheduled completion date.*** The design and construction works of WEEE·PARK commenced in April 2015 and the revised completion date of the construction works was 19 July 2017. Audit noted that: (a) the completion of a substantial part of works was delayed by 93 days (i.e. from 20 July 2017 to 20 October 2017) due to the delays in obtaining the approvals for a utility service (i.e. fresh water supply for fire services) and a statutory licence (i.e. the licence for the disposal of chemical waste) from relevant authorities; and (b) the substantial completion of works was further delayed by 138 days (i.e. from 21 October 2017 to 7 March 2018) due to the delays in obtaining the approvals for a utility service (i.e. potable water supply) and statutory licences (i.e. two licences for the manufacture of dangerous goods and eight licences for the storage of dangerous goods) from relevant authorities. In the event, 2 of the 4 treatment lines commenced operations on 21 October 2017. Although the other 2 treatment lines were ready for operation on 21 October 2017, their operations did not commence until the two required licences for the manufacture of dangerous goods were obtained on 7 March 2018 (para. 3.8).

12. ***Additional operating costs for treating washing machines and refrigerators.*** According to Contract A, monthly operation fee is paid to Contractor A based on the actual quantity of regulated WEEE treated during the month. Up to March 2024, the total amount of operation fee to Contractor A was \$1,256 million. Audit noted that, from October 2017 to March 2024, there was a shortfall in yearly average treatment capacity of 32% and 80% for refrigerators and washing machines respectively. According to EPD in February 2019, it was envisaged that

Executive Summary

WEEE·PARK had to maintain a throughput capacity for washing machines and refrigerators that exceeded their respective sub-type-specific design treatment capacities on an on-going basis (paras. 3.15 to 3.17). To cope with the shortfall in treatment capacity of washing machines and refrigerators, 4 ECs were issued under Contract A to instruct Contractor A, among others, to:

- (a) increase the processing capacity of washing machines and refrigerators of WEEE·PARK. In addition to the basic operation fee, top-up operation fee would be paid to Contractor A for treating washing machines and refrigerators beyond their respective sub-type-specific design treatment capacities. From October 2018 to March 2024, a top-up operation fee of \$165.3 million was incurred, representing 13 % of the total operation fee of \$1,256 million to Contractor A (para. 3.17(a)); and
- (b) since November 2019, deliver a portion of washing machines that were beyond the design treatment capacity of WEEE·PARK to licensed recyclers other than Contractor A for treatment. Based on the quantity of washing machines transferred and treated during the month, handling fee was paid to Contractor A and service fee for treatment was paid to the service providers respectively. From November 2019 to March 2024, a handling fee of \$23.1 million and a service fee for treatment of \$5 million were incurred (para. 3.17(b)).

13. ***Additional operating costs for providing collection and logistics services.*** The 4 ECs (see para. 12) also instructed Contractor A to provide the enhanced and extended collection and logistics services for all regulated WEEE since October 2018 and to provide collection and logistics services for the quantity of regulated WEEE that exceeded the baseline tonnage (i.e. the actual quantity of regulated WEEE collected by Contractor A in July 2018 before WPRS was implemented) during the month. From October 2018 to March 2024, in addition to the basic operation fee, a top-up logistics fee of \$253.7 million was incurred, representing 20% of the total operation fee of \$1,256 million to Contractor A. According to EPD, as of December 2018, there were 3,296 sellers of REE and almost all of these sellers had appointed Contractor A as their default collector, which far exceeded the number anticipated by EPD (i.e. 600 sellers of REE) (paras. 3.21 and 3.22). However, Audit noted that:

- (a) when formulating the anticipated number of sellers (i.e. 600), the latest estimation on the number of sellers of REE available to EPD was 795 sellers in 2011. EPD did not conduct a survey to obtain a more up-to-date

Executive Summary

estimation and it also did not document the basis of its anticipation (para. 3.22(b)); and

- (b) no consultation with stakeholders (e.g. REE sellers) was carried out by EPD to seek their views of appointing Contractor A as the collector and to derive a more accurate estimate on the total quantity of regulated WEEE to be collected by Contractor A (para. 3.22(c)).

14. ***Some facilities and equipment required frequent maintenance and long repairing time.*** Audit noted that: (a) Contractor A did not regularly compile detailed records of maintenance work and follow-up actions in relation to instances of failure in facilities and equipment that required frequent maintenance and long repairing time, and report such information in the monthly and yearly operational reports; and (b) from October 2017 to March 2024, there were instances of failure in facilities and equipment that required frequent maintenance and long repairing time. For example, from February 2018 to October 2023, there were 11 instances of failure in two treatment lines for at least 3 days, resulting in a total downtime of 56 days (ranging from 3 to 14 days for each instance) (paras. 3.28 and 3.29).

15. ***Scope for enhancing site and occupational safety.*** From October 2017 to March 2024, the site accident record aspect was rated as “poor” in 14 (78%) of the 18 Contractor A’s performance reports covering 43 non-fatal work injury accidents (involving sick leave ranging from 3 to 67 days). Audit noted that, notwithstanding that Contractor A implemented employee development programs to improve occupational safety and health since November 2020, there was no significant improvement to the site and occupational safety of WEEE·PARK. Of the 43 accidents, 25 (58%) happened after the implementation of the programs (para. 3.32).

16. ***Scope for improving the monitoring of environmental performance requirements.*** Under Contract A, in the event of non-compliance with any of the environmental performance requirements being detected, Contractor A should report the exceedance of compliance limit immediately to the Employer’s Representative and the frequency of monitoring for that requirement would change from level 1 (i.e. less stringent) to level 2 (i.e. more stringent). According to EPD, from October 2017 to March 2024, there were 4 incidents in which 8 samples on the environmental performance requirements were found exceeding the compliance limits. Audit noted that: (a) the Employer’s Representative was notified by Contractor A 20 days after

Executive Summary

the exceedance of compliance limits was found for 2 (25%) of the 8 samples; and (b) upon detection of exceedance of compliance limits for the 8 samples, while it took 2 days to trigger a level 2 monitoring for 4 samples, it took 6 to 22 days (averaging 12 days) to do so for the remaining 4 samples (paras. 3.38 and 3.39).

Other related issues

17. Registered suppliers of REE are required to pay recycling levies for REE distributed in Hong Kong. To determine the amount of recycling levies payable by the registered suppliers, registered suppliers should submit quarterly returns and an audit report annually to EPD for performing recycling levy assessment. According to EPD, the elapsed time from the end of reporting period (i.e. end of quarter) to the date of settlement of recycling levies for that reporting period by the registered suppliers should normally not exceed 150 days. Audit noted that, regarding the returns with processing completed by EPD from October 2020 to March 2024, 2,368 payment notices (involving recycling levies of \$928.3 million) were issued to the registered suppliers and 137 (6%) payment notices (involving recycling levies of \$9.2 million) took more than 150 days to settle, ranging from 151 to 300 days (averaging 188 days) (paras. 4.2 and 4.3).

18. *Need to ensure timely submission of returns and audit reports by registered suppliers of REE.* In general, registered suppliers of REE must submit returns and audit reports to EPD within 28 days after the last day of each reporting period and within 3 months after the last day of each audit year respectively. According to EPD guidelines issued in October 2020, if any registered suppliers of REE fail to submit the returns or audit reports by the deadlines of submission, warning letters, demanding submissions within 14 days, would be issued. Audit noted that, as of March 2024, of the 2,997 returns and 719 audit reports due for submission by the registered suppliers of REE from October 2020 to March 2024, 341 (11% of 2,997) returns and 145 (20% of 719) audit reports were overdue. However: (a) no warning letters were issued for 131 (38% of 341) returns and 50 (34% of 145) audit reports, of which 6 (5% of 131) returns and 26 (52% of 50) audit reports remained outstanding; and (b) of the 210 returns and 95 audit reports with warning letters issued, 68 (32% of 210) returns and 55 (58% of 95) audit reports were not submitted within 14 days after the issue of warning letters and 2 (1% of 210) returns and 6 (6% of 95) audit reports remained outstanding (paras. 4.4 and 4.6).

Executive Summary

19. ***Scope for improvement in completing the processing of returns and audit reports submitted by registered suppliers of REE.*** According to EPD guidelines issued in October 2020, for returns and audit reports submitted by the registered suppliers of REE, EPD would generally complete the checking and vetting within 15 working days after submissions are in order. Audit noted that, as of March 2024: (a) of the 2,995 returns and 567 audit reports approved by EPD, the processing of 1,825 (61% of 2,995) returns and 191 (34% of 567) audit reports were completed in more than 15 working days, ranging from 16 to 153 working days (averaging 38 working days) and from 16 to 246 working days (averaging 96 working days) respectively; and (b) of the 115 audit reports being processed by EPD, 82 (71%) were submitted more than 15 working days ago, ranging from 16 to 251 working days (averaging 122 working days) (paras. 4.8 and 4.9).

20. ***Need to ensure that payment notices for recycling levies are timely issued.*** According to EPD guidelines issued in October 2020, all payment notices and general demand notes should be issued before the due dates of the returns for the subsequent reporting period as far as possible. Audit noted that, as of March 2024, of the 2,368 payment notices issued in respect of returns approved during October 2020 to March 2024, 171 (7%) payment notices (accounting for a total amount of recycling levies of some \$10 million) were issued 2 to 89 working days (averaging 21 working days) after the due dates of the returns for the subsequent reporting period (paras. 4.11 and 4.12).

21. ***Need to ensure timely settlement of recycling levies by registered suppliers of REE.*** According to the Product Eco-responsibility (Regulated Electrical Equipment) Regulation (Cap. 603B), the payment of recycling levies must be made within 30 days after the day on which the payment notices were served on the registered suppliers of REE. Of the 2,368 payment notices issued, recycling levies of 312 (13%) payment notices were not settled on or before the due dates of the payment notices. As of May 2024, 1 (1% of 312) payment notice involving recycling levies of \$8,475 was not yet settled and had been overdue for 91 days (paras. 4.13, 4.15 and 4.16).

22. ***Need to closely monitor the cost recovery rates of WPRS.*** According to Financial Circular No. 6/2016, it is the Government's policy that fees charged by the Government should in general be set at levels adequate to recover the full cost of providing the goods or services. Since the implementation of WPRS, EPD conducted two costing reviews on the recycling levies of REE under WPRS in May 2022 and May 2024 and decided not to adjust the recycling levies. Audit noted that: (a) the

Executive Summary

overall cost recovery rate dropped from 105.2% (forecasted in May 2022) to 99.8% (forecasted in May 2024); and (b) the May 2024 review forecasted that the cost recovery rate for 2024-25 to 2028-29 would follow a downward trend and decreased from 96.2% for 2024-25 to 89.5% for 2028-29 (paras. 4.19 and 4.21).

23. ***Need to step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE.*** Audit noted that: (a) as of August 2024, Contractor A was the only recycler licensed to recycle certain sub-types of regulated WEEE, including air-conditioners, refrigerators, tumble dryers, dehumidifiers, and televisions and monitors with cathode ray tubes; and (b) in April 2021, Consultant Y informed EPD that the treatment capacity of a treatment line was almost fully utilised and the treatment of refrigerators might be an imminent problem (i.e. approaching the maximum treatment capacity). In Audit's view, EPD needs to step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE with few licensed recyclers (paras. 4.23 and 4.25).

24. ***Need to keep under review the effectiveness of WPRS.*** According to EPD, WPRS aims to achieve resources recovery and provide a long-term solution to potential land contamination and environmental problems arising from mishandling of WEEE during delivery, storage and dismantling processes. In 2022, about 25% of WEEE generated in Hong Kong was still disposed of at landfill and the actual quantity increased by 802 tonnes (5%) from 15,343 tonnes in 2021 to 16,145 tonnes in 2022. Audit noted that EPD has not conducted any formal review on WPRS since its implementation in August 2018 and Contract A for operating WEEE·PARK will expire in 2027. In Audit's view, it is an opportune time for EPD to conduct a review on WPRS and WEEE·PARK to evaluate their effectiveness and determine the way forward (paras. 4.30 and 4.32).

Audit recommendations

25. **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 Director of Environmental Protection should:**

Executive Summary

Administration of WPRS

- (a) **ensure that the processing of applications received for endorsement of RSPs and registration as registered suppliers of REE is timely completed in accordance with the stipulated time pledges (para. 2.14(a));**
- (b) **ensure timely submission of quarterly and annual reports by the licensees of e-WDLs and follow up overdue submission of quarterly and annual reports in accordance with the guidelines updated in September 2024 (para. 2.28(a) and (b));**
- (c) **enhance the monitoring of compliance of licensing requirements of e-WDLs by licensees (para. 2.28(d));**
- (d) **keep under review the frequency of inspections on individual suppliers of REE with a view to ensuring that the inspections are conducted in accordance with the stipulated requirements and document the justifications of selecting sellers and collectors of REE for inspections (para. 2.38(a) and (b));**
- (e) **ensure that inspection reports for inspections conducted on sellers and collectors of REE are timely prepared in accordance with the stipulated time pledges (para. 2.38(d));**
- (f) **ensure that adequate number of inspections on licensees of e-WDLs are conducted in accordance with the requirements stipulated in the guidelines (para. 2.38(f));**

Design, construction and operation of WEEE·PARK

- (g) **in implementing works projects involving waste treatment facilities under a DBO contract, conduct market surveys and consultations with stakeholders as comprehensively as practicable with a view to better estimating the treatment demand and incorporating the requirements on treatment capacity in the tender documents (para. 3.13(a));**

Executive Summary

- (h) **in implementing works projects involving construction of facilities, take measures to ensure the timely commissioning of operation (para. 3.13(b));**
- (i) **keep under review the cost-effectiveness of treating washing machines and refrigerators collected by WEEE·PARK and explore the feasibility to redesign WEEE·PARK with a view to aligning its treatment capacity with the mix of sub-types of regulated WEEE (para. 3.24(b) and (c));**
- (j) **conduct a cost-benefit analysis to determine whether alternative logistics service providers should be engaged in providing collection and logistics services for regulated WEEE that exceeded the baseline tonnage (para. 3.24(e));**
- (k) **when designing the terms of the upcoming contract for the operation of WEEE·PARK, conduct market surveys and consultations with stakeholders as comprehensively as practicable and consult the relevant stakeholders early, with a view to clearly setting out the scope of essential collection and logistics services with detailed performance requirements in the Employer's specifications (para. 3.24(f));**
- (l) **keep under review the conditions of facilities and equipment at WEEE·PARK (para. 3.34(b));**
- (m) **ensure that detailed records of maintenance work and follow-up actions in relation to instances of failure in facilities and equipment that required frequent maintenance and long repairing time are regularly compiled and reported in the monthly and yearly operational reports by Contractor A (para. 3.34(c));**
- (n) **make continued efforts to enhance site and occupational safety of WEEE·PARK (para. 3.34(d));**
- (o) **ensure that Contractor A timely reports all non-compliance test results on environmental performance requirements to EPD and timely triggers a level 2 (i.e. more stringent) monitoring for environmental performance requirements in accordance with the required timeframe specified by EPD (para. 3.48(a)(i) and (ii));**

Executive Summary

Other related issues

- (p) **take measures to ensure that:**
 - (i) **returns and audit reports are submitted by the registered suppliers of REE in a timely manner, including ensuring that warning letters are timely issued and considering other measures (e.g. imposing fines and/or surcharges on late submission cases) (para. 4.17(a));**
 - (ii) **the processing of returns and audit reports submitted by the registered suppliers of REE is timely completed in accordance with the stipulated time pledges (para. 4.17(b)); and**
 - (iii) **payment notices for recycling levies are timely issued in accordance with the stipulated time pledge (para. 4.17(c));**
- (q) **make continued efforts to ensure timely settlement of recycling levies by the registered suppliers of REE and take follow-up actions on the overdue payment notice for recycling levy as appropriate (para. 4.17(d) and (e));**
- (r) **closely monitor the cost recovery position of WPRS with a view to achieving full cost recovery and take actions where appropriate (para. 4.28(a));**
- (s) **step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE with few licensed recyclers (para. 4.28(b)); and**
- (t) **conduct a review on WPRS and WEEE·PARK to evaluate their effectiveness and determine the way forward (para. 4.33).**

Response from the Government

26. The Director of Environmental Protection thanks Audit for conducting the audit review of WPRS and agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 In May 2013, the Government committed to introduce the Producer Responsibility Scheme (PRS) on Waste Electrical and Electronic Equipment (WEEE) (hereinafter referred to as WPRS) in the “Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022” with a view to:

- (a) achieving resources recovery; and
- (b) providing a long-term solution to potential land contamination and environmental problems arising from mishandling of WEEE during delivery, storage and dismantling processes.

1.3 In March 2016, the Promotion of Recycling and Proper Disposal (Electrical Equipment and Electronic Equipment) (Amendment) Ordinance 2016 was enacted to amend the Product Eco-responsibility Ordinance (PERO — Cap. 603) (Note 1) and the Waste Disposal Ordinance (WDO — Cap. 354) and to provide a statutory regulatory framework for WPRS. Further to the enactment of the Amendment Ordinance, the Product Eco-responsibility (Regulated Electrical Equipment) Regulation (REE Regulation — Cap. 603B) (Note 2) was enacted in July 2017. The

Note 1: *In December 2005, the Government proposed to introduce PRSs for six types of products (including WEEE). PERO was enacted in July 2008 as a piece of enabling legislation to provide for the shared core elements of all PRSs and the fundamental regulatory requirements in respect of individual types of products concerned.*

Note 2: *REE Regulation provides the operational details of WPRS and prescribes the recycling levy collected in respect of regulated electrical equipment.*

Introduction

disposal licensing control, import and export permit control and landfill disposal ban in respect of e-waste (Note 3) commenced on 31 December 2018.

1.4 In October 2023, the Legislative Council (LegCo) further passed the Product Eco-responsibility (Amendment) Bill 2023 so that the enhanced WPRS would be implemented with effect from 1 July 2024. The Environmental Protection Department (EPD) is responsible for the administration of WPRS. The Environment and Ecology Bureau (EEB — Note 4) is responsible for policy matters on environmental protection and for overseeing the implementation of waste-to-resources management strategies and programmes.

Regulated electrical equipment

1.5 WPRS initially covers eight types of regulated electrical equipment (REE), namely air-conditioners, refrigerators with rated storage volume up to 500 litres, televisions, washing machines with rated washing capacity up to 10 kilogrammes, computers, printers, scanners and monitors. Starting from 1 July 2024, the scope has been expanded to cover refrigerators with rated storage volume up to 900 litres, washing machine with rated washing capacity up to 15 kilogrammes, stand-alone tumble dryers and dehumidifiers.

Regulatory measures of WPRS

1.6 WPRS has been implemented in phases since 1 August 2018. The regulatory measures of WPRS are as follows:

- (a) ***Free removal service.*** Under WPRS, statutory free removal service should be arranged by sellers of REE (i.e. persons who carry on a business of distributing REE to consumers) for consumers in accordance with the

Note 3: *Under WDO, “e-waste” refers to any electrical or electronic equipment that, judging by its appearance, is an item set out in Schedule 6 to PERO (i.e. regulated electrical equipment) and has been abandoned.*

Note 4: *In July 2022, EEB was formed to take over the policy responsibility for environmental matters from the then Environment Bureau, which is also referred to as EEB in this Audit Report for simplicity.*

removal service plans (RSPs) endorsed by EPD for disposal of the same type of abandoned REE. In an RSP, both collectors and recyclers should be specified and REE should be transferred by the collectors to the recyclers within a reasonable time. As of March 2024, there were 3,617 sellers with RSPs endorsed (Note 5);

- (b) ***Registration of suppliers of REE.*** Suppliers of REE (i.e. persons who manufacture REE in Hong Kong or import REE into Hong Kong for distribution) are required to register as registered suppliers with EPD and pay recycling levies for REE distributed in Hong Kong in the course of their business. As of March 2024, there were 208 registered suppliers of REE. The total amount of recycling levies received since the implementation of WPRS (i.e. 1 August 2018) and up to March 2024 was \$1,431 million; and
- (c) ***Licensing and permit control on e-waste.*** Since 31 December 2018, e-waste was no longer acceptable for disposal at landfills and designated waste disposal facilities (e.g. refuse transfer stations). Recyclers must obtain the waste disposal licence for e-waste (e-WDL) from EPD for storing, treating, reprocessing or recycling e-waste. Besides, recyclers must obtain the import and export permit for e-waste from EPD for importing and exporting e-waste. As of March 2024, there were 19 licensees of e-WDL and no permit holder for import and export of e-waste.

Design and construction of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

1.7 According to EPD, to contribute towards the proper management of WEEE locally, the Waste Electrical and Electronic Equipment Treatment and Recycling Facility (hereinafter referred to as WEEE·PARK) was developed at EcoPark in Tuen Mun. In October 2014, EEB informed the Public Works Subcommittee of the Finance

Note 5: According to EPD, for public not purchasing a new REE product, they are also provided with various recycling channels for disposing a regulated WEEE (e.g. non-statutory free collection service provided by the operator of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility).

Introduction

Committee of LegCo that the scope of works for the development of WEEE·PARK included the following:

- (a) design and construction of WEEE·PARK to treat and recycle 30,000 tonnes of regulated WEEE (i.e. air-conditioners, refrigerators, televisions, washing machines and computer products including computers, printers, scanners and monitors) per annum;
- (b) provision of treatment and recycling equipment and machinery; and
- (c) provision of architectural and landscaping works for WEEE·PARK.

In February 2015, the Finance Committee approved the development of WEEE·PARK at an approved project estimate of \$548.6 million.

1.8 EPD is responsible for monitoring the design, construction and operation of WEEE·PARK and adopted a design-build-operate (DBO — Note 6) arrangement for implementing the design, construction and operation of WEEE·PARK. In April 2012 and March 2015, EPD awarded two consultancies for the development of WEEE·PARK (see Table 1) respectively, as follows:

- (a) Consultancy X for the feasibility study; and
- (b) Consultancy Y for the design and construction supervision work of WEEE·PARK, which involved a DBO contract (i.e. Contract A — see para. 1.9). Being the Employer's Representative for the DBO contract, Consultant Y's services included supervising the design and construction of WEEE·PARK, and supervising the operation of WEEE·PARK up to December 2021.

Note 6: *DBO is a form of contract procurement whereby the contractor is required to design and construct a proposed facility in accordance with all requirements set forth in the contract by the Government. Upon completion, the contractor will be required under the contract to operate and maintain the completed facility for a specified period of time. The ownership of the facility will remain with the Government throughout the contract duration. Upon expiry of the operation phase specified in the contract, the facility will be handed back to the Government free of any charges in a specified condition.*

Table 1

**Consultancies awarded for the development of WEEE·PARK
(March 2024)**

Consultancy	Consultant	Particulars	Consultancy fee (\$ million)
X (Awarded in April 2012)	X	Feasibility study	5.9 (Note 1)
Y (Awarded in March 2015)	Y	Design and construction supervision work	6.7 (Note 2)
Total			12.6

Source: EPD records

Note 1: For Consultancy X, the consultancy fee of \$5.9 million was funded under the block allocation Subhead 5101DX of the Capital Works Reserve Fund Head 705 under the control of EPD.

Note 2: For Consultancy Y, the consultancy fee of \$6.7 million was funded under the project vote for the development of WEEE·PARK (see para. 1.7).

1.9 In March 2015, EPD awarded Contract A to a contractor (Contractor A) for the design, construction and operation of WEEE·PARK at a contract sum of \$1,727.9 million, which comprised:

- (a) \$420.6 million (24%) for the design and construction of WEEE·PARK; and
- (b) \$1,307.3 million (76%) for the operation stage (covering the contractual operation period of 10 years) (Note 7).

1.10 The design and construction of WEEE·PARK commenced in April 2015 and were substantially completed on 7 March 2018, about 9.7 months (296 days) later

Note 7: *According to EPD, the approved project estimate of \$548.6 million (see para. 1.7) would cover the design and construction portions while the operating costs for WEEE·PARK would be funded under the General Revenue Account.*

Introduction

than the original contract completion date of 15 May 2017. The operation stage commenced by phases on 21 October 2017 and 8 March 2018.

Project costs

1.11 As of March 2024, the total project cost was \$455.1 million (i.e. 83% of the approved project estimate totalling \$548.6 million). Of this \$455.1 million:

- (a) \$406.4 million (89%) was related to expenditure for the design and construction of WEEE-PARK under Contract A (see Table 2); and
- (b) the remaining \$48.7 million (11%) comprised resident site staff costs (Note 8) of \$41.8 million, consultancy fees of \$6.7 million (see Note 2 to Table 1 in para. 1.8) and miscellaneous costs for works carried out by other government departments of \$0.2 million.

Table 2

**Contract expenditure of Contract A
relating to design and construction portions
(March 2024)**

Original contract sum (a)	Contract expenditure (b)	Decrease (c) = (b) – (a)	Decrease in provision for price fluctuation adjustment (d)	Decrease after price fluctuation adjustment (e) = (c) – (d)
(\$ million)				
420.6	406.4	(14.2) (3.4%)	(11.8) (2.8%)	(2.4)

Source: EPD records

Note 8: *Consultants are required to employ resident site staff of different grades (e.g. professional grade and technical grade) for supervising contractors' works. The Government reimburses consultants for the personal emoluments of the staff and pays an on-cost to consultants to cover their costs in managing the staff.*

Operation of WEEE·PARK

1.12 Since the commissioning of WEEE·PARK (i.e. 21 October 2017) and up to December 2021, Consultant Y was the Employer's Representative for Contract A and responsible for supervising Contractor A's operation of WEEE·PARK, and reporting Contractor A's performance to EPD. Since January 2022, EPD has fully taken up the work of monitoring (including supervising) Contractor A's operation of WEEE·PARK.

1.13 Monthly operation fee is paid to Contractor A based on the actual quantity of regulated WEEE treated during the month. From October 2017 to March 2024, the average quantity of regulated WEEE treated by WEEE·PARK was 20,947 tonnes per year (i.e. 70% of the design annual treatment capacity of 30,000 tonnes). In 2023-24, the amount of payment to Contractor A for operation of WEEE·PARK was \$199.8 million. Up to March 2024, the total amount of operation fee to Contractor A was \$1,256 million. Photograph 1 shows WEEE·PARK.

Photograph 1

WEEE·PARK (October 2020)



Source: EPD records

Responsible divisions of EPD

1.14 The main divisions of EPD responsible for the administration of WPRS and monitoring the design, construction and operation of WEEE·PARK are as follows:

Introduction

- (a) the Waste Management Division is responsible for, among others, the administration of WPRS (excluding the licensing and permit control on e-waste) and monitoring the design, construction and operation of WEEE·PARK. As of March 2024, 42 staff in this Division were involved in carrying out the relevant duties;
- (b) the Environmental Compliance Division is responsible for, among others, the licensing and permit control on e-waste. As of March 2024, 453 staff in this Division were involved in carrying out the relevant duties (Note 9); and
- (c) the Central Prosecution Unit under the Corporate Affairs Division is responsible for, among others, instigating prosecution actions upon non-compliance of PERO, REE Regulation and WDO in relation to e-waste. From August 2018 to March 2024, a total of 247 (i.e. 28, 125 and 94 for suppliers, sellers and recyclers respectively) cases related to WPRS were convicted and the offenders were fined \$523,650.

According to EPD, it could not provide a breakdown of staff expenditure incurred by the Divisions solely for the administration of WPRS and monitoring the design, construction and operation of WEEE·PARK. An extract of EPD's organisation chart as at 31 March 2024 is at Appendix A.

Audit review

1.15 In April 2024, the Audit Commission (Audit) commenced a review of EPD's work in the administration of WPRS and monitoring the design, construction and operation of WEEE·PARK. The audit review has focused on the following areas:

- (a) administration of WPRS (PART 2);

Note 9: *According to EPD, the licensing and enforcement work on e-waste control was only a small part of the overall enforcement work of the Division, including processing various licence applications, handling pollution complaints, conducting inspections and enforcing environmental legislations in relation to air, noise, waste and water media.*

- (b) design, construction and operation of WEEE·PARK (PART 3); and
- (c) other related issues (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.16 The Director of Environmental Protection thanks Audit for conducting the audit review of WPRS and agrees with the audit recommendations. He has said that EPD will take follow-up actions and improvement measures as appropriate.

Acknowledgement

1.17 Audit would like to acknowledge with gratitude the full cooperation of the staff of EPD during the course of the audit review.

PART 2: ADMINISTRATION OF THE PRODUCER RESPONSIBILITY SCHEME ON WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

- 2.1 This PART examines the administration of WPRS by EPD, focusing on:
- (a) processing of applications for suppliers and sellers of REE (paras. 2.2 to 2.15);
 - (b) licensing and permit control on e-waste (paras. 2.16 to 2.29); and
 - (c) inspections on suppliers, sellers, collectors and recyclers (paras. 2.30 to 2.39).

Processing of applications for suppliers and sellers of regulated electrical equipment

2.2 EPD is responsible for processing applications for suppliers and sellers of REE, as follows:

- (a) ***Application for endorsement of RSPs.*** Sellers of REE are required to submit applications to and have the RSPs endorsed by EPD before distributing REE to consumers; and
- (b) ***Application for registration as registered suppliers of REE.*** Suppliers of REE should submit applications to and obtain approval from EPD for becoming registered suppliers before distributing REE in Hong Kong.

Time pledge for processing applications not met

2.3 According to EPD guidelines issued in October 2020, regarding the applications received for endorsement of RSPs and registration as registered suppliers of REE, EPD should complete the checking and vetting of the submitted applications within 10 working days after the submissions are in order.

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

2.4 From October 2020 to March 2024, EPD received 164 applications for endorsement of RSPs and 95 applications for registration as registered suppliers of REE. Audit noted that the time pledge for completing the processing of these applications (i.e. 10 working days after the submissions are in order) was not met in some cases. As of March 2024:

- (a) ***Application for endorsement of RSPs.*** Of the 164 applications received:
 - (i) 155 (94%) were approved by EPD. The processing of 6 (4% of 155) applications was completed more than 10 working days after the submissions were in order, ranging from 11 to 14 working days (averaging 12 working days);
 - (ii) 1 (1%) was rejected by EPD;
 - (iii) 5 (3%) were withdrawn by the applicants; and
 - (iv) 3 (2%) were being processed by EPD; and
- (b) ***Application for registration as registered suppliers of REE.*** Of the 95 applications received:
 - (i) 65 (69%) were approved by EPD;
 - (ii) 4 (4%) were rejected by EPD. The processing of 2 (50% of 4) applications was completed 16 and 26 working days (averaging 21 working days) after the submissions were in order;
 - (iii) 24 (25%) were withdrawn by the applicants; and
 - (iv) 2 (2%) were being processed by EPD.

2.5 In Audit's view, EPD needs to take measures to ensure that the processing of applications received for endorsement of RSPs and registration as registered suppliers of REE is timely completed in accordance with the stipulated time pledges.

Scope for improvement in deregistration of REE suppliers

2.6 According to EPD, for registered suppliers of REE who are no longer engaged in the relevant business, they should submit applications to EPD to cancel their registrations. According to EPD guidelines issued in October 2020:

- (a) together with the application forms for cancellation, REE suppliers should submit to EPD:
 - (i) the last returns (covering the period from the first day of the quarter during which the deregistration application is submitted to the cancellation date); and
 - (ii) the last audit reports (covering the period from the date immediately after the last preceding annual audit period end date to the cancellation date), unless an exemption from submission is obtained (Note 10);
- (b) EPD should complete the checking and vetting of applications received for deregistration of REE suppliers (including the last returns and last audit reports) within 10 working days after the submissions or pre-cancellation inspections (if conducted) are in order, whichever is later; and
- (c) to ensure that the deregistered suppliers have ceased REE distribution, post-cancellation inspections may be required within 6 months after the deregistration was approved.

Audit examination revealed that there was scope for improvement in handling applications for deregistration of REE suppliers (see paras. 2.7 to 2.10).

Note 10: *Under REE Regulation, a registered supplier of REE may apply for exemption from submission of an audit report if: (a) for an ordinary registration, the reporting periods falling within the relevant audit year cover less than twelve months in total and the aggregate recycling levies payable for the reporting periods do not exceed \$20,000; or (b) it is a short-term registration.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

2.7 Time pledge for completing the processing of applications for deregistration of REE suppliers not met. From October 2020 to March 2024, EPD received 67 applications for deregistration of REE suppliers. Audit noted that the time pledge for completing the processing of these 67 applications (i.e. 10 working days) was not met in some cases. As of March 2024, of the 67 applications received:

- (a) 60 (90%) were approved by EPD. The processing of 16 (27% of 60) applications was completed more than 10 working days after the submissions or pre-cancellation inspections were in order, whichever was later, ranging from 11 to 26 working days (averaging 17 working days);
- (b) 2 (3%) were rejected by EPD (Note 11). The processing of 1 (50% of 2) application was completed 26 working days after the submission was in order (which was later than the relevant pre-cancellation inspection);
- (c) 1 (1%) was withdrawn by the applicant; and
- (d) 4 (6%) were being processed by EPD.

2.8 Selection criteria for conducting cancellation inspections and time pledge for conducting pre-cancellation inspections not set. Audit noted that, as of March 2024:

- (a) **Selection criteria.** EPD did not set out any criteria in selecting deregistration applications for pre-cancellation and post-cancellation inspections. Inspections were not conducted and reasons were not documented in some cases, as follows:

Note 11: *According to EPD, when processing these two deregistration applications, it conducted inspections and found out that the two registered suppliers were still distributing/supplying REE. The applications were therefore rejected.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (i) of the 63 processed applications (i.e. 67 received – 4 under processing), pre-cancellation inspections were not conducted for 6 (10%) applications (Note 12); and
 - (ii) of the 60 approved applications, post-cancellation inspections were not conducted for 57 (95%) applications, of which the reasons for not conducting inspections were not documented for 55 (96% of 57) applications; and
- (b) *Time pledge.* EPD did not set any time pledge for conducting pre-cancellation inspections upon receipt of deregistration applications. Of the 57 (i.e. 63 – 6) applications with pre-cancellation inspections conducted, inspections were conducted 1 day to 13.1 months (averaging 1.4 months) after the dates of application for deregistration.

2.9 *Last audit reports not submitted before approval of deregistration applications.* From October 2020 to March 2024, EPD approved 60 applications for deregistration of REE suppliers, of which 53 were exempted from submitting the last audit reports. Audit noted that, of the 7 applications that were required to submit the last audit reports, 1 (14%) had not done so when EPD approved the application.

2.10 In Audit's view, EPD needs to:

- (a) take measures to ensure that the processing of applications received for deregistration of REE suppliers is timely completed in accordance with the stipulated time pledge;
- (b) set out selection criteria for conducting pre-cancellation and post-cancellation inspections in processing applications for deregistration of REE suppliers and specific time pledge for conducting pre-cancellation inspections; and

Note 12: *According to EPD, of the 6 applications, pre-cancellation inspections could not be conducted for: (a) 4 applications due to the coronavirus disease (COVID-19) epidemic; and (b) 2 applications because the business of the applicants had been closed down.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (c) take measures to ensure that the required submissions (e.g. the last audit reports) are received before approving the applications for deregistration of REE suppliers.

Scope for enhancing the publicity on the obligations of suppliers under PERO in distributing REE in Hong Kong via cross-boundary and overseas online sales platforms

2.11 Under PERO, it is stipulated that a registered supplier must pay a recycling levy for any REE if:

- (a) in the course of the supplier's business, the equipment is manufactured in Hong Kong by the supplier or imported into Hong Kong by the supplier for distribution; and
- (b) the supplier distributes the equipment (e.g. supply the equipment by way of sale, hire or hire-purchase, or transmit or deliver the equipment for supplying by way of sale, hire or hire-purchase) or uses the equipment for the first time.

2.12 Audit noted that, in November 2023, an enquiry was raised by a LegCo Member about whether electrical products ordered via cross-boundary e-commerce platforms were required to comply with the existing legislations regulating electrical products sold in Hong Kong. In September 2024, EPD informed Audit that:

- (a) it was clearly stated under PERO that any person, in the course of business, manufacturing or importing REE for distribution in Hong Kong should follow the regulatory measures of WPRS, irrespective of whether the sales platforms were online or not; and
- (b) there was a successful prosecution case in which an online sales platform importing cross-boundary REE was convicted.

2.13 In Audit's view, EPD needs to enhance the publicity on the obligations of suppliers under PERO in distributing REE in Hong Kong via cross-boundary and overseas online sales platforms.

Audit recommendations

2.14 Audit has *recommended* that the Director of Environmental Protection should:

- (a) take measures to ensure that the processing of applications received for endorsement of RSPs, registration as registered suppliers of REE and deregistration of REE suppliers is timely completed in accordance with the stipulated time pledges;**
- (b) set out selection criteria for conducting pre-cancellation and post-cancellation inspections in processing applications for deregistration of REE suppliers and specific time pledge for conducting pre-cancellation inspections;**
- (c) take measures to ensure that the required submissions (e.g. the last audit reports) are received before approving the applications for deregistration of REE suppliers; and**
- (d) enhance the publicity on the obligations of suppliers under PERO in distributing REE in Hong Kong via cross-boundary and overseas online sales platforms.**

Response from the Government

2.15 The Director of Environmental Protection agrees with the audit recommendations. He has said that EPD will:

- (a) take measures to strengthen the monitoring of the processing of applications received and facilitate application process by adopting a pragmatic approach in the work arrangement;**
- (b) review the internal guidelines, and set selection criteria and time pledge for conducting cancellation inspections in processing applications for deregistration of REE suppliers;**

- (c) ensure that the processing of deregistration cases would be properly handled; and
- (d) enhance the publicity on the obligations of suppliers under PERO in distributing REE in Hong Kong via cross-boundary and overseas online sales platforms.

Licensing and permit control on e-waste

2.16 EPD is responsible for processing applications received related to licensing and permit control on e-waste, as follows:

- (a) ***Application for e-WDLs.*** Recyclers of e-waste must submit applications to and obtain e-WDLs from EPD before storing, treating, reprocessing or recycling of e-waste (Note 13). An applicant of e-WDL is required to submit an operation plan (Note 14) and other relevant documents (e.g. proof showing that the applicant is the owner or lawful occupier of the waste disposal site, a site location plan showing the boundary of the facility and its surrounding land uses, etc.) to support the application; and
- (b) ***Application for import and export permits for e-waste.*** Recyclers of e-waste must submit applications to and obtain the import and export permits for e-waste from EPD before importing and exporting e-waste. An applicant of permit is required to provide supplementary information (e.g. reasons for the proposed waste import or export, waste quantity and characteristics, details of recycling facilities, etc.) to support the application.

In March 2022, EPD laid down guidelines setting out time targets for various processing steps during its vetting of the applications. From March 2022 to

Note 13: *According to EPD, an e-WDL is normally valid up to three years. As of March 2024, the application fees for the application of a new e-WDL and a renewed e-WDL were \$29,820 and \$14,840 respectively.*

Note 14: *According to EPD, the operation plan contains details demonstrating that the facility would be properly operated to ensure that e-waste would be treated and recycled in an environmentally safe and acceptable manner.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

March 2024, EPD received a total of 7 applications for e-WDLs from recyclers of e-waste (Note 15) and all of them were processed within the time targets.

Need to ensure timely submission of reports by licensees of e-WDLs

2.17 According to EPD, licensees of e-WDLs should submit quarterly and annual reports to EPD in accordance with the terms and conditions of e-WDLs (Note 16), as follows:

- (a) ***Quarterly reports.*** The quarterly reports should summarise activities of the waste disposal facilities (e.g. breakdown of throughput) during the reporting period. In general, the quarterly reports must be submitted within 10 days after the last day of March, June, September and December; and
- (b) ***Annual reports.*** The annual reports should summarise activities of the waste disposal facilities during the reporting period and contain other information, including the environmental control and compliance monitoring data, and an environmental audit report. In general, the annual reports must be submitted within one month after the last day of the calendar year to be reported on.

2.18 According to EPD, as of March 2024, there were 331 quarterly reports and 87 annual reports due for submission by the licensees of e-WDLs. Audit examination revealed that:

- (a) ***Quarterly reports.*** Of the 331 quarterly reports, 82 (24.8%) were not submitted by the due dates, as follows:

Note 15: *As of March 2024, of these 7 applications, 2 (29%) were approved, 1 (14%) was withdrawn by the applicant and 4 (57%) were being processed by EPD.*

Note 16: *According to EPD, under WDO, any person who contravenes any term and condition of e-WDLs is liable to: (a) for the first offence, a fine of \$200,000 and imprisonment for 6 months; (b) for subsequent offences, a fine of \$500,000 and imprisonment for 6 months; and (c) in addition, if the offence is a continuing offence, a fine of \$10,000 for each day.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (i) 1 (0.3% of 331) report had not been submitted, which had been overdue for 81 days (Note 17); and
 - (ii) 81 (24.5% of 331) reports were submitted 1 to 111 days (averaging 8 days) after the due dates (Note 18); and
- (b) **Annual reports.** Of the 87 annual reports, 25 (29%) were not submitted by the due dates, as follows:
- (i) 1 (1% of 87) report had not been submitted, which had been overdue for 60 days (see Note 17 to (a)(i) above); and
 - (ii) 24 (28% of 87) reports were submitted 1 to 100 days (averaging 32 days) after the due dates (see Note 18 to (a)(ii) above).

2.19 Audit noted that EPD did not lay down guidelines on the procedures to follow up overdue submission of quarterly and annual reports from the licensees of e-WDLs. According to EPD, reminders via emails or phone calls had been given to the licensees by EPD for the overdue quarterly and annual reports, whereas warning letters had been issued by EPD for 4 overdue annual reports. However, not all correspondence had been filed.

2.20 In September 2024, EPD informed Audit that the guidelines were updated in September 2024, as follows:

Note 17: *According to EPD, the licensee concerned verbally informed EPD that the licensed facility had ceased operation since the fourth quarter of 2023. EPD had issued reminder emails to the licensee concerned from February to July 2024 to remind it to submit the overdue quarterly report for the fourth quarter of 2023 and the overdue annual report for 2023. Besides, EPD conducted inspections in May and August 2024 and revealed that the facility had been padlocked and was not operating.*

Note 18: *According to EPD: (a) 5 quarterly reports and 1 annual report were submitted late due to the interruption of the licensees' normal operation during the COVID-19 epidemic and EPD considered that it was appropriate to provide flexibility to the recycling trade, particularly those with no environmental pollution issue; and (b) the late submission of 1 annual report was from a licensee with operation not yet commenced as of the end of the reporting period.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (a) to establish procedures in issuing reminders to licensees of e-WDLs for submission of quarterly and annual reports, and to remind EPD staff to properly maintain records for the reminders issued; and
- (b) to establish procedures in issuing letters (e.g. advisory notes) to follow up overdue submission of quarterly and annual reports from the licensees of e-WDLs, and to remind EPD staff to properly maintain records for the letters issued.

2.21 In Audit's view, EPD needs to take measures to:

- (a) ensure timely submission of quarterly and annual reports by the licensees of e-WDLs, including issuing reminders and maintaining related records in accordance with the guidelines updated in September 2024; and
- (b) follow up overdue submission of quarterly and annual reports from the licensees of e-WDLs, including issuing letters (e.g. advisory notes) and maintaining related records in accordance with the guidelines updated in September 2024.

Scope for improvement in completing the processing of reports submitted by licensees of e-WDLs

2.22 Audit noted that:

- (a) unlike the processing of returns and audit reports submitted by the registered suppliers of REE (see para. 4.8), EPD did not set any time pledges for completing the processing of quarterly and annual reports submitted by the licensees of e-WDLs; and
- (b) EPD did not maintain records on the dates of completing the checking of quarterly and annual reports. Therefore, Audit could not ascertain the processing time taken by EPD for checking the quarterly and annual reports.

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

2.23 In September 2024, EPD informed Audit that the guidelines were updated in September 2024 to stipulate that the processing of quarterly and annual reports submitted by the licensees of e-WDLs should be completed within one month upon receipt of the reports concerned and relevant supplementary information, and to remind EPD staff to properly document the relevant dates. In Audit's view, EPD needs to take measures to ensure timely completion of the processing of quarterly and annual reports submitted by the licensees of e-WDLs and properly document the relevant dates in accordance with the guidelines updated in September 2024.

Scope for enhancing the monitoring of compliance of licensing requirements of e-WDLs by licensees

2.24 According to EPD:

- (a) the e-waste disposal operation at the licensed facilities should be carried out in accordance with the licensing requirements of e-WDLs (Note 19); and
- (b) to monitor the compliance of the licensing requirements of e-WDLs by the licensees, they are required to submit quarterly and annual reports, which summarise activities of the facilities during the reporting period (e.g. breakdown of throughput during the reporting period including quantity treated for each type of e-waste).

2.25 Audit noted that the quarterly reports submitted by the licensees of e-WDLs did not facilitate the monitoring of certain licensing requirements of e-WDLs. For example:

- (a) according to the licensing requirements, the licensees should not treat or dispose of a quantity of e-waste exceeding the specified maximum daily handling capacity for each type of e-waste; and

Note 19: *According to EPD, any breach of the licensing terms and conditions or offences under WDO may lead to prosecution and/or licence cancellation. For minor non-compliance with the operation plans, appropriate follow-up actions such as issuing advisory/warning letters to the licensees would be taken by EPD.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (b) however, the licensees of e-WDLs were only required to report the amount of each type of e-waste treated during the quarter in the quarterly reports but not the daily breakdown of the amount of e-waste treated.

2.26 According to EPD:

- (a) it did not maintain records indicating the amount of each type of e-waste treated by the licensees of e-WDLs each day. It would take an average of the amount of e-waste treated during the quarter to derive the average daily amount to determine whether the licensees of e-WDLs comply with the maximum daily handling capacity requirement; and
- (b) suitable terms and conditions were imposed in the e-WDLs to ensure that the licensed facilities were operated in an environmentally safe and acceptable manner. Compliance inspections at licensed facilities would be conducted by EPD and follow-up actions would be taken by EPD for non-compliances causing environmental problems identified during the inspections.

2.27 In Audit's view, EPD needs to enhance the monitoring of compliance of licensing requirements of e-WDLs by licensees (e.g. by reporting the daily breakdown of the amount of each type of e-waste treated during the period by the licensees of e-WDLs).

Audit recommendations

2.28 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **take measures to ensure timely submission of quarterly and annual reports by the licensees of e-WDLs, including issuing reminders and maintaining related records in accordance with the guidelines updated in September 2024;**
- (b) **take measures to follow up overdue submission of quarterly and annual reports from the licensees of e-WDLs, including issuing letters**

(e.g. advisory notes) and maintaining related records in accordance with the guidelines updated in September 2024;

- (c) take measures to ensure timely completion of the processing of quarterly and annual reports submitted by the licensees of e-WDLs and properly document the relevant dates in accordance with the guidelines updated in September 2024; and
- (d) enhance the monitoring of compliance of licensing requirements of e-WDLs by licensees (e.g. by reporting the daily breakdown of the amount of each type of e-waste treated during the period by the licensees of e-WDLs).

Response from the Government

2.29 The Director of Environmental Protection agrees with the audit recommendations. He has said that EPD will:

- (a) promulgate the updated guidelines to its staff and organise internal trainings to remind them to follow the updated guidelines accordingly; and
- (b) revise the terms and conditions of e-WDLs in new and renewed e-WDLs to require the licensees to report the daily breakdown of the amount of e-waste treated during the period in the quarterly and annual reports.

Inspections on suppliers, sellers, collectors and recyclers

Scope for improvement in conducting inspections on suppliers, sellers and collectors of REE

2.30 According to EPD, it will conduct inspections to identify potential non-compliances and levy evasion cases (Note 20) under PERO and REE Regulation. From August 2018 to March 2024, EPD conducted 682 inspections on registered

Note 20: *Under PERO and REE Regulation, registered suppliers of REE are required to pay recycling levies for REE distributed in Hong Kong.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

suppliers of REE, 2,727 inspections on sellers with RSPs endorsed by EPD and 204 inspections on collectors specified in the endorsed RSPs.

2.31 *Inspections on suppliers of REE not conducted in accordance with stipulated frequency.* According to EPD guidelines issued in November 2021, subject to resources availability, all registered suppliers of REE are targeted to be inspected within a 12 to 18-month cycle. In November 2023, after reviewing the situation, workload and human resources availability (e.g. other enforcement burden), EPD revised the guidelines such that all registered suppliers of REE are targeted to be inspected within a 24 to 36-month cycle. As of March 2024, there were 208 registered suppliers of REE. Audit noted that the inspections on some of the 208 registered suppliers did not meet the revised target inspection frequency (i.e. at least once in 36 months), as follows:

- (a) for 22 (11%) suppliers, the periods between any two consecutive inspections on the same supplier (Note 21) ranged from 36.3 months to 5 years (averaging 3.5 years); and
- (b) as of March 2024, the last inspections of 7 (3%) suppliers were conducted 36.1 months to 3.7 years (averaging 3.3 years) ago.

2.32 *Need to properly document justifications of selecting sellers and collectors of REE for inspections.* As of March 2024, there were 3,617 sellers of REE with RSPs endorsed and 218 collectors specified in the RSPs endorsed by EPD. According to EPD, due to the vast number of sellers of REE and relatively low risk of offence for collectors of REE, a risk-based approach is adopted to conduct inspections (e.g. complaint cases, targeted shops with more branch shops and targeted collectors with conviction records would be accorded a higher priority). Audit noted that, from August 2018 to March 2024:

- (a) *Sellers of REE.* Of the 3,617 sellers with RSPs endorsed:

Note 21: *For the first inspection of a registered supplier, it refers to the period between the commencement date of registration and the date of the first inspection.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (i) 2,022 (56%) had not been inspected, of which 1,924 (95% of 2,022) were with RSPs endorsed in 2018; and
 - (ii) 1,595 (44%) had been inspected for 1 to 19 times (averaging 1.7 times); and
- (b) ***Collectors of REE.*** Of the 218 collectors specified in the RSPs endorsed by EPD:
- (i) 63 (29%) had not been inspected, of which 51 (81% of 63) were specified in the RSPs endorsed in 2018; and
 - (ii) 155 (71%) had been inspected for 1 to 4 times (averaging 1.3 times).

While a considerable number of sellers and collectors of REE had not been inspected by EPD, some were inspected multiple times. However, there was no documentation showing the justifications of selecting the above sellers and collectors of REE for inspections.

2.33 *Need to prepare inspection reports in accordance with specific time pledge and make better use of information management system.* According to EPD, for inspections conducted on sellers and collectors of REE, inspection reports should be prepared within 5 working days after the inspections were conducted. For inspections conducted on suppliers of REE, inspection reports should be submitted for approval as soon as practicable. Since August 2019, inspection reports for inspections conducted on suppliers, sellers and collectors of REE have been prepared in EPD's information management system. Audit noted that:

- (a) EPD did not set any time pledge for preparing inspection reports for inspections conducted on suppliers of REE; and
- (b) the information management system could not generate readily available management reports showing whether the inspection reports were timely prepared. Audit examined 40 inspection reports (i.e. 10, 10 and 20 for inspections conducted on sellers, collectors and suppliers of REE respectively) and noted that, as of July 2024:

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (i) of the 20 selected inspections on sellers and collectors of REE, the inspection reports of 13 (65%) were prepared more than 5 working days after the dates of inspection, ranging from 6 to 59 working days (averaging 18 working days); and
- (ii) for the 20 selected inspections on suppliers of REE, the inspection reports were prepared 1 to 15 working days after the dates of inspection (averaging 5 working days).

2.34 In Audit's view, EPD needs to:

- (a) keep under review the frequency of inspections on individual suppliers of REE with a view to ensuring that the inspections are conducted in accordance with the stipulated requirements;
- (b) document the justifications of selecting sellers and collectors of REE for inspections;
- (c) set specific time pledge for preparing inspection reports for inspections conducted on suppliers of REE;
- (d) take measures to ensure that inspection reports for inspections conducted on suppliers, sellers and collectors of REE are timely prepared in accordance with the stipulated time pledges; and
- (e) make better use of its information management system for generating management reports related to inspections conducted on suppliers, sellers and collectors of REE.

Scope for improvement in conducting inspections at the licensed e-waste disposal facilities of recyclers

2.35 According to EPD, it will conduct inspections to ensure that e-waste disposal operation at the licensed facilities is carried out in accordance with the respective licensing requirements and the approved operation plans. Regular inspections would be arranged to closely monitor the performance of the e-waste disposal facilities of recyclers according to the inspection priorities. From

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

December 2018 to March 2024, EPD conducted 581 inspections on 23 licensees of e-WDLs.

2.36 Audit noted that there was scope for improvement in conducting inspections at the licensed e-waste disposal facilities, as follows:

- (a) ***Inspections at e-waste disposal facilities of licensees of e-WDLs not conducted in accordance with stipulated frequency.*** According to EPD guidelines issued in June 2020, regular inspections of not less than 8 times for the first year of licensing period at the e-waste disposal facilities of licensees of e-WDLs should be conducted. For each subsequent year, not less than 8 times of inspections should be conducted for facilities involving disposal of chemical waste or without good compliance records (Note 22). Of the 23 licensees of e-WDLs, Audit examined the inspection records of 5 licensees and noted that, from June 2020 to March 2024:
 - (i) 2 licensees (with e-WDLs commenced in June 2021 and October 2020 respectively) were inspected less than 8 times (i.e. 3 and 5 times) in the first year of their respective licensing periods (Note 23); and
 - (ii) 1 licensee (with e-WDL commenced in December 2018 and involving in disposal of chemical waste) was inspected less than 8 times (i.e. 5, 2 and 3 times) in each of the three years from January to December 2021, January to December 2022 and January to December 2023 (see Note 23); and
- (b) ***No time pledge for preparation of inspection checklists.*** According to EPD guidelines issued in June 2020, the inspection team should record the inspection results on the inspection checklist after each inspection. Audit noted that EPD did not set any time pledge for preparing the inspection

Note 22: *For facilities not involving disposal of chemical waste and having good compliance records, not less than 4 inspections per year should be conducted for each subsequent year.*

Note 23: *According to EPD, during 2020 to 2022, the number of inspections conducted was reduced due to the COVID-19 epidemic.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

checklists. Audit examined 30 inspection checklists and noted that the checklists were prepared 0 to 243 working days (averaging 20 working days) after the dates of inspection (Note 24).

2.37 In Audit's view, EPD needs to:

- (a) take measures to ensure that adequate number of inspections on licensees of e-WDLs are conducted in accordance with the requirements stipulated in the guidelines; and
- (b) set specific time pledge for preparing the inspection checklists for inspections conducted on licensees of e-WDLs.

Audit recommendations

2.38 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **keep under review the frequency of inspections on individual suppliers of REE with a view to ensuring that the inspections are conducted in accordance with the stipulated requirements;**
- (b) **document the justifications of selecting sellers and collectors of REE for inspections;**
- (c) **set specific time pledge for preparing inspection reports for inspections conducted on suppliers of REE;**

Note 24: *According to EPD: (a) 2 cases with exceptionally long processing time of 71 and 148 working days were due to the COVID-19 epidemic; and (b) 1 case with exceptionally long processing time of 243 working days was because the responsible EPD staff forgot to submit the relevant inspection checklist after it was prepared.*

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (d) **take measures to ensure that inspection reports for inspections conducted on suppliers, sellers and collectors of REE are timely prepared in accordance with the stipulated time pledges;**
- (e) **make better use of EPD's information management system for generating management reports related to inspections conducted on suppliers, sellers and collectors of REE;**
- (f) **take measures to ensure that adequate number of inspections on licensees of e-WDLs are conducted in accordance with the requirements stipulated in the guidelines; and**
- (g) **set specific time pledge for preparing the inspection checklists for inspections conducted on licensees of e-WDLs.**

Response from the Government

2.39 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) noting the availability of resources and the need to cater for other enforcement duties and/or non-enforcement work, EPD will keep under review the frequency of inspections on individual suppliers of REE;
- (b) EPD will document in the inspection reports for sellers and collectors of REE the selection criteria for the inspection cases, for example, initiated from intelligence or following up a complaint, etc.;
- (c) a relevant internal time pledge for preparing inspection reports for inspections conducted on suppliers of REE will be set;
- (d) the relevant information management system of EPD is currently preparing for revamp and the required features for generating management reports related to inspections conducted on suppliers, sellers and collectors of REE will be suitably included to help enhance the supervision of relevant work;

Administration of the Producer Responsibility Scheme on Waste Electrical and Electronic Equipment

- (e) EPD will revise the internal guidelines to require supervisory staff to check every six months to ensure that adequate number of inspections on licensees of e-WDLs are conducted in accordance with the requirements stipulated in the guidelines. EPD will promulgate the updated guidelines to its staff and organise internal trainings to remind them to follow the updated guidelines accordingly; and

- (f) EPD will revise the internal guidelines to set internal time targets to require its staff to enter the inspection results of inspections conducted on licensees of e-WDLs into the Environmental Database Model for Enforcement and Monitoring within 5 working days for record and enforcement purpose. EPD will promulgate the updated guidelines to its staff and organise internal trainings to remind them to follow the updated guidelines accordingly.

PART 3: DESIGN, CONSTRUCTION AND OPERATION OF THE WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT TREATMENT AND RECYCLING FACILITY

3.1 This PART examines EPD's work in monitoring the design, construction and operation of WEEE·PARK, focusing on:

- (a) design and construction of WEEE·PARK (paras. 3.2 to 3.14);
- (b) monitoring of operating costs (paras. 3.15 to 3.25);
- (c) monitoring of operation and maintenance of facilities (paras. 3.26 to 3.35);
and
- (d) monitoring of contractor's performance (paras. 3.36 to 3.49).

Design and construction of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

3.2 WEEE·PARK is a waste-to-resources facility to treat regulated WEEE into valuable secondary raw materials through a series of detoxification, dismantling and recycling processes and provide the associated door-to-door collection service for regulated WEEE disposed of by members of the public across Hong Kong. According to EPD:

- (a) the treatment process involves four processing lines, including:
 - (i) ***Treatment line 1.*** Refrigerators are first processed at treatment line 1 to extract the refrigerants. They are then dismantled to extract the potentially flammable insulation and separate the metal and plastic components;
 - (ii) ***Treatment line 2.*** Air-conditioners are first processed at treatment line 2 to extract the refrigerants. They are then transferred to treatment line 3 for further material separation;

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (iii) **Treatment line 3.** Treatment line 3 is for dismantling and material sorting. During the process, air-conditioners (transferred from treatment line 2), televisions and monitors (transferred from treatment line 4), as well as washing machines, computers, printers, scanners are dismantled, shredded and sorted into secondary raw materials such as steel, copper, aluminium and plastics; and
- (iv) **Treatment line 4.** Televisions and monitors are first processed at treatment line 4 for detoxification of cathode ray tubes and flat screens. The remaining parts of flat screens are transferred to treatment line 3 for further dismantling; and
- (b) WEEE-PARK was designed with a treatment capacity of 30,000 tonnes per year (i.e. design treatment capacity) to treat two types of regulated WEEE, which were further classified into 8 different sub-types. Type 1 covers 4 sub-types (i.e. air-conditioners, refrigerators, televisions and washing machines) (Note 25) and Type 2 covers the other 4 sub-types (i.e. computers, printers, scanners and monitors). As each sub-type of regulated WEEE has different treatment requirements, each sub-type of regulated WEEE has its own sub-type-specific design treatment capacity.

Scope for better estimating the treatment demand in formulating the design of works

3.3 Contract A was a DBO contract and Contractor A was required to design and construct WEEE-PARK in accordance with the contract requirements. According to Contract A, Contractor A should:

- (a) provide throughput capacity from the commencement of operation to handle 30,000 tonnes of regulated WEEE per year and a maximum capacity of 57,600 tonnes of regulated WEEE per year through extended hours of operation, where necessary. The design treatment capacity of

Note 25: According to EPD, tumble dryers and dehumidifiers, introduced under the enhanced WPRS in July 2024, are classified as two new sub-types under Type 1. They are first processed at treatment lines 1 or 2 to extract the refrigerants and then transferred to treatment line 3 for dismantling, shredding and sorting into secondary raw materials.

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

30,000 tonnes per year and the maximum capacity of 57,600 tonnes per year should be allocated to each of the 8 sub-types of regulated WEEE; and

- (b) submit the proposed design to independent consultants (Note 26), Consultant Y and EPD. In June 2016, the design submission proposed by Contractor A was certified by the independent consultants and relevant consent had been given by Consultant Y (on behalf of EPD).

3.4 Audit analysed the treatment capacity and utilisation of WEEE·PARK for the six years of operation (an operation year covers 21 October of a year to 20 October of the next year) since its commissioning in October 2017 and up to October 2023, and found that:

- (a) except for its first year of operation of achieving a utilisation rate of 27% (WPRS was implemented in August 2018), the yearly utilisation rate for the second to sixth year of operation ranged from 71% to 79% (representing a yearly treated quantity of 21,427 to 23,756 tonnes);
- (b) while the actual quantity of regulated WEEE treated was below the overall design treatment capacity, the mix of regulated WEEE treated skewed heavily towards washing machines and refrigerators, which resulted in a significant increase in operating costs of WEEE·PARK (see para. 3.18(a)); and
- (c) in October 2018 (i.e. 7.8 months after the full commissioning of WEEE·PARK in March 2018), Contractor A proposed to modify the existing treatment equipment of treatment line 3 in order to increase its treatment capacity. In January 2019, Consultant Y issued an Employer's Change (EC) (EC A, later valued at a cost of \$3.5 million) under Contract A to instruct Contractor A to carry out the modification works.

Note 26: *According to Contract A, independent consultants were jointly appointed by EPD and Contractor A to perform duties such as ensuring that the design submissions and the methods of construction for the works by Contractor A were in compliance with relevant contract requirements and obtaining all requisite statutory approvals and advices, etc.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

3.5 In December 2018, in vetting EC A, the Development Bureau (Note 27) commented that, for similar projects in the future, EPD should enhance the market survey and consultation with the stakeholders in the early design stage, so as to have a better estimate of the treatment demand and to incorporate the design with sufficient treatment capacity in the original tender, so as to reduce design changes during construction stage. In this connection, Audit noted that:

- (a) when designing the treatment capacity of WEEE·PARK, Contractor A relied on a study commissioned by EPD in 2014, which estimated the quantity of WEEE (including WEEE not covered by WPRS, such as small household electrical appliances) generated in Hong Kong in 2014 and projected the quantity for 2015 to 2019. The study estimated that the total quantity of WEEE generated in Hong Kong in 2014 was about 70,000 tonnes;
- (b) in formulating the maximum capacity (57,600 tonnes per year) and design treatment capacity (30,000 tonnes per year) as the contract requirements of Contract A, EPD assumed that:
 - (i) 85% of total WEEE generated in 2014 were regulated WEEE to be covered by WPRS, that was 59,500 ($70,000 \times 85\%$) tonnes; and
 - (ii) about half of that (and for every sub-type of regulated WEEE) would be handled by WEEE·PARK, that was 29,750 ($59,500 \times 50\%$) tonnes (Note 28);
- (c) Contractor A used the study's estimation on the mix of sub-types of regulated WEEE generated in 2014 to formulate the mix of treatment capacity by sub-types of regulated WEEE for WEEE·PARK;

Note 27: *According to EPD, EC A was submitted to the Project Strategy and Governance Office (formerly known as the Project Cost Management Office) of the Development Bureau for review as the estimated value of variation of works under EC A had exceeded \$1.4 million.*

Note 28: *According to EPD, it was its policy intention not to crowd out the existing and prospective recyclers in the recycling business market.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (d) the estimation of the study was based on the results of surveys conducted with households, establishments from public and private sectors, and individuals via telephone or face-to-face interviews. While the study served as a reference material for the implementation of WPRS in Hong Kong, it stated that:
 - (i) one of its limitations was the limited number of interviewees involved; and
 - (ii) a survey could be conducted to collect data regarding the trading of electrical and electronic equipment in the second-hand market, which could be useful to estimate the quantity of electrical and electronic equipment and material being reused and disposed of; and
- (e) according to EPD, it conducted a number of consultations, business impact assessment, feasibility studies and surveys with the public, trade members, retailers, recyclers and relevant stakeholders in early 2010s. Consultations with relevant trade (e.g. REE sellers and recyclers) were carried out focusing on various WPRS issues, including sellers' obligations (e.g. recycling label and mandatory take-back), licensing requirements, import and export permit control, and establishment of WEEE·PARK. However, there was no specific consultation to assess the demand in using WEEE·PARK and to derive a more accurate estimate on the total quantity and the mix of regulated WEEE to be processed by WEEE·PARK. As it transpired:
 - (i) as of August 2024, other than Contractor A, there were no recyclers licensed to recycle certain sub-types of regulated WEEE, including air-conditioners, refrigerators, and televisions and monitors with cathode ray tubes (Note 29); and

Note 29: *According to EPD: (a) other than Contractor A, there was a recycler licensed to recycle televisions and monitors with cathode ray tubes from March 2019 to February 2020 and another recycler licensed to recycle air-conditioners from July 2019 to October 2020; and (b) as of August 2024, other than Contractor A, there were no recyclers licensed to recycle tumble dryers and dehumidifiers (the two new sub-types of regulated WEEE introduced after the implementation of the enhanced WPRS in July 2024).*

- (ii) the demand of computer products in the second-hand market and the commercial market for second-hand computer products in Hong Kong were competitive (see para. 3.45(b)(i)).

3.6 In Audit's view, in implementing works projects involving waste treatment facilities under a DBO contract, EPD needs to take measures to conduct market surveys and consultations with stakeholders as comprehensively as practicable with a view to better estimating the treatment demand and incorporating the requirements on treatment capacity in the tender documents.

Construction works completed later than the scheduled completion date

3.7 Under Contract A, the construction of WEEE·PARK had two milestones:

- (a) ***Completion of a substantial part of works.*** Upon completion of a substantial part of works, it would enable the contractor to operate the facility in accordance with the contract; and
- (b) ***Substantial completion of works.*** It refers to works that have been constructed in full accordance with the registered design and methods of construction consented by EPD.

Both milestones must be certified by Consultant Y. As one of the criteria for substantial completion of works, Contractor A should apply and maintain the licences, permits and certificates issued under relevant ordinances and regulations necessary for the operation of WEEE·PARK. If Contractor A fails to timely complete the two milestones, EPD will be entitled to recover liquidated damages from Contractor A, unless an extension of time for the completion of the works is granted by EPD or Consultant Y (e.g. due to inclement weather).

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

3.8 The design and construction works of WEEE-PARK commenced in April 2015 and the revised completion date of the construction works was 19 July 2017 (Note 30). Audit noted that:

- (a) there were delays in achieving both milestones, as follows:
 - (i) Consultant Y certified Contractor A's completion of a substantial part of works on 20 October 2017, representing a delay of 93 days (i.e. from 20 July 2017 to 20 October 2017); and
 - (ii) Consultant Y certified Contractor A's substantial completion of works on 7 March 2018, representing a further delay of 138 days (i.e. from 21 October 2017 to 7 March 2018).

The total delay of 231 days was subject to liquidated damages of \$7.1 million, which was imposed on Contractor A; and

- (b) the delays in achieving the two milestones were due to the following reasons:
 - (i) completion of a substantial part of works was delayed to 20 October 2017 due to the delays in obtaining the approvals for a utility service (i.e. fresh water supply for fire services) and a statutory licence (i.e. the licence for the disposal of chemical waste) from relevant authorities, which were obtained after the revised completion date of works on 19 July 2017. In the event, treatment lines 3 and 4 commenced operations on 21 October 2017; and
 - (ii) substantial completion of works was further delayed to 7 March 2018 due to the delays in obtaining the approvals for a utility service (i.e. potable water supply) and statutory licences (i.e. two licences for the manufacture of dangerous goods and eight licences for the storage of dangerous goods) from relevant authorities. In the event, although treatment lines 1 and 2 were

Note 30: *According to EPD and Consultant Y, due to prolonged duration for obtaining the approval for the fire service design drawings and inclement weather, an extension of time of 65 days was granted to Contractor A.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

ready for operation on 21 October 2017, their operations did not commence until the two required licences for the manufacture of dangerous goods were obtained on 7 March 2018.

3.9 In Audit's view, in implementing works projects involving construction of facilities, EPD needs to take measures to ensure the timely commissioning of operation, particularly those works projects involving approvals of utility services and statutory licences by relevant authorities.

Need to ensure timely completion of outstanding works

3.10 According to Contract A, Contractor A should carry out any outstanding works as soon as practicable after the issue of certificate of substantial completion for the works. When all the outstanding works have been completed to the satisfaction of EPD and certified by the independent consultants, Consultant Y will issue the certificate of completion for the works.

3.11 According to Consultant Y in April 2018, Contractor A was required to complete a list of outstanding works involving 114 items within 56 days after the date of substantial completion of works on 7 March 2018 (i.e. the specified timeframe). The certificate of completion for the works would not be issued until the outstanding works were satisfactorily completed.

3.12 Audit noted that Contractor A completed all the 114 items of outstanding works in November 2020 (i.e. 925 days after the specified timeframe). Of these 114 items, 113 (99%) were not completed within the specified timeframe, as follows:

- (a) 60 (53%) items were completed within 1 year after the specified timeframe;
- (b) 30 (26%) items were completed between 1 to 2 years after the specified timeframe; and
- (c) 23 (20%) items were completed more than 2 years after the specified timeframe with the last item completed on 12 November 2020 (i.e. 925 days after the specified timeframe).

In the event, the independent consultants checked and certified that all outstanding works had been completed by Contractor A in December 2020 and Consultant Y certified Contractor A's completion for the works in March 2021. In Audit's view, in implementing works projects, EPD needs to take measures to ensure the timely completion of outstanding works by contractors.

Audit recommendations

3.13 Audit has *recommended* that the Director of Environmental Protection should:

- (a) in implementing works projects involving waste treatment facilities under a DBO contract, take measures to conduct market surveys and consultations with stakeholders as comprehensively as practicable with a view to better estimating the treatment demand and incorporating the requirements on treatment capacity in the tender documents;**
- (b) in implementing works projects involving construction of facilities, take measures to ensure the timely commissioning of operation, particularly those works projects involving approvals of utility services and statutory licences by relevant authorities; and**
- (c) in implementing works projects, take measures to ensure the timely completion of outstanding works by contractors.**

Response from the Government

3.14 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) the latest and best available data had been deployed in the study for designing the treatment capacity of WEEE-PARK at that time. EPD has been acquiring comprehensive market data on the treatment and recycling of regulated WEEE after the implementation of WPRS for six years. When considering adding new types of regulated WEEE, EPD will conduct more comprehensive market surveys for incorporating into the new contract with a view to better assessing the treatment demand;**

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (b) in implementing works projects involving construction of facilities, EPD will ensure that sufficient time should be taken into account for the approvals of utility services and statutory licences for its future liaison with contractors, with a view to ensuring the timely commissioning of operation; and
- (c) the outstanding works under Contract A were mainly minor works, rectifications and documentations after the substantial completion of works. It did not affect WEEE-PARK's operation nor did it incur any additional cost on any parties. EPD will take measures to ensure the timely completion of outstanding works by contractors in future contracts.

Monitoring of operating costs

3.15 According to Contract A, monthly operation fee is paid to Contractor A based on the actual quantity of regulated WEEE treated during the month. The amount of operation fee should be ascertained and determined in accordance with the unit rate (specified for individual sub-types of regulated WEEE) stipulated in Contract A. The operation fee covers all the costs and expenditure incurred by Contractor A for logistics and operation including handling, transportation, storage and treatment of regulated WEEE. Up to March 2024, the total amount of operation fee to Contractor A was \$1,256 million. Audit noted that from March 2019 to October 2021, Consultant Y issued 4 ECs (covering the second, third, fourth and fifth to tenth year of operation respectively) under Contract A to instruct Contractor A to provide the following three types of services:

- (a) treating extra washing machines and refrigerators that were beyond the design treatment capacity of WEEE-PARK (see paras. 3.16 to 3.19). From October 2018 to March 2024, the expenditure incurred in providing the service amounted to \$165.3 million;
- (b) providing enhanced collection and logistics services for all regulated WEEE (see paras. 3.20 to 3.23). From October 2018 to March 2024, the expenditure incurred in providing the services amounted to \$253.7 million; and
- (c) transferring a portion of washing machines to the service providers for treatment (see para. 3.17(b)). From November 2019 to March 2024, the

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

expenditure incurred in providing the service amounted to \$23.1 million (Note 31).

Additional operating costs for treating washing machines and refrigerators

3.16 Audit analysed the quantity of regulated WEEE treated and the shortfall or surplus of treatment capacity by sub-types of regulated WEEE from October 2017 to March 2024 and noted that (see Table 3):

- (a) 6 sub-types of regulated WEEE (i.e. printer, air-conditioner, computer, monitor, television and scanner) had spare yearly average treatment capacity (ranging from 44% to 90%). Except for printer, the remaining 5 sub-types of regulated WEEE had spare yearly average capacity of 50% or more (i.e. a utilisation of 50% or less); and
- (b) there was a shortfall in yearly average treatment capacity of 32% and 80% for refrigerators and washing machines respectively. The actual yearly average treated quantity was 4,586 tonnes (against the design treatment capacity of 3,480 tonnes) for refrigerators and 9,600 tonnes (against the design treatment capacity of 5,340 tonnes) for washing machines.

Note 31: *As of March 2024, the total expenditure incurred under the 4 ECs were \$451.3 million. The difference (\$451.3 million – \$165.3 million – \$253.7 million – \$23.1 million) represented a price fluctuation adjustment of \$9.2 million.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

Table 3

Treatment capacity and utilisation of WEEE·PARK (October 2017 to March 2024)

Sub-type of regulated WEEE	Design treatment capacity (a) (tonnes)	Actual yearly average treated quantity (b) (tonnes)	(Shortfall)/Surplus in treatment capacity		Utilisation (e) = (b) ÷ (a) × 100% (%)
			(c) = (a) – (b) (tonnes)	(d) = (c) ÷ (a) × 100% (%)	
Washing machine	5,340	9,600	(4,260)	(80 %)	180 %
Refrigerator	3,480	4,586	(1,106)	(32 %)	132 %
Printer	744	414	330	44 %	56 %
Air-conditioner	6,468	3,213	3,255	50 %	50 %
Computer	3,324	995	2,329	70 %	30 %
Monitor	1,848	383	1,465	79 %	21 %
Television	8,712	1,748	6,964	80 %	20 %
Scanner	84	8	76	90 %	10 %

Source: EPD records

3.17 The treatment of regulated WEEE is sub-type-specific and spare capacity for treating certain sub-types of regulated WEEE cannot be used to meet the capacity shortfall of other sub-types. According to EPD in February 2019, it was envisaged that WEEE·PARK had to maintain a throughput capacity for washing machines and refrigerators that exceeded their respective sub-type-specific design treatment capacities on an on-going basis. To cope with the shortfall in treatment capacity of washing machines and refrigerators, EPD implemented the following measures:

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (a) ***Increase the processing capacity of washing machines and refrigerators of WEEE·PARK.*** According to EPD:
- (i) Contractor A was instructed to increase the processing capacity of washing machines and refrigerators of WEEE·PARK. In addition to the basic operation fee, top-up operation fee (covering additional staff and associated costs, additional consumables and technical supports for maintenance) would be paid on a monthly basis to Contractor A for treating washing machines and refrigerators beyond their respective sub-type-specific design treatment capacities (Note 32); and
 - (ii) to calculate the top-up operation fee, a set of tiered rates would be applied to the quantities (in tonnes) of washing machines and refrigerators treated (i.e. different rates would be applied to different quantities and a lower rate would be applied when the quantity exceeded certain thresholds). From October 2018 to March 2024, a top-up operation fee of \$165.3 million (i.e. \$128.8 million for washing machines + \$36.5 million for refrigerators) was incurred, representing 13% of the total operation fee of \$1,256 million to Contractor A; and
- (b) ***Contract out the treatment of washing machines to other licensed recyclers.*** According to EPD:
- (i) since November 2019, EPD hired the services of licensed recyclers other than Contractor A to treat a portion of washing machines that were beyond the design treatment capacity of WEEE·PARK and collected by Contractor A under the non-statutory free collection service (see para. 3.21(a)(ii));
 - (ii) under the arrangement, Contractor A would deliver the washing machines to the service providers for treatment. Based on the quantity of washing machines transferred and treated during the

Note 32: *According to the Legal Advisory Division (Works) of the Development Bureau, as Contractor A was expected to operate under the enhanced treatment capacity on a continuous basis (provided that it was technically feasible to do so), Contractor A could seek reimbursement for those beyond the existing requirements of Contract A.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

month, handling fee (including logistics fee for collecting the waste washing machines from the public and transferring to the service providers and its associated costs) was paid to Contractor A and service fee for treatment was paid to the service providers respectively; and

- (iii) 3 service contracts had been awarded to 2 service providers covering the period from November 2019 to March 2025. From November 2019 to March 2024, a handling fee of \$23.1 million (see para. 3.15(c)) and a service fee for treatment of \$5 million were incurred.

3.18 Audit noted that:

- (a) from October 2018 to March 2024, 85,660 tonnes of washing machines and refrigerators were treated by Contractor A. In addition to the basic operation fee of \$197.1 million, a top-up operation fee of \$165.3 million (see para. 3.15(a)) was incurred, representing 84% of the amount of basic operation fee;
- (b) from November 2019 (when treatment of a portion of washing machines was first contracted out to other licensed recyclers) to March 2024, a total cost of \$28.1 million was incurred for outsourcing the treatment of 6,940 tonnes of washing machines to the service providers. During the same period, 47,154 tonnes of washing machines were treated by Contractor A, incurring a total operation fee of \$164.8 million (including top-up operation fee of \$100.8 million); and
- (c) the top-up operation rates and handling rates were agreed between EPD and Contractor A and stipulated in the ECs prevailing at the time. According to EPD, regarding the 4 ECs issued during the period from March 2019 to October 2021 (see para. 3.15), efforts had been made by EPD to lower the rates. For example, the first tier of the top-up operation rates for washing machines and refrigerators were lowered by 28% (\$1,700 per tonne) from \$6,100 per tonne in the first EC to \$4,400 per tonne in the third and fourth (latest) ECs as a result of streamlining.

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

3.19 With a view to reducing the operating costs for treating washing machines and refrigerators, in Audit's view, EPD needs to:

- (a) continue to make efforts to reduce the top-up operation fee and handling fee for treating washing machines and refrigerators exceeding their respective sub-type-specific design treatment capacities of WEEE·PARK and transferring washing machines to service providers for treatment respectively;
- (b) keep under review the cost-effectiveness of treating washing machines and refrigerators collected by WEEE·PARK; and
- (c) explore the feasibility to redesign WEEE·PARK with a view to aligning its treatment capacity with the mix of sub-types of regulated WEEE.

Additional operating costs for providing collection and logistics services

3.20 According to Contract A, Contractor A should:

- (a) provide take-back service of regulated WEEE at the request of sellers of REE (i.e. statutory free removal service). The sellers of REE should give at least 3 working days' notice to Contractor A to request for collection of an equivalent regulated WEEE from the premises of a buyer who has purchased a new REE product from the sellers of REE; and
- (b) provide collection services for regulated WEEE delivered to the Recycling Stations (formerly known as Community Green Stations) under "GREEN@COMMUNITY" and from other government recycling initiatives and programmes. The operators of Recycling Stations should initiate requests to Contractor A for collection of regulated WEEE by giving a 3 working days' notice.

3.21 ***Top-up logistics fee to Contractor A.*** According to EPD in December 2018, in view of strong requests from the public and Members of LegCo and the District Council, Contractor A was encouraged to proactively collect regulated WEEE from sources other than the statutory free removal service, as long as the

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

regulated WEEE was generated locally. From March 2019 to October 2021, Consultant Y issued the 4 ECs under Contract A (see para. 3.15) to instruct Contractor A, among others, to account for the following enhanced and extended collection and logistics services:

- (a) in addition to the services provided mentioned in paragraph 3.20, since October 2018, Contractor A would provide the following enhanced and extended collection and logistics services for all regulated WEEE:
 - (i) upgrade the statutory free removal service by requiring Contractor A to collect regulated WEEE from customers within 3 working days after the receipt of service requests;
 - (ii) provide a non-statutory free collection service through the recycling hotline to the public not purchasing a new REE product within 7 working days after the receipt of service requests;
 - (iii) provide collection service supporting the refuse collection points of the Food and Environmental Hygiene Department; and
 - (iv) provide free service available to premises with or without elevators, from orders under both statutory free removal service and non-statutory free collection service; and
- (b) Contractor A would also provide collection and logistics services for the quantity of regulated WEEE that exceeded the baseline tonnage (i.e. the actual quantity of regulated WEEE collected by Contractor A in July 2018 before WPRS was implemented) during the month.

From October 2018 to March 2024, in addition to the basic operation fee, a top-up logistics fee of \$253.7 million (see para. 3.15(b)) was incurred, representing 20% of the total operation fee of \$1,256 million to Contractor A.

3.22 In justifying paying the top-up logistics fee to Contractor A, EPD considered that, as of December 2018, there were 3,296 sellers of REE and almost all of these sellers had appointed Contractor A as their default collector, which far exceeded the number anticipated by EPD (i.e. 600 sellers of REE). However, Audit noted that:

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (a) while there was a financial incentive for the sellers of REE to appoint Contractor A as their default collector because the statutory free removal service provided by Contractor A did not incur any costs for the sellers of REE, EPD only estimated that 600 sellers of REE would appoint Contractor A as their default collector;
- (b) when formulating the anticipated number of sellers of REE who would appoint Contractor A as their default collector (i.e. 600), the latest estimation on the number of sellers of REE available to EPD was 795 sellers in 2011. EPD did not conduct a survey to obtain a more up-to-date estimation and it also did not document the basis of its anticipation; and
- (c) as far as could be ascertained, no consultation with stakeholders (e.g. REE sellers) was carried out by EPD to seek their views of appointing Contractor A as the collector and to derive a more accurate estimate on the total quantity of regulated WEEE to be collected by Contractor A.

3.23 In Audit's view, EPD needs to:

- (a) continue to make efforts to reduce the top-up logistics fee for collecting regulated WEEE that exceeded the baseline tonnage;
- (b) conduct a cost-benefit analysis to determine whether alternative logistics service providers should be engaged in providing collection and logistics services for regulated WEEE that exceeded the baseline tonnage; and
- (c) when designing the terms of the upcoming contract for the operation of WEEE-PARK, take measures to conduct market surveys and consultations with stakeholders as comprehensively as practicable and consult the relevant stakeholders early, with a view to clearly setting out the scope of essential collection and logistics services with detailed performance requirements in the Employer's specifications.

Audit recommendations

3.24 **Audit has *recommended* that the Director of Environmental Protection should:**

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (a) continue to make efforts to reduce the top-up operation fee and handling fee for treating washing machines and refrigerators exceeding their respective sub-type-specific design treatment capacities of WEEE·PARK and transferring washing machines to service providers for treatment respectively;
- (b) keep under review the cost-effectiveness of treating washing machines and refrigerators collected by WEEE·PARK;
- (c) explore the feasibility to redesign WEEE·PARK with a view to aligning its treatment capacity with the mix of sub-types of regulated WEEE;
- (d) continue to make efforts to reduce the top-up logistics fee for collecting regulated WEEE that exceeded the baseline tonnage;
- (e) conduct a cost-benefit analysis to determine whether alternative logistics service providers should be engaged in providing collection and logistics services for regulated WEEE that exceeded the baseline tonnage; and
- (f) when designing the terms of the upcoming contract for the operation of WEEE·PARK, take measures to conduct market surveys and consultations with stakeholders as comprehensively as practicable and consult the relevant stakeholders early, with a view to clearly setting out the scope of essential collection and logistics services with detailed performance requirements in the Employer's specifications.

Response from the Government

3.25 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) EPD has been making relentless efforts in reducing the top-up operation fee and handling fee. It will review the cost-effectiveness, service structure and operation for the collection and treatment at WEEE·PARK. It will try to encourage more service providers to treat regulated WEEE (such as air-conditioners and refrigerators) and to explore new service conditions in

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

the follow-up service contract to redress the imbalance in the mix of regulated WEEE treated at WEEE·PARK;

- (b) EPD will continue to keep in view the market situation for the cost-effectiveness of handling washing machines and refrigerators collected under WPRS;
- (c) EPD has acquired comprehensive market data with regard to the generation of different sub-types of regulated WEEE after the implementation of WPRS for six years and shall incorporate the relevant data into the next contract. It will also explore the feasibility of redesigning WEEE·PARK in the next follow-on contract involving capital works;
- (d) EPD has been making relentless efforts in reducing the top-up logistics fee since the issue of the first relevant EC and the fee was lowered in the fourth (latest) EC. It will conduct cost comparison with the market prices for the rates/fees quoted by the bidders of the forthcoming follow-on contract in terms of the cost-effectiveness of WEEE·PARK's operation; and
- (e) EPD will conduct scenario and cost-benefit analysis as necessary before the next follow-on contract, and clearly set out the scope of essential collection and logistics services with detailed performance requirements in the Employer's specifications.

Monitoring of operation and maintenance of facilities

3.26 According to Contract A, Contractor A should achieve an annual recycling rate (Note 33) of not less than 80% for regulated WEEE. Since the commissioning of WEEE·PARK in October 2017 and up to October 2023, Contractor A achieved an annual recycling rate of not less than 80% (i.e. ranging from 83% to 89%) for all the six years of operation.

Note 33: *According to Contract A, recycling rate is calculated as the sum of weights of secondary raw materials dispatched to re-processors and repaired products dispatched to non-governmental organisations (see para. 3.44) during an operation year, and divided by the total weight of all regulated WEEE accepted at WEEE·PARK and weighted for payment of operation fee during the same operation year.*

Scope for enhancing the collection and logistics services

3.27 To assess the quality of collection and logistics services provided by Contractor A, customer satisfaction surveys were conducted by Contractor A in June 2021 and July 2023, and the overall customer satisfaction score on collection service and the performance score on service experience provided by Contractor A was 87.3 and 82.5 out of 100 respectively. Nevertheless, Audit noted that there were some instances of unsatisfactory performance in the collection and logistics services provided by Contractor A, as follows:

- (a) ***Failure to meet the requirements related to collection service.*** From October 2018 to March 2024, of the 1.2 million collection service orders, there were 29 orders where Contractor A failed to meet the collection service requirements to collect the regulated WEEE within the specified time limits (i.e. within 3 or 7 working days after the receipt of service requests for statutory free removal service and non-statutory free collection service for public not purchasing a new REE product respectively);
- (b) ***Collected regulated WEEE subsequently not found.*** In June 2022, during an inspection conducted by EPD, an air-conditioner was found missing after collected from a customer by a collector (a sub-contractor of Contractor A). It was suspected by EPD that the air-conditioner collected was not delivered to the regional collection centres nor WEEE·PARK (Note 34); and
- (c) ***Secondary raw materials dispatched to an unapproved re-processor.*** In August 2022, EPD found that 15 trucks of secondary raw materials (constituting 30 tonnes of ferrous metals) were dispatched to a re-processor not approved by EPD (Note 35).

Note 34: *According to EPD: (a) in the performance report of Contractor A for the period from June to August 2022, the management of sub-contractors by contractor's superintendence aspect was rated as "poor"; and (b) proper follow-up actions had been taken for the incident (e.g. reporting the case to the Hong Kong Police Force and terminating the services of the sub-contractor concerned) to avoid reoccurrence.*

Note 35: *According to EPD, in the performance report of Contractor A for the period from June to August 2022, the control of supervisory staff by contractor's superintendence aspect was rated as "poor".*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

In Audit's view, EPD needs to take measures to further enhance the collection and logistics services provided by Contractor A.

Some facilities and equipment required frequent maintenance and long repairing time

3.28 While Contractor A maintained detailed records of maintenance work and reported the maintenance records in the monthly and yearly operational reports to the Employer's Representative (i.e. Consultant Y and subsequently EPD) in accordance with Contract A, Audit noted that it did not regularly compile detailed records of maintenance work and follow-up actions in relation to instances of failure in facilities and equipment that required frequent maintenance and long repairing time, and report such information in the monthly and yearly operational reports.

3.29 Audit noted that, since the commissioning of WEEE-PARK in October 2017 and up to March 2024, there were instances of failure in facilities and equipment that required frequent maintenance and long repairing time, as follows:

- (a) ***Treatment lines.*** From February 2018 to October 2023, there were 9 and 2 instances of failure in treatment lines 1 and 3 respectively for at least 3 days, resulting in a total downtime of 56 days (ranging from 3 to 14 days for each instance);
- (b) ***Closed circuit television (CCTV) cameras.*** There were 2 instances of malfunctioning of CCTV cameras for 3 and 9 days in March 2021 and April 2023 respectively. In particular, in April 2023, due to malfunctioning of the power supply unit of the switch connecting to CCTV cameras and unavailability of the replacement parts by suppliers, 12 CCTV cameras had experienced a loss of video signal and video footage for 9 days; and
- (c) ***Platform scales.*** Of the 3 platform scales for weighing regulated WEEE collected, malfunctioning of a platform scale with a total downtime of 23 days was noted in 3 instances from May 2022 to August 2023 (Note 36).

Note 36: *According to EPD, there were 3 platform scales in WEEE-PARK and in most cases, only 1 platform scale was used for weighing regulated WEEE collected while the other 2 were served as back-up. As a result, the breakdown of a platform scale would not affect the normal operation of WEEE-PARK.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

3.30 In Audit's view, EPD needs to:

- (a) keep under review the conditions of facilities and equipment at WEEE·PARK, particularly those facilities and equipment with frequent maintenance and long repairing time that affected the normal operation of WEEE·PARK, with a view to ensuring the smooth operation of the WEEE treatment process; and
- (b) take measures to ensure that detailed records of maintenance work and follow-up actions in relation to instances of failure in facilities and equipment that required frequent maintenance and long repairing time are regularly compiled and reported in the monthly and yearly operational reports by Contractor A.

Scope for enhancing site and occupational safety

3.31 Contractor A should keep the site, works and facility in an orderly state appropriate to the avoidance of danger to all persons. It should notify EPD all accidents within 24 hours, provide EPD with the relevant investigation reports within reasonable timeframe and report the accidents involving work injury to the Labour Department within 14 days after the date of the accidents.

3.32 Since the commissioning of WEEE·PARK in October 2017 and up to March 2024, the site accident record aspect was rated as "poor" in 14 (78%) of the 18 Contractor A's performance reports covering 43 non-fatal work injury accidents (involving sick leave ranging from 3 to 67 days) (Note 37). Audit noted that:

- (a) notwithstanding that Contractor A implemented employee development programs to improve occupational safety and health since November 2020, there was no significant improvement to the site and occupational safety of WEEE·PARK, as follows:

Note 37: *According to EPD, apart from these 43 accidents, there were 9 minor incidents (not involving any sick leave) related to site safety happened during the design and construction stage of WEEE·PARK.*

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (i) of the 43 accidents, 25 (58%) happened after the programs were implemented; and
- (ii) of the 12 performance reports covering the period since November 2020, the site accident record aspect of 10 (83%) reports was rated as “poor”; and
- (b) EPD did not maintain records indicating the dates of reporting of accidents to relevant departments by Contractor A. According to EPD, all accidents were reported by Contractor A in a timely manner.

3.33 According to EPD, since August 2024, it has maintained a consolidated record with the dates of reporting of accidents to relevant departments by Contractor A. In Audit’s view, EPD needs to:

- (a) make continued efforts to enhance site and occupational safety of WEEE·PARK with a view to safeguarding safety of all operations and all persons on sites; and
- (b) remind its staff to maintain the records indicating the dates of reporting of accidents to relevant departments by Contractor A with a view to ensuring that accidents are reported by Contractor A in a timely manner.

Audit recommendations

3.34 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **take measures to further enhance the collection and logistics services provided by Contractor A;**
- (b) **keep under review the conditions of facilities and equipment at WEEE·PARK, particularly those facilities and equipment with frequent maintenance and long repairing time that affected the normal operation of WEEE·PARK, with a view to ensuring the smooth operation of the WEEE treatment process;**

- (c) **take measures to ensure that detailed records of maintenance work and follow-up actions in relation to instances of failure in facilities and equipment that required frequent maintenance and long repairing time are regularly compiled and reported in the monthly and yearly operational reports by Contractor A;**
- (d) **make continued efforts to enhance site and occupational safety of WEEE·PARK with a view to safeguarding safety of all operations and all persons on sites; and**
- (e) **remind EPD staff to maintain the records indicating the dates of reporting of accidents to relevant departments by Contractor A with a view to ensuring that accidents are reported by Contractor A in a timely manner.**

Response from the Government

3.35 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) EPD will continue to further enhance the collection and logistics services provided by Contractor A by enhancing the checking of the collection services such as increasing the number of random calls to the public and increasing the frequency of checking of the computer system for collection services;
- (b) EPD has monitored and will continue to monitor the operation of WEEE·PARK through daily inspections and discussions with Contractor A on the arrangement for major maintenance that might affect the normal operation in the monthly progress meetings, with a view to ensuring the smooth operation of the WEEE treatment process;
- (c) Contractor A is required to promptly report any maintenance work potentially affecting the normal operation of WEEE·PARK to EPD and record such work in its monthly reports, and EPD will follow up with Contractor A to ensure that the maintenance work will be completed as soon as practicable to minimise the impact to the normal operation of WEEE·PARK. EPD will continue to enhance the monitoring of

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

maintenance and repair work which may lead to serious disruption to any facility operation and impact on the handling capacity of WEEE·PARK, and request Contractor A to include detailed records of such work in the monthly and yearly operational reports;

- (d) EPD has been making relentless efforts in reminding Contractor A to enhance site and occupational safety and will certainly continue to do so; and
- (e) EPD will timely and properly update and maintain the consolidated records with the dates of reporting of accidents to relevant departments by Contractor A.

Monitoring of contractor's performance

3.36 According to Contract A, Contractor A is required to operate the facility to fulfil specified performance requirements. There are 10 compliance requirements for measuring the performance of Contractor A in operating WEEE·PARK, as follows:

- (a) 6 compliance requirements on operational performance including:
 - (i) operation of permitted waste;
 - (ii) salvage of reusable products;
 - (iii) recycling rate;
 - (iv) vehicle turnaround time;
 - (v) site cleanliness; and
 - (vi) ventilation, pollution control, dust collection and separation; and
- (b) 4 compliance requirements on environmental performance including:
 - (i) air quality;

- (ii) water quality;
- (iii) noise; and
- (iv) certification for the International Organization for Standardization 14001 requirements.

3.37 According to EPD, its staff conducted daily operation inspections at WEEE·PARK to ensure that the operation complied with Contract A's requirements. Non-compliance points would be allocated to each non-compliance with the operational or environmental performance requirements. The monthly operation fee would be deducted based on the total non-compliance points allocated in that month. Since the commissioning of WEEE·PARK in October 2017 and up to March 2024, there was no deduction of Contractor A's monthly operation fee as a result of non-compliance with the operational and environmental performance requirements.

***Scope for improving the monitoring of
environmental performance requirements***

3.38 Under Contract A, in the event of non-compliance with any of the environmental performance requirements being detected:

- (a) Contractor A should report the exceedance of compliance limit immediately, together with the progress of findings and remedial actions taken, to the Employer's Representative (i.e. Consultant Y and subsequently EPD); and
- (b) the frequency of monitoring for that requirement would change from level 1 (i.e. less stringent) to level 2 (i.e. more stringent). The monitoring level would return to level 1 only when no further non-compliance is detected in the follow-up samples collected.

3.39 According to EPD, since the commissioning of WEEE·PARK in October 2017 and up to March 2024, there were 4 incidents (on 6 March 2018, 19 April 2021, 22 June 2021 and 30 June 2022) in which 6 samples on air quality and 2 samples on water quality were found exceeding the compliance limits. In response, a level 2 monitoring was triggered and the exceedance of compliance limits of the

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

8 samples was reported to the Employer's Representative by Contractor A. In the event, as the test results of all follow-up samples subsequently collected for each of the above incident complied with the performance requirements, the frequency of monitoring was reverted back to level 1 and no deduction of Contractor A's monthly operation fee was thus required. However, Audit noted that:

- (a) the Employer's Representative was notified by Contractor A 20 days after the exceedance of compliance limits was found for 2 (25%) of the 8 samples; and
- (b) upon detection of exceedance of compliance limits for the 8 samples, while it took 2 days to trigger a level 2 monitoring for 4 samples, it took 6 to 22 days (averaging 12 days) to do so for the remaining 4 samples.

3.40 According to EPD, in September 2024, it informed Contractor A that a level 2 monitoring should be triggered on the date of the test report which indicated the non-compliance test result. In Audit's view, EPD needs to take measures to ensure that Contractor A:

- (a) timely reports all non-compliance test results on environmental performance requirements to EPD in accordance with the stipulated timeframe; and
- (b) timely triggers a level 2 (i.e. more stringent) monitoring for environmental performance requirements in accordance with the required timeframe specified by EPD in September 2024.

Scope for reviewing the comprehensiveness of operational performance requirements

3.41 According to EPD, since the commissioning of WEEE·PARK in October 2017 and up to March 2024, no non-compliance with the 6 operational performance requirements was identified.

3.42 Audit noted that the operational performance requirements stipulated in Contract A did not cover certain aspects that warrant monitoring by EPD, including the provision of collection and logistics services, site and occupational safety, and

failure in facilities and equipment. In particular, for the first 2 aspects, a “poor” rating had been given to the relevant areas of Contractor A’s performance reports (see paras. 3.27(b) and (c) and 3.32).

3.43 Contract A will expire in October 2027. With a view to enhancing the performance monitoring on the operation of WEEE·PARK, Audit considers that EPD needs to consider reviewing the comprehensiveness of the operational performance requirements when designing the terms of the upcoming contract and incorporating more operational performance requirements where appropriate.

Scope for enhancing the salvage, refurbishment and donation of regulated WEEE collected

3.44 Under Contract A, Contractor A should salvage and refurbish selected items for each of the 4 sub-types of Type 1 regulated WEEE (i.e. air-conditioner, refrigerator, television and washing machine) collected into repaired products, and donate these repaired products to non-governmental organisations (through the network of registered social workers in Hong Kong) for beneficial distribution to under-privileged households. It is one of the Contractor A’s operational performance requirements to meet the overall target number of Type 1 regulated WEEE repaired for donation during each operation year.

3.45 Audit examined the number of products repaired for donation for the 6 operation years from October 2017 to October 2023 and found that:

- (a) ***Number of products repaired for certain sub-types was below respective target.*** While the overall target number of Type 1 regulated WEEE repaired was met in every operation year (hence no non-compliance with the operational performance requirement related to salvage of reusable products), the number of products repaired for certain sub-types of Type 1 regulated WEEE was well below the target number for several years. In particular, there was a shortfall of the actual number of air-conditioners and refrigerators repaired against their respective targets for 4 operation years, ranging from 9 to 167 items (i.e. 7% to 91%) and 102 to 258 items (i.e. 16% to 40%) respectively (see Table 4); and

**Design, construction and operation of the Waste Electrical
and Electronic Equipment Treatment and Recycling Facility**

Table 4

**Target and actual number of repaired products
(October 2017 to October 2023)**

Sub-type of regulated WEEE	Operation year					
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<i>Air-conditioners</i>						
Target	184	295	150	135	135	145
Actual	17	183	86	126	185	250
(Shortfall)/Surplus	(167) (91%)	(112) (38%)	(64) (43%)	(9) (7%)	50 37%	105 72%
<i>Refrigerators</i>						
Target	184	295	650	650	650	650
Actual	486	694	548	415	460	392
(Shortfall)/Surplus	302 164%	399 135%	(102) (16%)	(235) (36%)	(190) (29%)	(258) (40%)
<i>All Type 1 regulated WEEE</i>						
Target	958	1,180	1,200	1,220	1,260	1,315
Actual	1,000	1,180	1,351	1,257	1,321	1,501
Surplus	42 4%	0 0%	151 13%	37 3%	61 5%	186 14%

Source: EPD records

- (b) ***Need to endeavour to donate repaired Type 2 regulated WEEE.*** Only Type 1 regulated WEEE was included for assessing the achievement of the operational performance requirement related to salvage of reusable products. According to EPD:
- (i) owing to higher value of Type 2 regulated WEEE (i.e. computer, printer, scanner and monitor) in the second-hand market and the fact that the commercial market for second-hand computer products in Hong Kong was competitive, the amount of Type 2 regulated WEEE collected by WEEE·PARK would be uncertain; and

- (ii) it was considered that Type 2 regulated WEEE should not be included in the target number of products repaired under Contract A.

Audit noted that while Type 2 regulated WEEE was not included in the target number, in June 2024, EPD approved a one-off donation of 252 items of refurbished monitors (i.e. Type 2 regulated WEEE) to a non-governmental organisation.

3.46 In Audit's view, EPD needs to:

- (a) take measures to encourage Contractor A to meet the target number of repaired products for individual sub-types of regulated WEEE as far as practicable; and
- (b) continue to donate repaired Type 2 regulated WEEE by Contractor A with a view to helping needy members in the community and minimising waste disposal.

Scope for improvement in preparing contractor's performance reports

3.47 The performance reports of Contractor A were prepared by EPD on a half-yearly basis (from March 2015 to May 2022) and quarterly basis (since June 2022). Audit noted that some instances of poor performance of Contractor A were not reflected in the relevant periods of the performance reports, as follows:

- (a) delay in commencing the operation of treatment lines 1 and 2 from October 2017 to March 2018 (see para. 3.8(b)(ii));
- (b) delay in completing the outstanding works from May 2018 to November 2020 (see para. 3.12). During the period of delay, only in the performance report of Contractor A covering the period from January to June 2018 did EPD give a "poor" rating under the relevant aspect;
- (c) failure to meet the collection service requirements to collect the regulated WEEE within the specified time limits (see para. 3.27(a)); and

Design, construction and operation of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility

- (d) failure in treatment lines resulting in a total downtime of 56 days (see para. 3.29(a)).

In Audit's view, EPD needs to take measures to ensure that the performance of contractors is duly reflected in their performance reports.

Audit recommendations

3.48 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **take measures to ensure that Contractor A:**
 - (i) **timely reports all non-compliance test results on environmental performance requirements to EPD in accordance with the stipulated timeframe; and**
 - (ii) **timely triggers a level 2 (i.e. more stringent) monitoring for environmental performance requirements in accordance with the required timeframe specified by EPD in September 2024;**
- (b) **consider reviewing the comprehensiveness of the operational performance requirements when designing the terms of the upcoming contract for the operation of WEEE-PARK and incorporating more operational performance requirements where appropriate;**
- (c) **take measures to encourage Contractor A to meet the target number of repaired products for individual sub-types of regulated WEEE as far as practicable;**
- (d) **continue to donate repaired Type 2 regulated WEEE by Contractor A with a view to helping needy members in the community and minimising waste disposal; and**
- (e) **take measures to ensure that the performance of contractors is duly reflected in their performance reports.**

Response from the Government

3.49 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) EPD will continue to remind Contractor A to timely report any non-compliance test results and to timely trigger a level 2 monitoring for environmental performance requirements in accordance with the required timeframe specified by EPD in September 2024;
- (b) EPD will review the comprehensiveness of the operational performance requirements and incorporate more relevant requirements of this kind as necessary and appropriate;
- (c) while the overall target number of repaired products was set as the operational performance requirement, EPD will review the trend of the demand more comprehensively with a view to setting a realistic target for each sub-type of repaired products as commensurate with the market demand as practicable for the remaining operation years of Contract A;
- (d) EPD will liaise with Contractor A with a view to recovering more Type 2 regulated WEEE for donation to the needy in the remaining operation years of Contract A at no cost. It will also consider including the donation of Type 2 regulated WEEE in the follow-on contract; and
- (e) EPD will duly reflect contractors' performance in their performance reports.

PART 4: OTHER RELATED ISSUES

4.1 This PART examines other issues related to WPRS, focusing on:

- (a) collection of recycling levies (paras. 4.2 to 4.18);
- (b) other administrative issues (paras. 4.19 to 4.29); and
- (c) way forward (paras. 4.30 to 4.34).

Collection of recycling levies

4.2 Under PERO, registered suppliers of REE (i.e. manufacturers and importers) are required to pay recycling levies for REE distributed in Hong Kong. In determining the amount of recycling levies payable by the registered suppliers, registered suppliers should submit quarterly returns and an audit report annually to EPD. EPD would conduct checking and vetting of the returns and audit reports received, perform recycling levy assessment and issue payment notices and general demand notes for demanding recycling levies on a quarterly basis in general.

4.3 According to EPD, taking into account all relevant stipulated time pledges in the recycling levy collection process (effective since October 2020), the elapsed time from the end of reporting period (i.e. end of quarter) to the date of settlement of recycling levies for that reporting period by the registered suppliers should normally not exceed 150 days. Audit noted that:

- (a) regarding the returns with processing completed by EPD from October 2020 to March 2024, 2,368 payment notices (involving recycling levies of \$928.3 million) were issued to the registered suppliers and 137 (6%) payment notices (involving recycling levies of \$9.2 million) took more than 150 days to settle, ranging from 151 to 300 days (averaging 188 days) (see Table 5); and
- (b) as of May 2024, 1 (0.1%) of the 2,368 payment notices involving recycling levies of \$8,475 was not yet settled and had been overdue for 91 days (see para. 4.16).

Other related issues

Audit examination revealed that there was scope for improvement in collecting recycling levies from the registered suppliers of REE (see paras. 4.4 to 4.16).

Table 5

**Time elapsed from the end of reporting period to
the date of settlement of recycling levies
(May 2024)**

Time elapsed from the end of reporting period to the date of settlement of recycling levies (Day)	Number of payment notices	Amount of recycling levies (\$ million)
1 to 50	296 (12%)	82.7
51 to 100	1,443 (61%)	696.3
101 to 150	491 (21%)	140.1
151 to 200	97 (4%)	6.1
201 to 250	31 (1%)	3.0
251 to 300	9 (1%)	0.1
Total	2,367 (100%)	928.3

Source: EPD records

Need to ensure timely submission of returns and audit reports by registered suppliers of REE

4.4 According to REE Regulation, registered suppliers of REE must submit returns and audit reports to EPD, as follows:

- (a) **Returns.** The returns must contain information for determining the amount of recycling levies payable by the registered suppliers of REE (e.g. the quantity of REE distributed) for the reporting period. In general, the returns must be submitted within 28 days after the last day of each reporting

period ending on 31 March, 30 June, 30 September or 31 December (Note 38); and

- (b) **Audit reports.** Under PERO, the audit reports must be prepared by a certified public accountant (practising). The auditor must state in the audit reports whether in the opinion of the auditor that the quantity of REE reported in the returns had been reported in accordance with PERO. In general, the audit reports, together with the discrepancy lists (if required — Note 39) must be submitted within 3 months after the last day of each audit year (Note 40).

4.5 **Scope for improvement in issuing reminders.** To ensure timely submission of returns and audit reports by the registered suppliers of REE, EPD guidelines issued in October 2020 have set out the procedures of issuing reminders to the registered suppliers of REE. However, Audit noted that:

- (a) **Not following guidelines in issuing reminders.** EPD did not follow the procedures stipulated in the guidelines in issuing reminders. Details are as follows:
 - (i) **Returns.** According to EPD guidelines, reminders for submission of returns would be issued to the registered suppliers one week prior to the submission deadlines. It was the practice of EPD to issue two reminders instead of one as stipulated in the guidelines. The first reminders would be issued to the registered suppliers on the second

Note 38: *Under PERO, any person who contravenes this requirement is liable to a fine at level 6 (i.e. \$100,000) on the first conviction, and a fine of \$200,000 on subsequent convictions.*

Note 39: *Under REE Regulation, for discrepancies in the quantity of REE identified between a return covered by the audit report and records and documents kept for the return, the auditor must set out the discrepancies in a discrepancy list. The amount of the recycling levies payable for the first subsequent return would be adjusted by the discrepancies identified.*

Note 40: *Under PERO, any person who contravenes this requirement is liable to a fine at level 5 (i.e. \$50,000). Under REE Regulation, a registered supplier of REE may apply for exemption from submission of the audit report (see Note 10 to para. 2.6(a)(ii)).*

Other related issues

day after the end of the reporting period and the second reminders would be issued to those who still have not submitted their returns on the fifteenth day after the end of the reporting period; and

- (ii) **Audit reports.** According to EPD guidelines, reminders for submission of audit reports would be issued to the registered suppliers at the end of every month between the end of the reporting periods and the submission deadlines. In addition to the procedures stipulated in the guidelines to issue reminders, it was the practice of EPD to issue the first reminders to the registered suppliers on the second day after the end of the reporting period; and
- (b) ***Some reminders not issued in accordance with EPD's practice.*** From October 2020 to March 2024, there were 2,997 returns and 719 audit reports due for submission by the registered suppliers of REE and EPD did not issue reminders in accordance with its practice in some cases. As of March 2024:
 - (i) **Returns.** Of the 2,997 returns, the first reminders were not issued for 18 (1%) returns. Of the 1,347 returns requiring the issuance of second reminders, the second reminders were not issued for 2 (1%) returns; and
 - (ii) **Audit reports.** Of the 719 audit reports, the first reminders were not issued for 4 (1%) audit reports.

4.6 ***Scope for improvement in following up overdue returns/audit reports.*** According to EPD guidelines issued in October 2020, if any registered suppliers of REE fail to submit the returns or audit reports by the deadlines of submission, warning letters, demanding submissions within 14 days, would be issued. From October 2020 to March 2024, there were 2,997 returns and 719 audit reports due for submission by the registered suppliers of REE. Audit noted that, as of March 2024:

- (a) **Returns.** Of the 2,997 returns, 341 (11%) were overdue. However:
 - (i) of the 341 returns, warning letters were issued for 210 (62%) returns 5 to 113 days (averaging 8 days) after the return submission deadlines and no warning letters were issued for the remaining

131 (38%) returns. Of these 131 returns, 6 (5%) returns remained outstanding; and

- (ii) of the 210 returns with warning letters issued, 140 (67%) were submitted by the suppliers within 14 days and 68 (32%) were submitted 15 to 116 days (averaging 37 days) after the issue of warning letters. There were still 2 (1%) returns remained outstanding.

In the event, of the 341 overdue returns, 333 (98%) were submitted (Note 41) and 8 (2%) were still overdue for 63 days to 5.2 years (averaging 3.9 years); and

- (b) ***Audit reports.*** Of the 719 audit reports, 145 (20%) were overdue. However:

- (i) of the 145 audit reports, warning letters were issued for 95 (66%) audit reports 3 to 36 days (averaging 7 days) after the report submission deadlines and no warning letters were issued for the remaining 50 (34%) reports. Of these 50 audit reports, 26 (52%) reports remained outstanding; and
- (ii) of the 95 audit reports with warning letters issued, 34 (36%) were submitted by the suppliers within 14 days and 55 (58%) were submitted 15 to 308 days (averaging 69 days) after the issue of warning letters. There were still 6 (6%) reports remained outstanding.

Note 41: *The 333 returns were submitted by the suppliers 1 to 189 days (averaging 18 days) after the due dates with a total amount of recycling levies of \$80.7 million payable by them.*

Other related issues

In the event, of the 145 overdue audit reports, 113 (78%) were submitted (Note 42) and 32 (22%) were still overdue for 1 day to 5.1 years (averaging 4 years) (Note 43).

4.7 In Audit's view, EPD needs to take measures to ensure that returns and audit reports are submitted by the registered suppliers of REE in a timely manner, including:

- (a) reviewing its staff's practice in issuing reminders to the registered suppliers of REE for submission of returns and audit reports, and updating its guidelines where appropriate;
- (b) taking measures to ensure that reminders and warning letters are timely issued to the registered suppliers of REE in accordance with the related guidelines; and
- (c) considering other measures to ensure timely submission of returns and audit reports by the registered suppliers of REE (e.g. imposing fines and/or surcharges on late submission cases).

Scope for improvement in completing the processing of returns and audit reports submitted by registered suppliers of REE

4.8 According to EPD guidelines issued in October 2020, for returns and audit reports submitted by the registered suppliers of REE, EPD would generally complete the checking and vetting within 15 working days after submissions are in order.

Note 42: *The 113 audit reports were submitted by the suppliers 1 day to 1.3 years (averaging 47 days) after the due dates and for those with discrepancy lists, there was a net undercharge of recycling levies of \$0.9 million.*

Note 43: *Of the 687 audit reports (i.e. 719 due for submission – 32 outstanding) submitted by the suppliers, 26 audit reports did not have complete information. Of the 26 audit reports with incomplete information, as of May 2024, supplementary information of 18 (69%) reports had been received by EPD. According to EPD, follow-up actions had been taken in requesting for the outstanding information for the remaining 8 reports.*

4.9 From October 2020 to March 2024, EPD received 2,996 returns and 682 audit reports with all necessary information from the registered suppliers of REE (Note 44). Audit noted that the time pledge for completing the processing (i.e. 15 working days) of these 2,996 returns and 682 audit reports was not met in some cases. As of March 2024:

- (a) **Returns.** Of the 2,996 returns received:
 - (i) 2,995 (99.9%) were approved by EPD, of which the processing of 1,825 (61% of 2,995) were completed in more than 15 working days, ranging from 16 to 153 working days (averaging 38 working days). Based on the information in the 1,825 returns, a total amount of \$262.6 million recycling levies was payable by the registered suppliers; and
 - (ii) 1 (0.1%) was being processed by EPD, which was submitted 2 working days ago; and
- (b) **Audit reports.** Of the 682 audit reports received:
 - (i) 567 (83%) were approved by EPD, of which the processing of 191 (34% of 567) were completed in more than 15 working days, ranging from 16 to 246 working days (averaging 96 working days). Of these 191 audit reports, 17 reports were submitted with adjustments in recycling levies in the discrepancy lists (comprising 10 reports with undercharged recycling levies of \$674,230 and 7 reports with overcharged recycling levies of \$24,240) and their processing was completed in 16 to 193 working days (averaging 78 working days); and

Note 44: *According to EPD: (a) the 2,996 returns included 2,989 (i.e. 2,997 due for submission – 8 outstanding) returns due for submission from October 2020 to March 2024 and 7 returns due for submission before October 2020; and (b) the 682 audit reports included 661 (i.e. 719 due for submission – 32 outstanding – 26 with incomplete information) audit reports due for submission from October 2020 to March 2024 and 21 audit reports due for submission before October 2020.*

Other related issues

- (ii) 115 (17%) were being processed by EPD, of which 82 (71% of 115) were submitted more than 15 working days ago, ranging from 16 to 251 working days (averaging 122 working days).

4.10 In Audit's view, EPD needs to take measures to ensure that the processing of returns and audit reports submitted by the registered suppliers of REE is timely completed in accordance with the stipulated time pledges.

Need to ensure that payment notices for recycling levies are timely issued

4.11 According to EPD guidelines issued in October 2020:

- (a) it is imperative that the assessment and collection of levy should be carried out accurately and promptly; and
- (b) all payment notices and general demand notes should be issued before the due dates of the returns for the subsequent reporting period as far as possible.

4.12 According to EPD, in respect of the 2,995 returns approved during October 2020 to March 2024, EPD issued 2,368 payment notices (i.e. 2,995 – 627 with nil amount of recycling levies payable by the suppliers) for recycling levies amounting to \$928.3 million to the registered suppliers of REE. Audit noted that, of these 2,368 payment notices, as of March 2024:

- (a) 171 (7%) payment notices were issued 2 to 89 working days (averaging 21 working days) after the stipulated time pledge (i.e. after the due dates of the returns for the subsequent reporting period). The corresponding amount of recycling levies payable by the registered suppliers for these 171 payment notices ranged from \$15 to \$1.6 million (averaging \$58,740), which accounted for a total amount of recycling levies of some \$10 million; and
- (b) 2,197 (93%) payment notices were issued by EPD in accordance with the stipulated time pledge.

In Audit's view, EPD needs to take measures to ensure that payment notices for recycling levies are timely issued in accordance with the stipulated time pledge.

Need to ensure timely settlement of recycling levies by registered suppliers of REE

4.13 According to REE Regulation, the payment of recycling levies must be made within 30 days after the day on which the payment notices were served on the registered suppliers of REE (Note 45).

4.14 To ensure timely settlement of recycling levies by the registered suppliers of REE, EPD guidelines issued in October 2020 have set out the procedures of issuing reminders to the registered suppliers. According to the guidelines, if the registered suppliers failed to settle the recycling levies on or before the due dates of the payment notices:

- (a) first reminders will be issued to the registered suppliers within 2 working days from the due dates of the payment notices, demanding payment of the recycling levies within 14 days (Note 46); and
- (b) if recycling levies were not settled on or before the due dates of the first reminders, final notices will be issued to the registered suppliers within 2 working days from the due dates of the first reminders, demanding payment of the recycling levies within another 14 days (Note 47).

Note 45: *Under PERO, an outstanding amount of recycling levy payable is recoverable as a civil debt due to the Government. Any person who contravenes the requirement of paying the recycling levy within the prescribed period is liable to a fine at level 6 (i.e. \$100,000) on the first conviction, and a fine of \$200,000 on subsequent convictions.*

Note 46: *According to EPD guidelines, in parallel to the issue of first reminder, the case will also be referred to the Enforcement Team of EPD for considering prosecution actions under PERO.*

Note 47: *According to EPD guidelines, if the registered supplier failed to settle the recycling levy on or before the due date of the final notice, the case will be referred to the Department of Justice requesting assistance for recovery of levy.*

Other related issues

4.15 Of the 2,368 payment notices issued (see para. 4.12), recycling levies of 312 (13%) payment notices were not settled on or before the due dates of the payment notices. Audit noted that, first reminders and/or final notices were issued where appropriate in accordance with the stipulated time pledges to follow up on the overdue payment notices.

4.16 As of May 2024, 1 (1% of 312) payment notice involving recycling levies of \$8,475 was not yet settled and had been overdue for 91 days. According to EPD, a letter had been issued to the registered supplier concerned on 7 June 2024 to recover the debt. In Audit's view, EPD needs to:

- (a) make continued efforts to ensure timely settlement of recycling levies by the registered suppliers of REE; and
- (b) keep in view the status of the overdue payment notice for recycling levy and take follow-up actions as appropriate.

Audit recommendations

4.17 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **take measures to ensure that returns and audit reports are submitted by the registered suppliers of REE in a timely manner, including:**
 - (i) **reviewing EPD staff's practice in issuing reminders to the registered suppliers of REE for submission of returns and audit reports, and updating EPD guidelines where appropriate;**
 - (ii) **taking measures to ensure that reminders and warning letters are timely issued to the registered suppliers of REE in accordance with the related guidelines; and**
 - (iii) **considering other measures to ensure timely submission of returns and audit reports by the registered suppliers of REE (e.g. imposing fines and/or surcharges on late submission cases);**

- (b) take measures to ensure that the processing of returns and audit reports submitted by the registered suppliers of REE is timely completed in accordance with the stipulated time pledges;
- (c) take measures to ensure that payment notices for recycling levies are timely issued in accordance with the stipulated time pledge;
- (d) make continued efforts to ensure timely settlement of recycling levies by the registered suppliers of REE; and
- (e) keep in view the status of the overdue payment notice for recycling levy and take follow-up actions as appropriate.

Response from the Government

4.18 The Director of Environmental Protection agrees with the audit recommendations. He has said that EPD will:

- (a) enhance the computer system to facilitate the submissions of returns and audit reports by the registered suppliers of REE and strengthen management control in case monitoring to keep track of the processing time; and
- (b) take further measures to ensure the timely and proper issuance of first reminders, warning letters and/or final notices, and continue promoting the use of the computer system for submissions of returns and audit reports.

Other administrative issues

Need to closely monitor the cost recovery rates of WPRS

4.19 According to Financial Circular No. 6/2016, it is the Government's policy that fees charged by the Government should in general be set at levels adequate to recover the full cost of providing the goods or services. Fees should generally be reviewed and, where necessary, revised on an annual basis.

Other related issues

4.20 In setting the recycling levy levels for WPRS, it has been EPD's practice to adopt a global costing approach for achieving full cost recovery on an overall basis (i.e. the total full cost of delivering service for operation of WEEE-PARK and other relevant administrative costs incurred by EPD were used in assessing the overall cost recovery rate).

4.21 Since the implementation of WPRS in August 2018, EPD conducted two costing reviews on the recycling levies of REE under WPRS in May 2022 and May 2024 and decided not to adjust the recycling levies (Note 48). Audit noted that:

- (a) ***Decrease in overall cost recovery rate.*** The overall cost recovery rate of the period covering 2018-19 to 2028-29 dropped from 105.2% (forecasted in May 2022) to 99.8% (forecasted in May 2024); and
- (b) ***Downward trend in cost recovery rate.*** The May 2024 review forecasted that the cost recovery rate for 2024-25 to 2028-29 would follow a downward trend and decreased from 96.2% for 2024-25 to 89.5% for 2028-29. It is envisaged that the treatment costs of certain sub-types of regulated WEEE would be further increased, particularly for washing machines and refrigerators, arising from the 4 ECs (3 valued at \$281.3 million and 1 estimated at \$530.7 million as of March 2024) issued under Contract A to increase the collection and processing capacity for these sub-types.

4.22 In Audit's view, EPD needs to closely monitor the cost recovery position of WPRS with a view to achieving full cost recovery and take actions where appropriate.

Note 48: *According to EPD, the recycling levy levels are: (a) \$165 per item for refrigerators and televisions; (b) \$125 per item for air-conditioners, dehumidifiers, tumble dryers and washing machines; (c) \$45 per item for monitors; and (d) \$15 per item for computers, printers and scanners.*

Need to step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE

4.23 According to EPD, as of August 2024 (i.e. after the implementation of the enhanced WPRS), there were 18 licensees of e-WDL. Audit noted that among the 10 sub-types of regulated WEEE:

- (a) for some sub-types of regulated WEEE (i.e. washing machines, televisions and monitors without cathode ray tubes, computers, printers and scanners), there were 4 to 18 recyclers holding the respective e-WDLs for recycling such e-waste;
- (b) Contractor A was the only recycler licensed to recycle the remaining sub-types of regulated WEEE, including air-conditioners, refrigerators, tumble dryers, dehumidifiers, and televisions and monitors with cathode ray tubes. The processing of these sub-types of regulated WEEE thus solely relied on WEEE-PARK; and
- (c) in April 2021, Consultant Y informed EPD that the treatment capacity of treatment line 1 was almost fully utilised and could not be increased by extending working hours given the treatment line had been operating 24 hours for some days in a week. The treatment of refrigerators might be an imminent problem (i.e. approaching the maximum treatment capacity).

4.24 According to EPD, upon the implementation of WPRS in August 2018, it had frequent communications with potential e-WDL applicants. However, most recyclers were interested in the business-to-business mode of operation and treating regulated WEEE with high recycling value and profit margin only. On the other hand, the high collection and treatment costs of certain sub-types of regulated WEEE (e.g. washing machines and refrigerators), as well as the low profit generated from the sale of recyclable materials, discouraged the private recyclers to recycle certain sub-types of regulated WEEE due to their own business considerations.

4.25 In Audit's view, EPD needs to step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE with few licensed recyclers (i.e. air-conditioners, refrigerators, tumble dryers, dehumidifiers, and televisions and monitors with cathode ray tubes).

Scope for further promoting e-submission of applications, returns and reports related to WPRS

4.26 According to EPD:

- (a) since mid-June 2020, applications for registration as registered suppliers of REE and endorsement of RSPs, and returns and audit reports of registered suppliers of REE could be submitted electronically; and
- (b) since November and August 2021, applications for e-WDLs and import and export permits for e-waste could be submitted electronically respectively.

4.27 Audit noted that e-submission was not widely adopted for some types of submission. From January 2021 to March 2024:

- (a) while the percentages of e-submission to total submission increased from 64% to 83% for registered suppliers' returns and from 0% to 51% for registered suppliers' audit reports, the percentage of applications for endorsement of RSPs remained at around 30% and that of applications for registration as registered suppliers decreased from 56% to 0% (see Table 6); and
- (b) none of the 7 applications for e-WDLs received by EPD since November 2021 were submitted via e-submission (Note 49).

In Audit's view, EPD needs to take measures to further promote e-submission of applications, returns and reports related to WPRS.

Note 49: *According to EPD, due to a small number of licensees of e-WDLs and complication of quarterly and annual reports submitted by the licensees, e-submission was not considered at the current stage.*

Table 6

**Applications and submissions made via e-submission
(January 2021 to March 2024)**

Year	Applications		Submissions	
	Endorsement of RSPs	Registration as registered suppliers	Registered suppliers' returns	Registered suppliers' audit reports
2021	18 (32 %)	18 (56 %)	546 (64 %)	0 (0 %) (Note 1)
2022	8 (24 %)	17 (81 %)	636 (75 %)	18 (9 %)
2023	17 (35 %)	3 (13 %)	696 (81 %)	89 (45 %)
2024 (up to March)	3 (27 %)	0 (0 %) (Note 2)	173 (83 %)	29 (51 %)

Source: EPD records

Note 1: In 2021, EPD received a total of 202 audit reports in paper form from the registered suppliers.

Note 2: From January to March 2024, EPD received a total of 8 applications in paper form for registration as registered suppliers.

Remarks: Figures in brackets denote percentages of e-submission to total submission.

Audit recommendations

4.28 **Audit has recommended that the Director of Environmental Protection should:**

- (a) **closely monitor the cost recovery position of WPRS with a view to achieving full cost recovery and take actions where appropriate;**
- (b) **step up efforts in facilitating applicants to apply for e-WDLs for recycling certain sub-types of regulated WEEE with few licensed recyclers; and**

- (c) **take measures to further promote e-submission of applications, returns and reports related to WPRS.**

Response from the Government

4.29 The Director of Environmental Protection agrees with the audit recommendations. He has said that:

- (a) in line with the established policy, EPD conducts regular reviews on the fee level of WPRS. All along, the revenue of WPRS is broadly in line with the expenditure;
- (b) while the number of recyclers of different kinds of e-waste depends on the market situation of the recycling industry, which is market-driven, EPD will continue to facilitate interested recyclers to apply for the necessary licences and permits; and
- (c) EPD will make continued efforts to promote the e-submission through trade associations and door-to-door visits to registered suppliers and sellers of REE.

Way forward

Need to keep under review the effectiveness of WPRS

4.30 According to EPD, WPRS aims to achieve resources recovery and provide a long-term solution to potential land contamination and environmental problems arising from mishandling of WEEE during delivery, storage and dismantling processes (see para. 1.2). To contribute towards the proper management of WEEE locally, WEEE-PARK was developed with a design treatment capacity of 30,000 tonnes per annum (see para. 1.7).

4.31 According to EPD, since the implementation of WPRS in August 2018 (see Table 7):

- (a) the proportion of WEEE locally collected for recycling increased from 42 % in 2018 to 73 % in 2022. Of the 46,458 tonnes of WEEE locally collected for recycling in 2022, 22,169 (48 %) were handled by WEEE-PARK;
- (b) the proportion of WEEE disposed of at landfill decreased from 37 % in 2018 to 25 % in 2022; and
- (c) the proportion of WEEE exported for recycling decreased from 21 % in 2018 to 2 % in 2022.

Table 7

**Quantity of WEEE generated in Hong Kong
(2018 to 2022)**

Year	Quantity of WEEE (Note 1)			
	Disposed of at landfill	Locally collected for recycling (Note 2)	Exported for recycling	Total WEEE generated in Hong Kong
	(a) (tonnes)	(b) (tonnes)	(c) (tonnes)	(d) = (a) + (b) + (c) (tonnes)
2018	24,482 (37 %)	27,637 (42 %)	14,318 (21 %)	66,437 (100 %)
2019	21,550 (31 %)	42,505 (62 %)	4,899 (7 %)	68,954 (100 %)
2020	16,648 (29 %)	36,782 (64 %)	4,294 (7 %)	57,724 (100 %)
2021	15,343 (26 %)	40,377 (68 %)	3,434 (6 %)	59,154 (100 %)
2022	16,145 (25 %)	46,458 (73 %)	1,461 (2 %)	64,064 (100 %)

Source: EPD records

Note 1: According to EPD, the quantity included REE and non-REE not covered by WPRS. Detailed breakdown by different types of WEEE was not available.

Note 2: According to EPD, it comprised WEEE treated by WEEE-PARK, WEEE treated by other licensees of e-WDLs, second-hand REE and non-REE not covered by WPRS and detailed breakdown was not available.

Remarks: According to EPD, figures for 2023 were not yet available as of September 2024.

Other related issues

4.32 Notwithstanding the achievements made in recent years, in 2022, about 25% of WEEE generated in Hong Kong was still disposed of at landfill and the actual quantity increased by 802 tonnes (5%) from 15,343 tonnes in 2021 to 16,145 tonnes in 2022. Audit noted that WPRS was implemented in August 2018 and EPD has not conducted any formal review on the scheme since its implementation. Besides, Contract A for operating WEEE·PARK will expire in 2027. In Audit's view, it is an opportune time for EPD to conduct a review on WPRS and WEEE·PARK to evaluate their effectiveness and determine the way forward, taking into account the audit observations and recommendations in this Audit Report.

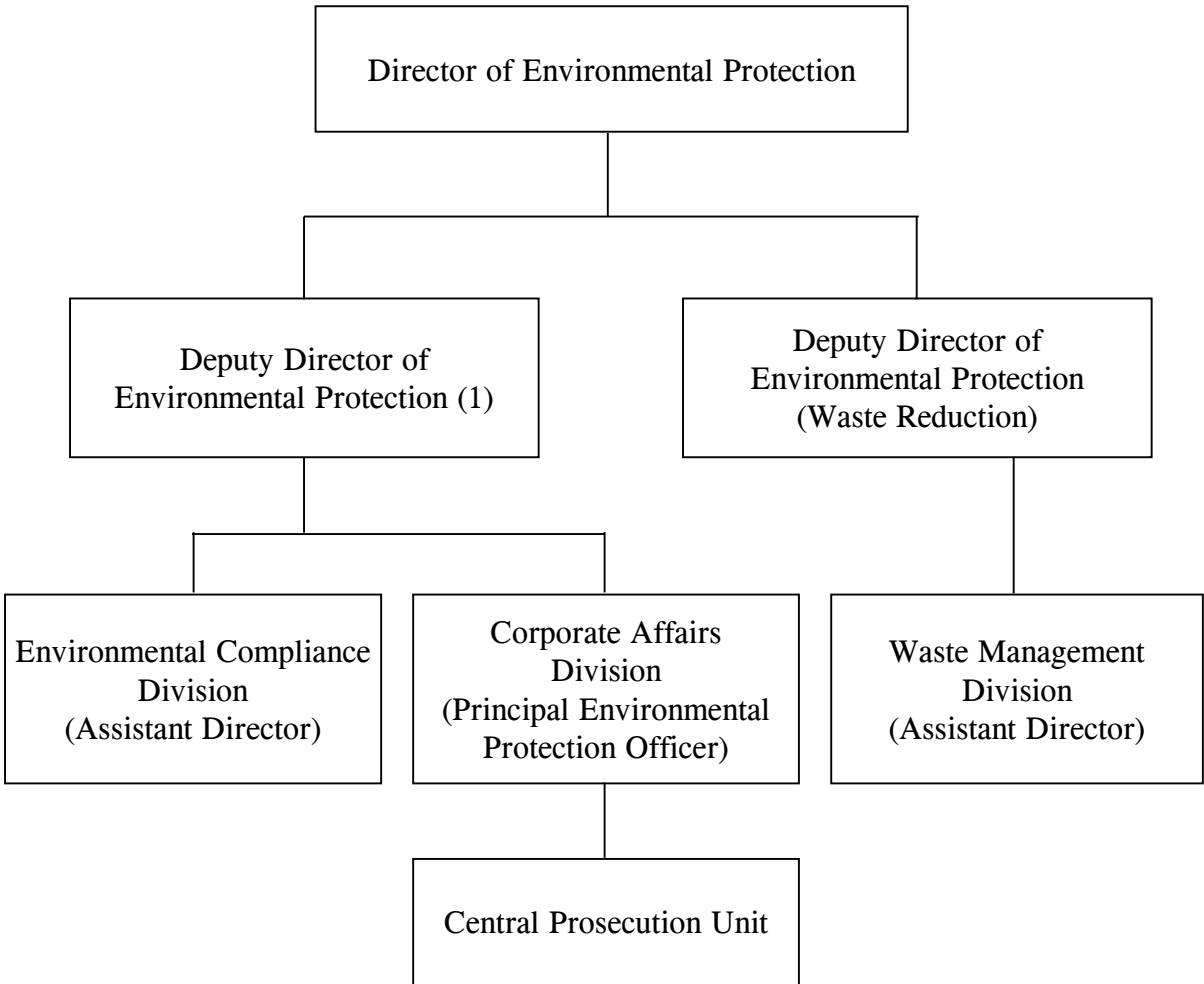
Audit recommendation

4.33 **Audit has *recommended* that the Director of Environmental Protection should conduct a review on WPRS and WEEE·PARK to evaluate their effectiveness and determine the way forward, taking into account the audit observations and recommendations in this Audit Report.**

Response from the Government

4.34 The Director of Environmental Protection agrees with the audit recommendation. He has said that EPD has commenced follow-up actions.

**Environmental Protection Department:
Organisation chart (extract)
(31 March 2024)**



Source: EPD records

Acronyms and abbreviations

Audit	Audit Commission
CCTV	Closed circuit television
DBO	Design-build-operate
EC	Employer's Change
EEB	Environment and Ecology Bureau
EPD	Environmental Protection Department
e-WDL	Waste disposal licence for e-waste
LegCo	Legislative Council
PERO	Product Eco-responsibility Ordinance
PRS	Producer Responsibility Scheme
REE	Regulated electrical equipment
REE Regulation	Product Eco-responsibility (Regulated Electrical Equipment) Regulation
RSP	Removal service plan
WDO	Waste Disposal Ordinance
WEEE	Waste Electrical and Electronic Equipment
WEEE·PARK	Waste Electrical and Electronic Equipment Treatment and Recycling Facility
WPRS	Producer Responsibility Scheme on Waste Electrical and Electronic Equipment