

**For discussion  
on 28 April 2014**

**LEGISLATIVE COUNCIL  
PANEL ON ENVIRONMENTAL AFFAIRS**

**HANDLING OF WASTE ELECTRICAL AND ELECTRONIC  
EQUIPMENT (WEEE) AND WEEE TREATMENT AND  
RECYCLING FACILITY**

**PURPOSE**

This paper –

- (a) updates Members of the Government's plan to handle WEEE through a new mandatory producer responsibility scheme (PRS); and
- (b) seeks Members' support to upgrade **5180DR – Development of the Waste Electrical and Electronic Equipment Treatment and Recycling Facility (WEEETRF)** to Category A at an estimated cost of \$536.1 million in money-of-the-day (MOD) prices.

**BACKGROUND**

2. About 70 000 tonnes of WEEE are generated in Hong Kong annually, most of which is exported for reuse or recovery of valuable materials. The reliance on export may not be sustainable in the long run because demand for second-hand products overseas will decline over time with progressive economic development and tightening of import control over WEEE in the developing countries. In view of these developments, the introduction of a mandatory PRS on WEEE and development of a WEEE treatment facility in Hong Kong will contribute towards the proper management of our WEEE locally and the long-term development of our recycling industry.

3. We have been promoting the recycling of electrical appliances, computers, rechargeable batteries, fluorescent lamps/tubes and glass beverage bottles by organizing promotion and publicity activities and

providing technical support for recycling programmes that are funded by the Environment and Conservation Fund (ECF) or self-financed by the trades. For WEEE recycling, with the funding support of the ECF, St. James' Settlement has been operating a WEEE Recycling Centre (as known as the WEEE GO GREEN programme<sup>1</sup>) at the EcoPark since 2010. In its first three years of operation, about 800 tonnes of WEEE were collected and properly treated. Under the Computer Recycling Programme<sup>2</sup> funded by the computer trade, about 27 000 of computer items were recycled in 2013.

4. As part of the waste management strategy committed under *Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022* issued in May 2013, we will progressively implement mandatory PRSs based on the “polluter pays” principle. Further to the enactment of the Product Eco-responsibility (Amendment) Ordinance 2014 on 19 March 2014 to extend the Environmental Levy Scheme on Plastic Shopping Bags to the whole retail sector with effect from 1 April 2015, we aim to introduce legislative proposals for implementing a mandatory PRS on WEEE within 2014.

## **THE PRODUCER RESPONSIBILITY SCHEME**

5. In 2010, we completed a public consultation which revealed that the community was generally supportive of introducing legislation on a mandatory PRS on WEEE in Hong Kong. We also received a strong call from the public for the Government to demonstrate a firm commitment in kick-starting the PRS through providing assistance in the development of a local treatment facility. We reported the way forward of the proposed PRS to this Panel on 28 November 2011, including our plan to support the development of the WEEETRF at a three-hectare site at the EcoPark in Tuen Mun. Since then, we have been following up with the necessary preparatory work.

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<sup>1</sup> Under the WEEE GO GREEN programme, there are qualified and registered technicians to inspect, repair and test used electrical and electronic equipment collected. Functioning units that meet the required safety standards are donated to the needy or put up for charitable sale. Units that are beyond repair are dismantled to recover recyclable materials.

<sup>2</sup> Under the Computer Recycling Programme, computers that are suitable for reuse will be refurbished in a computer recycling workshop run by Caritas Hong Kong for donation and the remainder will be dismantled to recover useful components and materials.

## Key Features of the Mandatory PRS

6. The mandatory PRS on WEEE requires amendments to the Product Eco-responsibility Ordinance (Cap. 603) (PERO) and the Waste Disposal Ordinance (Cap. 354) (WDO). It will also be complemented by the setting up of the proposed WEEETRF (to be elaborated in paragraphs 13 to 19 below). In line with the “polluter pays” principle, there will be a statutory recycling fee imposed on the new regulated electrical equipment in order to recover the full PRS costs for collection, treatment and administration.

### *Scope of Regulated Electrical Equipment*

7. We **propose** to regulate five types of products under the mandatory PRS, namely (i) washing machines, (ii) refrigerators, (iii) air conditioners, (iv) televisions and (v) computer products viz. computers (i.e. desktops, laptops and tablets), printers, scanners and monitors (collectively as “regulated electrical equipment” hereafter). These products account for about 85% of WEEE locally generated in Hong Kong. The rest is largely attributable to consumer electronics that are often marketable in the local second-hand market, or other small household appliances of miscellaneous types. We will be in a better position to consider the need of extending the mandatory PRS for these products at a later stage after accumulating further experience.

### *Collection of Regulated Electrical Equipment*

8. A consumer often requires take-back service for the removal of the old electrical equipment from his premises after purchasing a replacement. He may now put up a request and the seller of the new equipment or his service agent may, depending on practical circumstances, make the necessary arrangements. Such service will be promoted under the mandatory PRS which will require sellers of regulated electrical equipment to arrange the take-back service free of charge. As elaborated in paragraph 15 below, the operator of the proposed WEEETRF may upon request by sellers provide the collection services. By this, old electrical equipment can be collected more efficiently to form a critical mass to be handled by the proposed WEEETRF.

### *Proper Treatment of Regulated Electrical Equipment*

9. We **propose** to apply the licencing control under section 16 of the WDO to the disposal of regulated electrical equipment when they are

spent (collectively as “regulated e-waste” hereinafter). At present, the disposal of chemical waste, including monitors and televisions with cathode ray tubes as well as rechargeable batteries in bulk, requires a waste disposal licence under the WDO. We will seek to amend the WDO such that –

- (a) For treatment, reprocessing and recycling of regulated e-waste, a waste disposal licence will be required and will only be granted if the operator can demonstrate that the processes adopted are environmentally sound.
- (b) For storage of regulated e-waste, a storage site operator will also have to obtain a waste disposal licence under the WDO and comply with terms and conditions imposed thereunder. At present, about 100 temporary open storage areas have been set up in the New Territories to store WEEE pending shipment overseas. Many sites do not have proper shelter and are not paved. Exposure to the elements can result in land contamination from the leaching of heavy metals, fire hazards, eyesores and other problems.

#### *Import/Export Permit Control*

10. Hong Kong is a trading hub. To ensure that any regulated e-waste traded through Hong Kong will not cause burden to our landfills or environmental hazards overseas, we **propose** that import and export of regulated e-waste will require a permit under the WDO. This will be built upon the existing system for the implementation of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. Under the proposal, no regulated e-waste could be exported unless they fulfill the screening criteria to ensure that it will be managed and recycled in an environmentally sound manner in the importing jurisdiction. For imports, we will grant the required permit only if there is a licenced local recycler undertaking the proper treatment of the relevant shipments to guard against dumping of regulated e-waste to Hong Kong from other jurisdictions.

#### *Charge of Recycling Fee*

11. In line with the “polluter pays” principle in the PERO, we will impose a recycling fee to finance the mandatory PRS. The recycling fee will be collected upon the local distribution of the regulated electrical equipment. We will prescribe the specific recycling fees determined at

full cost recovery basis taking into account the procurement costs for the WEEETRF after the award of the Design-Build-and-Operate (DBO) contract for the proposed WEEETRF. We will submit the fee proposal as subsidiary legislation to the Legislative Council (LegCo) for approval in due course.

### Trade Engagement

12. Since our last report to this Panel in November 2011, we have closely engaged the relevant trades in developing the relevant operational details of the mandatory PRS. The regulatory framework as outlined in the above paragraphs largely reflects the broad consensus of the trades.

## **DEVELOPMENT OF THE PROPOSED WEEETRF**

13. International experience has shown that WEEE schemes need to be backed up by local WEEE treatment facilities with adequate capacity and appropriate technology. At present, other than the two non-profit voluntary recycling programmes mentioned in paragraph 3 above, there are a few private WEEE recyclers whose businesses mainly focus on computer products or “off-specification<sup>3</sup>” equipment from commercial or industrial sources. However, their overall treatment capacity cannot meet the demand for the proper treatment of WEEE generated in Hong Kong. After reviewing the market situation, we consider that the Government needs to invest in a WEEE treatment facility such that the territory-wide mandatory PRS can be implemented successfully.

### Project Scope

14. We *propose* to develop the proposed WEEETRF at a three-hectare site at the EcoPark in Tuen Mun. The scope of the proposed WEEETRF includes –

- (a) design and construction of the WEEETRF within the EcoPark Phase II to treat and recycle 30 000 tonnes of e-waste per annum;
- (b) provision of treatment and recycling equipment and

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<sup>3</sup> Off-specification equipment refers to equipment that cannot meet the specifications or standards as may be required by law or regulations or other requirements of the manufacturer.

machinery; and

- (c) provision of architectural and landscaping works for the WEEETRF.

A site plan showing the location of the proposed works is at **Annex A**.

15. We invited the pre-qualified tenders for the DBO contract of the WEEETRF in September 2013 and have completed the tender assessment. Subject to the funding approval of the Finance Committee (FC), we aim to award the contract in the second half of 2014 with a view to commissioning the WEEETRF in late 2016/early 2017. The successful bidder of the DBO contract will take up the role as the “WEEE Management Contractor” (WMC) who will proactively source and collect regulated e-waste for treatment at the proposed WEEETRF. For instance, it will provide free take-back services to sellers of regulated electrical equipment. Where regulated e-waste is collected, the WMC must remove the hazardous substances (if any) with an environmentally sound process and arrange proper treatment to turn the regulated e-waste into reusable materials. The WEEETRF has to be licenced under the WDO and the WMC’s operations will be in line with the statutory requirements under the mandatory PRS on WEEE. In parallel, we will submit the necessary legislative amendments for introducing the mandatory PRS on WEEE to the LegCo for scrutiny within 2014.

#### Financial Implications

16. We estimate that –

- (a) the capital cost of the proposed works will be \$536.1 million in MOD prices with detailed breakdown set out at **Annex B**;
- (b) the operating costs under the DBO contract will lead to an annual recurrent expenditure of about \$200 million per annum and this will last for 10 years under the DBO contract; and
- (c) the proposed works will create about 291 jobs (251 labourers and 40 professional/technical staff) providing a total employment of 4 340 man-months.

17. The capital and recurrent costs arising from the project will be taken into consideration when we determine the recycling fees to be

imposed on the regulated electrical equipment for the implementation of mandatory PRS on WEEE in accordance with the “polluter pays” principle.

### Environmental Implications

18. The proposed WEEETRF is located within the EcoPark. In 2005, the Environmental Impact Assessment (EIA) report for the EcoPark was approved with conditions under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and an environmental permit was issued. The EIA report concluded that the environmental impact of the EcoPark can be controlled to within the criteria under EIAO and the Technical Memorandum on EIA Process. In July 2013, we completed an environmental review for the inclusion of the proposed WEEETRF in the EcoPark, which concluded that the proposed WEEETRF would comply with the established standards and requirements stipulated under the EIAO and the relevant environmental legislation, standards and guidelines. The short-term environmental impacts and other environmental implications at different stages are assessed at Annex C.

### Public Consultation

19. The Environment, Hygiene and District Development Committee of the Tuen Mun District Council was briefed on the latest development of the EcoPark and the WEEETRF project at its meeting on 21 March 2014. Members were supportive of the project.

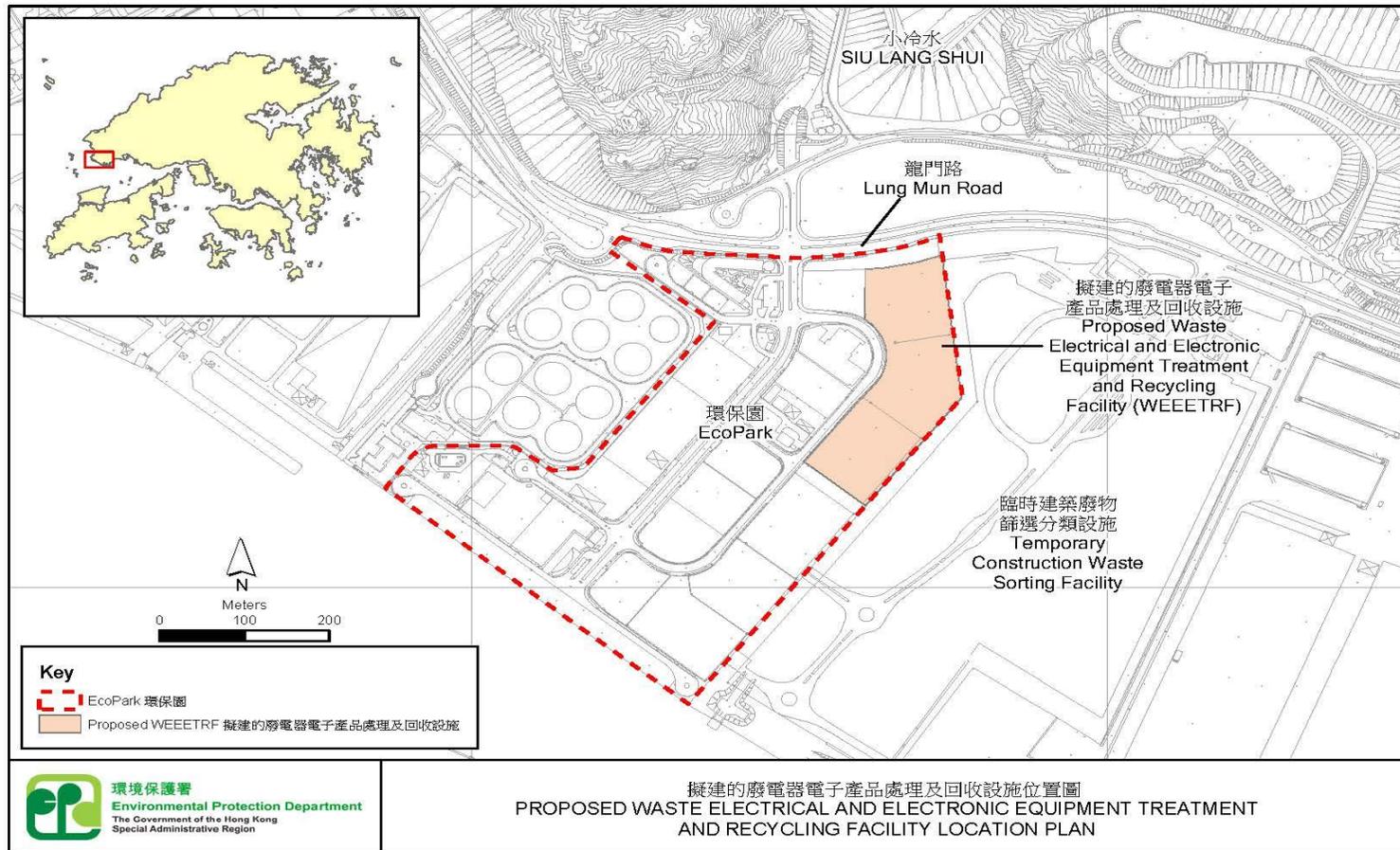
## **WAY FORWARD AND ADVICE SOUGHT**

20. We will continue to prepare the legislative proposals for implementing the mandatory PRS on WEEE and submit them to the LegCo for scrutiny later this year.

21. In parallel, Members are invited to support our proposal of upgrading **5180DR** to Category A to the Public Works Subcommittee for recommendation with a view to seeking the FC’s approval in June 2014.

**Environment Bureau/Environmental Protection Department  
April 2014**

**5180DR – Location of the proposed WEEETRF**



**5180 DR – Capital Cost of the proposed WEEETRF**

The estimate of the capital cost of the project will be \$536.1 million in MOD prices, broken down as follows –

	<b>\$ million</b>	
(a) Site formation	2.8	
(b) Design and construction of the WEEETRF	234.7	
(i) civil engineering and building works	161.5	
(ii) waste reception and weighing systems	7.1	
(iii) electrical works and building services	66.1	
(c) WEEE processing machinery	107.1	
(d) Ancillary works	51.6	
(e) Architectural and landscaping works	18.5	
(f) Consultants' fee	12.0	
(i) contract administration	10.0	
(ii) management of resident site staff	2.0	
(g) Remuneration of resident site staff	13.0	
(h) Contingencies	28.3	
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Sub-total	468.0	(in September 2013 prices)
(i) Provision for price adjustment	68.1	
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Total	536.1	(in MOD prices)
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Subject to the Finance Committee's approval, we will phase the expenditure as follows –

<b>Year</b>	<b>\$ million (Sept 2013)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2014 – 2015	53.4	1.05450	56.3
2015 – 2016	170.7	1.11777	190.8
2016 – 2017	243.9	1.18484	289.0
	<hr/> 468.0 <hr/>		<hr/> 536.1 <hr/>

**5180 DR – Environmental Implications of the proposed WEEETRF**

For short-term environmental impacts during construction, we will control noise, dust and site run-off to levels within established standards and guidelines through implementation of environmental mitigation measures, such as the use of silenced construction equipment to reduce noise generation, water-spraying to reduce dust emission, and proper pre-treatment of site run-off. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices are properly implemented on site.

2. At the design stage, we will require the contractor to take measures such as adopting foundation design with minimum excavation to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible in order to minimise the disposal of inert construction waste at public fill reception facilities (PFRF). We will encourage the contractor to maximise the use of recycled/recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

3. At the construction stage, we will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at PFRF and landfills respectively through a trip-ticket system.

4. We estimate that the project will generate in total about 9 000 tonnes of construction waste. Of these, we will reuse about 900 tonnes (10%) of inert construction waste on site and deliver 6 300 tonnes (70%) of inert construction waste to PFRF for subsequent reuse. In addition, we will dispose of the remaining 1 800 tonnes (20%) of non-inert construction waste at landfills. The total cost of accommodating construction waste at PFRF and landfill sites is estimated to be about \$0.4 million for this project (based on a unit charge rate of \$27 per tonne for disposal at PFRF and \$125 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).