Waste Disposal Ordinance (Cap. 354)
A Guide for Writing Operation Plan
for Waste Disposal Licence of E-Waste

Applicants have to submit operation plans together with duly completed forms (Form EPD-236) when making applications for e-waste disposal licences (e-WDL) under the Waste Disposal Ordinance (WDO). E-waste includes air conditioners, refrigerators, washing machines, dehumidifiers, tumble dryers, televisions, computers, printers, scanners and monitors[1]. Operation plan, after its approval by the Authority, will form an integral part of a WDL, and noncompliance with WDL is a serious offence.

2. These guidelines outline the contents of a typical operation plan and include some operational examples, aiming at helping the applicant to write up his operation plan. However, applicant is always free to use his own style of presentation and not necessarily follow these guidelines as long as details of the operation are adequately covered to the satisfaction of the Authority. It is the responsibility of the applicant to produce a proper and acceptable plan reflecting his actual operation.

Purposes of the operation plan

3. An operation plan for a waste disposal facility sets out the details of e-waste storage, treatment, reprocesing and recycling operations, the planning and management of the associated environmental and safety issues from e-waste reception to final disposal within the facility. It details how the facility will be properly operated to ensure that the e-waste can be treated and recycled in an environmentally safe and acceptable manner to protect the environment and safeguard public health. Before submission of an operation plan, the applicant should critically review whether his operation is up to the requirements.

Aspects to be covered

4. An operation plan should be clear with sufficient details to cover the various essential aspects of the operation, including those mentioned in the following paragraphs. The applicant should engage technically competent persons either within his company or hired outside to check the proposed operation plan. The plan should cover 12 aspects as specified as 5(a) to (l) under "Part 6. Supplementary Information" on the application form i.e. EPD-236. The relevant information and details for each aspect are provided below. Maps (drawn to the metric scales of not less than 1:100), drawings (e.g. floor plans), flowcharts and photos should be included as appropriate. Every plan should be drawn in one whole piece, and not blurred.

(a) Site engineering works and infrastructure

a.1 Include a location plan of the facility/premises, with marking of its site boundary, any nearby sensitive receivers that may potentially be affected by operations of the facility, and its corresponding land use zoning(s) on statutory plan(s) under the Town Planning Ordinance. Sensitive receivers include residential buildings, schools,

[1] E-waste is defined as any electrical equipment or electronic equipment that, judging by its appearance is an item set out in column 2 of Schedule 6 to the Product Eco-responsibility Ordinance (Cap 603) and has been abandoned.

hospitals, places of public worship, performing arts centres, parks etc.

a.2 Include a layout plan of all buildings and structures used for waste storage, treatment, reprocessing and recycling processes within the boundary of the site. The site boundary should also be clearly marked. All buildings and structures should be clearly annotated (such as e-waste reception building, treatment and recycling plants, e-waste storage building, office building). Key parameters such as total site area, sheltered or covered areas, as well as floor areas, dimensions, number of storeys and heights of all buildings and enclosed structures for waste storage, treatment, reprocessing and recycling processes should be indicated. The layout plan should also show access roads, and effluent and stormwater discharge systems for the facility. Sectional drawings should be provided as appropriate.

a.3 Include a layout plan of the areas covering the e-waste reception, transportation, treatment/recycling/disposal of e-waste, with each type of installation and instrumentation (such as treatment components) marked. Information on structures partitioning the areas, exit doors, material(s) used for paving the floor, as well as landscaping (if applicable), should be indicated. Effluent discharge/air emission points, if any, should be shown in the plan. Facilities for handling residues of the treatment and recycling process should also be shown. Information on the material(s) of the walls and roofs of the building structures should be provided.

a.4 Include a layout plan of fire safety installations and equipment. Locations of street fire hydrants for the facility, either within or outside the site boundary, should be shown. Apart from the fire safety installations and equipment [such as street fire hydrant, hose reel system, sprinkler system, fire extinguisher(s), fire alarm system, emergency lighting, directional and exit sign(s)], the locations and size of water tank(s) for street fire hydrant, hose reel system and sprinkler system should also be clearly marked on the plan.

Requirements and points to be noted

a.5 The mechanical plant, machinery, equipment and treatment processes in connection with the e-waste treatment, reprocessing and recycling operation shall all be operated indoor or in a structure with four walls on paved ground and a roof. The structure shall be designed to withstand rain, sunlight and extreme weather conditions, including storms and typhoons. The layout and settings should not obstruct any emergency escape route and comply with the requirements of Fire Services Department.

a.6 For standalone storage area, it should have a roof and be enclosed on at least three sides by a wall, partition or fence with a height of not less than two metres or the total height of e-waste in stack, whichever is less. Suitable materials for the construction of the enclosures include concrete, brick, and steel with protective coating or treatment. The storage method should prevent the release of any harmful material due to leakage or damage of the e-waste.

a.7 The areas used for the storage, handling, treatment and disposal of e-waste shall be paved with impermeable floor made of suitable material, such as concrete and steel plates, to withstand normal abrasion and chemical action of any e-waste and to avoid land contamination.

a.8 Drainage with adequate capacity shall be provided to prevent the discharge of large quantity of pollutants due to flooding of the site, buildings and operations therein. Where flooding of the area is likely, the floor area should be raised, for example by adopting a raised platform design.

a.9 Installation of surface runoff interceptor and/or sedimentation tank to capture the first flush of the paved open space and/or surface water, for either local treatment or off-site disposal, is required.

a.10 For fire safety requirements, reference should be made to guidelines issued by the Fire Services Department.

(b) The e-waste reception arrangements

b.1 Out of the ten types of e-waste (air conditioners, refrigerators, washing machines, dehumidifiers, tumble dryers, televisions , computers, printers, scanners and monitors), specify which types of e-waste are intended to be received and handled in the facility. Specify whether the e-waste involved is collected locally or imported from regions/countries outside Hong Kong, and, if imported waste is involved, identify the state(s) of origin.

b.2 State the e-waste handling procedures, equipment, receptacles deployed to convey the e-waste received from the reception point to the storage areas. Procedures to deal with the arrival of e-waste not covered by the licence should also be included. If imported waste is involved, the procedures on how to deal with unacceptable e-waste (such as returning to its state of origin) should be included.

Requirements and points to be noted

b.3 E-waste handling procedures should include registration of delivering vehicles, weighing of e-waste at reception area, subsequent procedures to transfer e-waste, unloading equipment, any manual handling or conveyor belt, etc.

b.4 Permit is required for import of e-waste into Hong Kong. Applicants should note that issuance of a permit for import of e-waste will only be considered if the e-waste is imported for reuse, or for a reprocessing, recycling or recovery operation and that the waste is required as a raw material for reuse or such operation in Hong Kong. The applicant must also demonstrate that the e-waste will be managed in Hong Kong in an environmentally sound manner. Purposes for the import and detailed operation in handling the imported e-waste must be provided and justified. For instance, importing e-waste for pre-processing and dismantling only is unlikely meeting such criteria. Any additional process (e.g. e-waste treatment involving resource separation and recovery processes) should be detailed in the application and operation plan. Moreover, import of waste listed under Schedule 7 of the WDO (including any chemical waste) from any state or party listed in Schedule 9 of the WDO (Annex I) is prohibited.

(c) Containers, receptacles and storage areas used for the storage of materials and e-waste to be processed at the facility

c.1 Detail the type, quantity and size of containers, receptacles and storage areas for storing each type of e-waste. Give the location and details (including material and height of partition, ventilation device(s) installed, etc.) of all storage area(s) for e-waste. For details on the packaging and storage of e-waste and chemical waste generated from processing of e-waste, please refer to Annex II.

Requirements and points to be noted

c.2 Adequate ventilation should be allowed by leaving some space between the top of the enclosure walls and roofed structure, or provision of louvers on the sides of the enclosure walls of storage areas.

c.3 The stacking of e-waste is allowed provided that:

(i) there are suitable structures, such as enclosure walls or partitions, properly designed cages or receptacles, to ensure safe and stable storage;

(ii) the stacking of e-waste is made secure so as to prevent falling down of waste or items; and, as a general rule, the maximum height of stacking should be limited to no more than 3 metres, unless proven otherwise; and

(iii) the storage method shall prevent the release of any harmful material due to e-waste damage and/or leakage.

(d) The operating procedures for the facility including flow diagrams and the recycling rate

d.1 State the design throughput of the plant and the likely e-waste intake pattern (e.g. normally at a certain tonnage each day). The maximum daily and annual handling capacity, treatment processes involved (dismantling, shredding, means of material separation), as well as the recycling rate of each e-waste type (including the types and quantities of recyclable materials produced) and of the whole facility should be provided. The information should include design flow and relevant safety factors etc. Calculations to support that the proposed treatment processes are adequate to treat the e-waste and recycle the e-waste at a recovery rate of no less than 80% by weight should also be included. A higher recycling rate is required for facilities treating imported e-waste to reduce potential pollution nuisance and disposal burden to the local environment. A maximum storage capacity of e-waste should also be specified.

d.2 Describe the details of operating procedures of all treatment and recycling processes carried out in the facility. Submit a schematic flow diagram with all the treatment components involved. The installations/components should be shown with actual connection to each other indicating the flow from e-waste intake, treatment and recycling, to waste disposal. The flow diagram(s) should be supplemented with details of each component's function.

Requirements and points to be noted

d.3 If the facility will also treat electronic waste (e.g. electrical fan, microwave oven,

hi-fi) other than the e-waste, the e-waste must be separately treated and reported for calculation of the recycling rate.

d.4 If the facility will treat both imported and locally collected e-waste, e-waste imported and locally collected must be reported separately for calculation of the recycling rate (viz. two recycling rates to be reported).

d.5 If different types of e-waste are treated together (e.g. the facility treats both computers and scanners), the materials produced (e.g. ferrous metal) can be reported together for calculation of the recycling rate.

d.6 The recycling rate to be achieved by the operation should be calculated as follow:

$$\frac{\text{Weight of items/materials generated from the e-waste being reused + recycled + exported}}{\text{Total weight of e-waste received}} \times 100\%$$

Items/materials taken to the Chemical Waste Treatment Centre, landfills or similar facilities for destruction locally or overseas will not be counted as recycling.

d.7 Some operational considerations for specific types of e-waste are highlighted below. In general, parts containing hazardous materials, such as waste printed circuit boards (PCBs), mercury switches and batteries, should be removed and segregated at the initial steps. These are classified as chemical waste and should be handled, stored and disposed of in accordance with the relevant legal requirements.

(i) Air conditioners/Dehumidifiers/Tumble dryers

- Sorting of air conditioners/dehumidifiers/tumble dryers according to types of refrigerants used should be conducted to facilitate subsequent handling.

- Refrigerants and compressor oil should be removed without leakage to the environment, and an extraction system should be used for the recovery of refrigerants.

- During the recovery of refrigerants, all hoses should be properly connected and a suitable apparatus with automatic stop function should be used, or a suitable weighing device should be used to monitor the total and increased weights of the container.

- Some types of refrigerants are flammable, such as liquefied petroleum gas (LPG) and ammonia, and corresponding safety precautionary measures should be taken.

- If the refrigerant gas is LPG[2] defined under Gas Safety Ordinance (Cap. 51), the importation, manufacture, storage, transport, supply and use of the gas shall be controlled under Gas Safety Ordinance (Cap. 51).

- Other than LPG, unwanted refrigerants in the form of compressed gas are classified as Dangerous Goods (Class 2) and chemical waste, and should be handled, stored and disposed of in accordance with the relevant legal requirements.

(ii) Refrigerators

- Sorting of refrigerators according to types of refrigerants used should be conducted to facilitate subsequent handling.

- Refrigerants and compressor oil should be removed without leakage to the environment, and an extraction system should be used for the recovery of refrigerants.

- During the recovery of refrigerants, all hoses should be properly connected and a suitable apparatus with automatic stop function should be used, or a suitable weighing device should be used to monitor the total and increased weights of the container.

- The cabinet should be shredded within an enclosed system under negative pressure. Shredding of hydrocarbon cabinets should only take place under controlled conditions to avoid explosions.

- Insulation foam (such as polyurethane foam) containing blowing agents should be properly removed and handled to avoid emission of ozone depleting substances to the environment.

- Some types of the refrigerants are flammable, such as LPG and ammonia, and corresponding safety precautionary measures should be taken.

- If the refrigerant gas is LPG defined under Gas Safety Ordinance (Cap. 51), the importation, manufacture, storage, transport, supply and use of the gas shall be controlled under Gas Safety Ordinance (Cap. 51).

[2] LPG means any gas which is a mixture of –
(a) Hydrocarbons primarily consisting of butanes, butylenes, propane or propylene, or
(b) All or any of the hydrocarbons referred to in paragraph (a).

- Other than LPG, unwanted refrigerants in the form of compressed gas are classified as Dangerous Goods (Class 2) and chemical waste, and should be handled, stored and disposed of in accordance with the relevant legal requirements.

- The concentration of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) or hydrofluorocarbons (HFCs) should be monitored at appropriate locations of the facility.

(iii) Cathode Ray Tube TVs / Monitors

- Dismantling and shredding of cathode ray tube TVs/monitors will need to meet stringent requirements in respect to pollution prevention, including conducting the process within a designated enclosed room under negative pressure. This should be regarded as treatment of chemical waste. The subsequent recycling or disposal of the leaded glass should be detailed.

- Any residues resulting from broken cathode ray tubes before the processing of the items should be re-contained and segregated properly and be handled as chemical waste.

(iv) Flat panel display (FPD, viz. LCD, LED, plasma) TVs / Monitors

- Dismantling and shredding of FPD TVs/monitors should be detailed and regarded as treatment of chemical waste. The subsequent recycling or disposal of the glass should also be detailed.

(v) Printers

- Components and parts containing toner and/or ink, such as ink/toner cartridges, should be removed from printers. The subsequent recycling or disposal of these components/parts should also be detailed.

(vi) Scanners

- Mercury lamps removed from scanners are classified as chemical waste and should be handled, stored and disposed of as chemical waste.

(e) Contingency measures to tackle emergency incidents

e.1 Provide a full list of alarms and controls for the treatment and recycling processes.

e.2 Identify and state all potentially hazardous situations (in incident types) that may arise at the facility, and evaluate their possible consequences and detail actions to be taken to minimize and mitigate the adverse consequences. Common incident types include power or mechanical failure, adverse weather condition, release of hazardous materials, accidental spillages, fire etc. Include a flowchart to illustrate the procedures in handling emergency situations, and checklists for considering various options to mitigate/avoid serious consequences. Some examples of possible emergency response actions are given below in e.4.

e.3 State the names, post titles and phone numbers (office and home/mobile) of the persons who will be involved in coordinating or implementing the emergency response actions and/or clean-up.

e.4 Examples of Possible Emergency Response Actions

(i) Response to fire

- The emergency coordinator should activate the fire alarm by activating the break glass unit at the nearest manual fire alarm call point.
- Call the Fire Services Department at once by dialing 999.
- If feasible, stop the operation of the facility.
- Evacuate all staff inside the facility to a designated safe assembly place via the nearest available exit/staircase.
- If it is safe to do so, the staff inside the facility may try to put out the fire by using the nearest appropriate firefighting equipment.
- If the fire is out of control, all firefighting activities must be stopped and all personnel must evacuate from the facility immediately.

(ii) Response to major release of hazardous materials

- Call the Fire Services Department at once by dialing 999.
- Personnel discovering the occurrence of any major release of hazardous materials must alert any co-workers nearby and inform the emergency coordinator immediately.
- If feasible, stop the operation of the associated treatment process and evacuate people nearby.
- If it is safe to do so, the emergency coordinator should guide the staff concerned to confine the hazardous materials by using suitable equipment. If more than

one type of hazardous materials is released, they should be confined separately and handled one by one to ensure mixing does not happen.

- The hazardous materials should be cleaned-up and contaminated materials should be disposed of. If the hazardous material(s) is classified as chemical waste, it should be handled, stored, collected and disposed of in accordance with the relevant legal requirements.
- If the situation is out of control, all remedial actions must be stopped and all personnel must evacuate from the facility immediately.

Requirements and points to be noted

e.5 An emergency coordinator either stationed at the facility or be able to respond to an emergency by reaching the facility within a short period of time should be appointed, for handling and coordinating emergency response provisions as identified in the contingency and emergency response plan. The emergency coordinator should be conversant with all aspects of the contingency and emergency response plan, all operations and activities at the facility, the characteristics and location of e-waste handled, the location of all records within the facility, and the facility layout.

e.6 Provide a list of all emergency equipment at the facility.

Emergency equipment	**Quantity/No**	**Location**
Fire extinguishers		
Dustpan and brush/broom		
Sand/absorbent		
Mop and bucket		
Towel		
Spare containers for storing waste generated		
Scoop		
Tweezers/forceps		
Hand-operated/electrical pump		
Others (please specify)		

e.7 Detail any mechanism to alert the public in the vicinity. It is necessary to alert the public in the vicinity in the severe cases of fire or release/leakage of hazardous materials or chemical waste. Mechanism may include activation of alarms, calling the police/Fire Services Department etc. Emergency telephone directory of different government departments should be included.

e.8 State the containment, clean-up procedures and disposal of contaminated materials. If the hazardous materials released are classified as chemical wastes, they should be handled, stored and disposed of in accordance with the relevant legal requirements.

e.9 Hazardous materials released should not be flushed down the drain and every effort should be made to contain and recover the materials by various means. Workers responsible for the clean-up operation should be trained for the clean-up work and provided with proper handling and safety equipment.

e.10 State the reporting arrangement of any emergency case to the Authority.

e.11 In the case of fire or other emergency incident occurred, the Authority should be verbally informed of the incident immediately. Details/report of fire and other major incidents, including date/time, nature, scale of incident/extent of impact, emergency response actions taken etc., should be submitted to the Authority within 2 weeks.

e.12 State the frequency of regular emergency drill and post the emergency evacuation plan at prominent locations, e.g. emergency drill should be conducted at a frequency of not less than twice a year.

e.13 State the frequency of regular checking of the emergency equipment, e.g. emergency equipment should be checked at least once per year. For special equipment, the manufacturer's or supplier's recommendation should be followed.

(f) Arrangements for site pollution control and monitoring of possible emissions

f.1 State the location of effluent discharge/air emission points and sampling points, as well as noise measurement points. The points should be marked on a layout plan (can be marked in the plan in (a) above). The sampling points should be the points at which representative samples could be collected.

Requirements and points to be noted

f.2 Discharge standards will be incorporated in the disposal licence terms and conditions.

f.3 Include the frequency of monitoring, parameters to be tested for each sample and the remedial action to be taken in respect of non-compliance with the regulatory standards. The monitoring results, together with findings and remedial actions for non-compliance identified, should be submitted to the Authority on a regular basis. The discharge/emission should be monitored regularly for all the pollutants that may be present. Provide details of a 24-hour webcam monitoring system which continuously monitors the entrance, exit and key operation areas of the facility. In case of non-compliance with the regulatory standards, the treatment and recycling processes should be examined to check for any malfunctioning, and the facility should suspend operation until the non-compliance has been rectified.

f.4 Detail the submission requirements of annual report on site pollution control. The annual report should at least include (1) description and quantity of each type of e-waste treated, recycled or disposed of at the facility, together with the resulted recycling rates; (2) environmental compliance monitoring data; (3) any non-compliance with the

regulatory standards during the year, its cause and the remedial actions taken. An independent professional audit team should be commissioned to carry out the annual environmental audit of the facility

(g) Arrangements for the storage and disposal of treatment residues and by-products

g.1 Identify all treatment residues/by-products, including their type, form and quantity. These include materials to be provided to other suitable facilities for further treatment/recycling.

g.2 Give the location and details of storage area for the treatment residues/by-products. The location of the storage area should best be marked on a layout plan (can be marked in the plan in (c) above). The storage area should comply with relevant legal requirements if the residues/by-products are classified as chemical wastes.

g.3 Describe the collection and disposal arrangements, as well as the recording arrangements such as registration of vehicles, destinations and weighing of materials, for the treatment residues/by-products. If the residue is a chemical waste, it should be collected by licensed chemical waste collectors and disposed of at licensed chemical waste disposal facilities. Relevant trip tickets records shall be kept in accordance with legal requirements.

g.4 Detail the regular checks and measures taken to make sure that all recyclables/treatment residues/by-products are being properly treated/recycled/disposed of by the downstream contractors/re-processors. Relevant supporting documents (including business registration certificates from downstream contractors/re-processors, permission from the state of import, contractual documents requesting downstream contractors/re-processors on proper treatment/recycling/disposal of treatment residues/by-products) have to be provided.

(h) Site safety and security arrangements

h.1 Identify the site security provisions. Security measures (i.e. gates, locks, ban on entry for unauthorized persons, proper signages, etc.) should be provided at appropriate areas such as treatment and recycling processes, storage areas.

h.2 State the duties and general requirements for the safety officer with the particulars of safety officers as Annex to the operation plan. The requirements should include the minimum qualification and the years of relevant experience.

h.3 A list of safety equipment provided and its location.

Safety equipment	**Quantity/No**
Helmet	
Safety goggles	
Gloves	
Safety boots	

Protective clothing or overalls	
Face shield	
Ear plugs	
First aid kit	
Others (please specify)	

(i) Manning levels, and qualifications and experience of staff

i.1 Provide an organization chart showing the names and post titles of key employees responsible for the management of the facility in the plan. Attach their resumes as annex, covering their names, qualifications and relevant experiences. Provide the duty lists of these key staff.

i.2 Indicate the normal manning level to operate and maintain each treatment and recycling process of the facility.

i.3 Detail the relevant training for staff responsible for operating the e-waste treatment and recycling process, implementing environmental control and handling emergency situations.

Requirements and points to be noted

i.4 Those staff who are responsible for operating the e-waste treatment and recycling processes, implementing environmental control and handling emergency situations should receive relevant training, such as those relevant courses organized by the Hong Kong Productivity Council, Labour Department, Occupational Safety & Health Council etc.

(j) Site maintenance and quality assurance plan

j.1 State the details of the quality assurance plan. The assurance plan should include, but not limited to, the following: (1) plant and equipment repair/maintenance arrangements and schedule; (2) quality manual/guidance to be followed by operation personnel.

(k) Arrangements for keeping records

k.1 State the types of relevant record to be kept at the facility.

k.2 State what reports will be submitted to the Authority on a regular basis (quarterly and annually), and show the standard report format to be used for individual record. Report format should be clear, concise and informative.

Requirements and points to be noted

k.3 Records should include, but not limited to, the following:

(i) a description and the quantity (weight and number of pieces) as well as source of e-waste the facility imported from overseas and locally received, supporting documents (if imported from overseas, relevant import shipping documents and packing lists) to prove such information, as well as the corresponding vehicle registration no. of the delivery vehicles and container numbers;

(ii) the method and date of imported and locally received e-waste storage and/or disposal at the facility;

(iii) the locations where the imported and locally received e-waste were stored and disposed of within the facility;

(iv) a description and the quantity as well as destination of treated e-waste (including recyclables and other products), residues and by-products delivered off-site, supporting documents to prove such information, as well as the corresponding vehicle registration no. of the delivery vehicles and container numbers;

(v) liability insurance certificates;

(vi) maintenance records of plant and equipment;

(vii) inspection records and reports on mechanical failure or shutdown;

(viii) reports of any test run and re-test;

(ix) environmental compliance monitoring report;

(x) summary reports and details of all incidents submitted under the contingency and emergency response plan;

(xi) training records (including the qualifications obtained) of all serving and former employees in the past 3 years (except period before the facility was issued with a licence under the WDO).

k.4 Quarterly and annual reports should be submitted, which should summarise activities of the facility during the reporting period and include but not be limited to the following information:

(i) licence number and detailed particulars of the facility;

(ii) the period covered by the report;

(iii) a description and the quantity as well as source (if imported from overseas, relevant import shipping documents and packing lists) of e-waste the facility imported from overseas and locally received during the reporting period, and the corresponding vehicle registration no. of the delivery vehicles and container numbers;

(iv) the method of storage, treatment and disposal for each type of e-waste both imported from overseas and locally received;

(v) breakdown of throughput during the reporting period, including quantity imported from overseas and in-take locally, treated, recycled, disposed of for each type of e-waste;

(vi) a description and the quantity as well as destination of treated e-waste (including recyclables and other products), residues and by-products delivered off-site during the reporting period, and the corresponding vehicle registration no. of the delivery vehicles and container numbers;
(vii) a description and the quantity of e-waste and treated e-waste (including recyclables and other products), residues and by-products stored at the facility on the last day of the reporting period;

For annual reports, the following information is also required:
(viii) copies of the necessary licence, registration, exemption, etc. of the downstream contractors/re-processors that are issued by the relevant local or overseas authority(ies), findings of checkings and measures taken to ensure downstream contractors/re-processors to properly treat/recycle/dispose of the treated e-waste (including recyclables and other products) and relevant supporting documents (including the contractual documents);
(ix) environmental control and compliance monitoring data;
(x) the details of any contingency and emergency response action taken in the calendar year;
(xi) the details of any change or modification to the facility undertaken in the calendar year, and the relevant approval of the Authority; and
(xii) an environmental audit report by an independent professional audit team, including an audit report on recycling rate (for e-waste imported from overseas and locally generated respectively) prepared by a certified public accountant (practising) as defined by section 2(1) of the Professional Accountants Ordinance (Cap.50) who must not be an employee of the facility.

(l) Liability insurance, if any, to cover claims arising out of injuries to persons, properties and the environment which may result from the operations at the facility.

l.1 Provide copies of the certificates of relevant insurance policies, which include:

(i) Employees' Compensation Insurance;
(ii) Third Party Liability Insurance for the facility; and
(iii) All Risk Insurance for the facility.

Indicate the insured amount, validity period and other conditions of insurance policies.

Requirements and points to be noted

l.2 The operator should possess liability insurance to cover claims arising out of injuries to person, property and the environment which may result from the operations at the facility.

l.3 Renew all insurance policies before their expiry. Submit copies of renewed policies to the Environmental Protection Department within 30 days of renewal.

Environmental Compliance Division
Environmental Protection Department
July 2024

Annex I

List of States or Parties under Schedule 9 of Waste Disposal Ordinance

Import of chemical waste and/or waste listed under Schedule 7 of the WDO shall not be exported from the following states or parties

Australia
Austria
Belgium
Canada
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Italy
Japan
Latvia
Liechtenstein
Lithuania
Luxembourg
Malta
Mexico
The Netherlands
New Zealand
Norway
Poland
Portugal
Slovak Republic
Slovenia
South Korea
Spain
Sweden
Switzerland
Turkey
The United Kingdom of Great Britain and Northern Ireland
United States of America

and any other state, or party to the Basel Convention, that is a member of
(a) the Organization for Economic Co-operation and Development; or
(b) the European Union

Annex II

Guidelines on Packaging and Storage of E-waste and Chemical Waste Generated from Processing of E-waste

This Annex gives detailed guidelines on the requirements with respect to packaging and storage of E-waste and chemical waste generated from processing of E-waste. Recyclers and applicants should make reference to it in preparing the operation plans and in complying with the terms and conditions of WDLs.

a) General

In general, container materials for packaging e-waste which can be softened or rendered brittle or likely collapsed during storage or transport should not be used, and any containers used for packaging of E-waste should be in good and robust conditions and free from corrosion, contamination, damage or any other defects which may impair the performance of the container. However, the packaging and storage requirements of chemical waste is more stringent than those of E-waste due to the hazardous nature of the former.

b) Packaging and storage requirements for regulated E-waste (air conditioners, refrigerators, washing machines, dehumidifiers, tumble dryers, computers, printers, and scanners) which is not chemical waste

E-waste is bulky and is mostly intact. During transfer or storage of E-waste, it is usually placed in suitable cages or other receptacles. This arrangement as well as the placing of E-waste on pallets and made secured using wrapping films or strips are generally acceptable.

Figure 1 - Waste refrigerators on pallets and bundled with plastic films

Figure 2 – Waste air conditioners and computers kept in metal cages

For storage, E-waste of the same type should be placed in the same area and storage of different types of E-waste by separate compartments or areas is always preferred. If stacking is needed, suitable structures, such as enclosure walls or partitions, properly designed cages or receptacles, should be provided to ensure safe and stable storage. The stacking of E-waste should be made secure to prevent falling down of items; and, as a general rule, the maximum height of stacking should be limited to no more than 3 metres, unless otherwise proven to be safe. The storage method e.g. installation of tray/catchment shall prevent the release of any harmful material due to E-waste damage and/or leakage. Storing E-waste inside cargo containers is also an acceptable arrangement.

Every E-waste storage area shall have a notice or marking displaying the words "E-WASTE 電器廢物" at or near the entrance or opening of the storage area.

The English word "E-WASTE" and Chinese characters "電器廢物" should be conspicuous in red on a white background with each letter/character size of not less than 60 mm in height. The notice or marking should be securely attached to or worked on a vertical plane of the storage structure, be weather resistant and rigid, and be kept clean and free from obstruction.

c) Packaging and storage requirements for E-waste (televisions and monitors - typically cathode ray tube TVs/monitors and flat panel display TVs/monitors) which is classifiable as chemical waste

The packaging, labelling and storage of chemical waste (including E-waste which is classifiable as chemical waste, waste flat panel displays, waste lead acid batteries and waste PCBs), should comply with the requirements of Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). Waste Producers are advised to consult the "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" which provides guidance for waste producers on how to comply with the legal requirements. Full details are readily available in the following link and some key points are also highlighted here.

(https://www.epd.gov.hk/epd/sites/default/files/epd/gn_pdf/GN2014P215-e.pdf)

Figure 3 - Cage with plastic wrap and cover for containing waste monitors. Tray and catchment should be installed for receiving leakage/falling parts.

Figure 4 – Chemical waste label for flat panel displays (televisions and monitors)

For E-waste which is classifiable as chemical waste (typically, cathode ray tube TVs/monitors and flat panel display TVs/monitors), it should be packed and held in containers or receptacle of suitable design and construction so as to prevent the release of any harmful materials due to E-waste damage and/or leakage during handling, storage and transport. Every container of the e-waste should be securely closed or sealed, correctly placed and kept clean. This could be achieved by using wrapping plastic sheets or suitable covers. Each container of the e-waste should bear an appropriate chemical waste label (see Figure 5).

The storage area should be enclosed (with cover to prevent exposure to different weather conditions) on at least three sides by a wall, partition or fence with a height of not less than two metres or the total height of containers in stack, whichever is less.

d) Packaging and storage requirements of chemical waste generated from processing of E-waste

A few types of chemical waste, such as waste refrigerants, waste PCBs, waste oils, waste mercury lamps and waste batteries, are commonly generated in the processing of E-waste. The legal requirements as stated in paragraph c) above are applicable. Take

for example, for waste PCBs produced during the pre-processing and dismantling of regulated E-waste, they could be stored in properly sealed jumbo bags (with inner and outer bags design), plastic drums, or other suitable containers so that the release of harmful materials could be prevented. Tough jumbo bags are commonly used for holding waste PCBs as they can carry large quantities or volumes of waste PCBs. A chemical waste label should be attached onto the container of waste PCBs.

For certain waste types (e.g. spent refrigerants, waste oils and waste mercury lamps) that are acceptable for treatment at the Chemical Waste Treatment Centre ("the Centre"), waste producers may also approach the contractor of the Centre to obtain suitable pre-labelled containers or drums to contain and store up their waste.

e) Mixed storage of E-waste and chemical waste

Mixed storage of E-waste and chemical waste should be avoided. Mixed storage of incompatible wastes are not allowed, for instance, spent refrigerant which is within the meaning of Dangerous Goods under the Dangerous Goods Ordinance (Cap. 295) should be stored separately from other waste. Waste oil should be kept in storage area with retention structure to guard against potential leakage of liquid oil. Particular attention should be given to maintain good fire safety measures in the storage areas.

Figure 5 - Chemical waste label for waste PCBs

Figure 6 – Sealed jumbo bags commonly used for waste PCBs

Figure 7 - Plastic drum (with lid) is acceptable for waste PCBs