



Distr.: General
22 March 2016
English only

**Open-ended Working Group of the Basel Convention
on the Control of Transboundary Movements of
Hazardous Wastes and Their Disposal
Tenth meeting**

Nairobi, 30 May–2 June 2016

Item 3 (d) (i) of the provisional agenda**

**Matters related to the work programme of the
Open-ended Working Group for 2016–2017:
international cooperation and coordination:
Basel Convention Partnership Programme**

Documents developed by the Partnership for Action on Computing Equipment

Note by the Secretariat

1. As referred to in the note by the Secretariat on Partnership for Action on Computing Equipment (PACE) (UNEP/CHW/OEWG.10/9), the annexes to the present note set out the following documents developed by the Working Group of the PACE to complete some of the outstanding tasks from the 2014–2015 work programme:
 - (a) Annex I: draft revised section 3 of the guidance document on environmentally sound management of used and end-of-life computing equipment set out in document UNEP/CHW.11/6/Add.1/Rev.1 and proposed additional changes to ensure consistency of the text throughout the guidance document;
 - (b) Annex II: draft concept for a follow-up partnership to the PACE;
 - (c) Annex III: manual on steps to establish and implement the environmentally sound management of used and end-of-life computing equipment.
2. The present note, including its annexes, has not been formally edited.

* Reissued for technical reasons on 24 March 2016.

** UNEP/CHW/OEWG.10/1.

Annex I

Draft revised section 3 and proposed changes to other parts of the guidance document on environmentally sound management of used and end-of-life computing equipment

In accordance with paragraph 6 (a) of decision BC-12/12, the Working Group of the Partnership for Action on Computing Equipment prepared the draft revised section 3 of the guidance document on environmentally sound management of used and end-of-life computing equipment (UNEP/CHW.11/6/Add.1/Rev.1) as follows:

“3. Transboundary movement of used and waste computing equipment

3.1 Summary

3.1.1 Regarding the transboundary movement of used and waste computing equipment, it is referred to the technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention (document UNEP/CHW.12/5/Add.1/Rev.1) which were adopted on an interim basis, in decision BC-12/5, at the twelfth meeting of the Conference of the Parties to the Basel Convention. In addition, this section contains guidance specific to the transboundary movement of used and waste computing equipment

3.2 Recommendations

3.2.1 Consistent with the PACE guidelines and report on ESM criteria, each importing country should take measures to establish appropriate infrastructure to ensure that waste computing equipment is collected and recycled in environmentally sound facilities, either within or outside the country.

3.2.2 Used computing equipment is sufficiently packaged if the packaging guidelines set out in appendix III are followed.”

In addition, the Working Group proposed the following changes to ensure consistency of the text throughout the guidance document:

1. Section 1.1.3

Revise the section as follows:

“The document complements guidelines prepared by various project groups and approved by the PACE Working Group. It summarizes the information provided in the report prepared by the ad interim project group on environmentally sound management criteria recommendations and guidelines prepared by project groups 1.1 (environmentally sound testing, refurbishment and repair of used computing equipment) and 2.1 (environmentally sound material recovery and recycling of end-of-life computing equipment).”

2. Section 4.2.3.2

Revise the section as follows:

“Documentation for used and refurbished or repaired equipment should certify the testing performed on the equipment to verify that it is in working condition and is fit for its intended end use (appendix VII).”

3. Section 4.2.3.3

Delete the section.

4. Appendix I, Glossary of terms

Delete the following 7 terms and their descriptions: Charitable donation; Engineered landfills; RoHS; Remarketing; Segregation; States concerned; WEEE Directive.

5. Appendix III, Packaging guidelines

(a) Delete paragraph 1.

(b) Revise the first sentence of paragraph 2 as follows:

“For shipments,^{xxvii} the following packaging guidelines should be followed to sufficiently pack used computing equipment:”

6. Appendix IV, (a) Voluntary notification procedure and (b) Decision tree procedure

Delete the appendix.

7. Appendix V, Functionality tests for used computing equipment

(a) Revise the test results of laptop battery for “Laptop/notebooks” as follows:

Computing equipment	Functionality tests	Test results
Laptops/notebooks	<p>Power on self test (POST)² Switching on the laptop and successfully completing the boot-up process. This will confirm that the principal hardware is working, including power supply and hard drive.</p> <ul style="list-style-type: none"> • Test screen. • Test battery functionality. • Ensure that the display is fully functional. • Ensure that cooling fan(s) is(are) functional. 	<p>Laptop should boot up successfully. Laptop should respond to keyboard and mouse input. Display should turn on during boot up. Image should be clear and colours, contrast and brightness correct with no screen-burned images, scratches or cracks (see also below for display devices). Laptop battery should retain a minimum of 1 hour³ of run time; alternatively the battery should be tested to determine that it has a full charge capacity in watt-hours of at least one hour (see appendix VI, testing of laptop batteries).</p>

(b) Revise footnote 3 as follows:

“One hour is the minimum charge that a battery should hold, although some laptop users may request more usable run-time. It should be noted that some end-users will also be able to make use of batteries with less capacity, for example a battery able to hold 40 minutes capacity, which could be adequate if the laptop is normally connected to a reliable electricity supply.”

8. Appendix VI, Testing methods for laptop batteries

(a) Revise paragraph 1 as follows:

“This is the most commonly used method and represents a simple test, able to be undertaken by all refurbishers. The system/battery combination is tested to ensure that it can hold an appropriate charge⁵ to meet the minimum run-time charge. The laptop battery should be inserted into the laptop and then fully charged. The system⁶ should be started with the screensaver disabled and allowed to run functions to demonstrate the capability of operating off the power grid. The time for the battery to drain fully is recorded.”

(b) Revise footnote 5 as follows:

““Hold an appropriate charge” means that a battery, when used in a particular system, is capable of powering the system for a time period that meets the needs of a target user. “Time period that meets the needs of a target user” is the end-user expected operational time for the mode of operation expected. One hour is the minimum charge that a battery should hold, although some laptop users may request more usable run-time. Users may also be able to make use of batteries with less capacity, for example when using a computer system predominantly connected to the grid, with the battery serving as a backup to allow the work product to be saved in the event of a power outage.”

(c) Delete footnote 9.

9. Appendix VII, Declaration of testing and determination of full functionality of used computing equipment

Revise the appendix as follows:

Information to be provided on testing

Holder (responsible for testing): Name: Address: Tel.: E-mail:					
Declaration: I, the legal holder of the used computing equipment listed below, hereby declare that the used computing equipment, listed below, was tested after it was removed from service, or after it was repaired/ refurbished, and is in good working condition and fully functional. ¹ Name: _____ Date: _____ Signature: _____					
Type of equipment ²	Model No.	Serial No. (if applicable)	Year of manufacture	Date of testing	Type of tests and comments

¹ **Fully functional/Full functionality: Computing equipment or components** are “fully functional” when they have been tested and demonstrated to be capable of performing the essential key functions that they were designed to perform. **Essential Key Function:** The originally intended function(s) of a unit of equipment or component that will satisfactorily enable the equipment or component to be reused.

² List all equipment and identify types of whole equipment, such as PC, laptop, printer and scanner. Component parts, such as circuit boards, memory, hard drives, power supplies or batteries, can be sent in a batch without the details required in columns 2 and 3 but still will need to be tested.

10. Appendix VIII, Information accompanying shipments of computing equipment returned under warranty or otherwise excluded from control procedures

Delete the appendix.

11. Appendix XIV, Endnotes

- (a) Delete endnotes xiii to xx and xxviii to xxix.
- (b) Revise endnote xxvii as follows:

“These provisions are in addition to applicable requirements under the United Nations Recommendations on the Transport of Dangerous Goods (i.e., UN Orange Book): Model Regulations, 18th revised edition, 2013, or later version.”

Annex II

Draft concept for a follow-up partnership to PACE

DRAFT



P A C E

Partnership for Action on
Computing Equipment

Follow-up Partnership to PACE
(exact title to be adopted at later stage)

March 8, 2016

Content:

- I. Introduction
- II. Partnership approach
 - A. Scope
 - B. Objective
 - C. Target groups
 - D. Stakeholders
 - E. Working principles and structure
- III. Partnership work programme for 2018-2019

Appendix I: Partnership work programme for 2018-2019

Appendix II: Basel Convention Regional and Coordinating Centres (BCRCs/BCCCs)

I. Introduction

1. A creative and innovative partnership, the Partnership for Action on Computing Equipment (PACE) has successfully advanced in laying the ground for significant steps towards achieving the environmentally sound management (ESM) of used and waste computing equipment which is one of the largest growing waste streams in the world today.

2. The PACE, launched in 2008 via COP decision IX/9 as a follow-up of the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste from COP8, was developed as a multi-stakeholder public-private partnership. It was based on the positive experience of the Mobile Phone Partnership Initiative (MPPI) which developed guidelines on the environmentally sound management of used and end-of-life mobile phones. Membership of the PACE working group and participation as invited experts is open to Parties and signatories to the Basel Convention, intergovernmental organizations and all other stakeholders, including manufacturers, recyclers, refurbishers, academia, public interest non-governmental organizations and Basel Convention Regional and Coordinating Centres (BCRCs/BCCCs) which have specific expertise and experience required for the activities of this group to tackle environmentally sound refurbishment, repair, material recovery, recycling and disposal of used and waste computing equipment. PACE delivered high value products, such as guidance documents, pilot projects, regional awareness raising and training workshops and a productive platform for multi-stakeholder dialogue. According to decision BC-12/12, the PACE working group has been requested to complete some outstanding tasks from the 2014-2015 work programme up to 2017.

3. Although PACE has contributed substantially to finding solutions, the challenges of achieving ESM of used and waste computing equipment are neither solved nor diminishing, on the contrary, they continue to grow. There are also up-stream challenges, taking into consideration a life cycle approach. These challenges have similarities with wider waste electrical and electronic equipment (WEEE or e-wastes) issues which are also on the rise.

4. There is an urgent need to bring action on the ground and to involve more industries, donors and other stakeholders into the implementation of concrete activities at regional and local level. It is proposed to establish a follow-up partnership to PACE with the aim to coordinate and strengthen the implementation of ESM for waste computing equipment as well as waste mobile phones and other WEEE, at the national and regional levels in developing countries and countries with economies in transition, taking into consideration a life cycle approach. The follow-up partnership should be supported by a working structure, similar to the one used by PACE and where necessary adapted to regional or local structures, but with a strong leadership involvement by the BCRCs and BCCCs and tapping into the capacities and experience of the centres and the already built PACE network.

II. Partnership approach

A. Scope

5. The follow-up partnership should cover strengthening the ESM of used and waste electrical and electronic equipment, at regional and national levels. In addition, a life cycle approach should be taken into consideration, including issues related to used electrical and electronic equipment; in this respect, duplication of work under SAICM in relation to the emerging issue of hazardous substances within the life cycle of electrical and electronic products¹ should be avoided.

6. The current momentum of ESM advances, e.g. within the Expert Working Group on ESM of the Basel Convention, calls for initiatives that are oriented towards action and provide practical solutions. The enforcement coordination initiatives to prevent illegal traffic, e.g. The Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic-(ENFORCE), also opens the opportunity to redirect informal sector activities related to e-wastes, while simultaneously advancing towards integrating informal operations and combating illegal transboundary movement of e-wastes.

7. PACE experience in promoting ESM of used and waste computing equipment and its multi-stakeholder platform will be tapped for advancing ESM on used and waste electrical and electronic equipment which is of relevance to the Basel Convention and to other conventions when looked at with a synergistic lens (e.g. Stockholm Convention in the case of brominated flame retardants, Montreal Protocol in the case of ozone depleting substances found in refrigerators, Minamata Convention in the case of mercury used in backlighting of screens). Moreover, in the case of developing countries and countries with economies in transition, considering economies of scale and the real risk of rapid expansion of crude material recovery practices, it could make sense to set up one WEEE ESM program which gradually grows on its coverage of post consumption items.

¹ See http://www.saicm.org/index.php?option=com_content&view=article&id=455&Itemid=708

B. Objective

8. To strengthen the ESM of used and waste electrical and electronic equipment, at regional, national and local levels, taking into consideration a life cycle approach.

C. Target groups

9. The follow-up partnership will capitalize the opportunity for expanding the reach of the work developed under PACE while at the same time be able to capture topics that are highly relevant to Parties of the Basel Convention and of other related chemicals and waste conventions, as well as to national, central and local governments, and other related stakeholders like original equipment manufacturers (OEMs), international organizations, associations and chambers, recoverers, recyclers, Non-Governmental Organizations (NGOs) and academia where the value added of PACE can be tapped to support implementation, knowledge and information sharing and experience exchanges.

D. Stakeholders

10. The follow-up partnership focuses on developing a multi-stakeholder partnership, including OEMs, the International Telecommunication Union (ITU) and its counterparts at the regional and national levels, as well as bilateral and multilateral agencies, academia and NGOs, led by the BCRCs and BCCCs (see Appendix II).

E. Working principles and structure

11. The follow-up partnership will focus on activities at the national and regional levels, which cannot be carried out alone by the Secretariat of the Basel Convention (SBC). Nonetheless, it is also clear that the partnership will continue to require an important global coordination role towards facilitating the strengthening of information and experience sharing and discussion on emerging issues within the wider WEEE agenda.

12. The follow-up partnership will make the best possible use of the ESM guidelines developed within the framework of the Basel Convention, in particular those developed by MPPI and PACE and the ESM Expert Working Group, and will implement activities as referred to in section 3.

13. A two-tier approach for the organizational structure of the partnership is proposed:

(a) A global coordination group to facilitate information and experience exchange and discussion on emerging issues, led under the BCRCs/BCCCs and facilitated by the SBC;

(b) Regional coordination groups to facilitate the implementation at the regional, sub-regional or national level, under the responsibility of BCRCs/BCCCs, facilitated by a global implementation secretariat served by one BCRC/BCCC that rotates biannually. This global implementation secretariat, besides supporting implementation will facilitate the setting of South-South exchange and will seek in coordination with the Secretariat of the Basel Convention to set up standardized formats for BCRCs/BCCCs to report on their implementation advances and opportunities.

III. Partnership work programme for 2018-2019

14. A detailed partnership work programme for 2018-2019 is included in Appendix I. The work programme includes activities on information exchange, training, stakeholder dialogues, support of national activities, life-cycle approach and awards.

Appendix I: Partnership work programme for 2018-2019

<i>Activities</i>	<i>Timeline</i>	<i>Expected Outputs</i>	<i>Responsible</i>	<i>Priority (to be set at later stage)</i>
Information exchange				
a) Distribute the MPPI and PACE guidelines, as toolkit, at the regional and national levels, including their translation to national languages	1st quarter 2018	<ol style="list-style-type: none"> 1. MPPI and PACE guidelines are translated into national languages 2. MPPI and PACE guidelines are distributed in all countries in the Asia/Pacific, Africa, Central and Eastern Europe (CEE), Latin America and Caribbean (LAC) regions 	All BCRCs/BCCCs	
b) Disseminate the document “Manual of steps to establish and implement ESM of used and waste computing equipment” and the report on “Strategies, actions and incentives to promote ESM of used and waste computing equipment” as supporting documents for projects at regional and national levels	1st quarter 2018	Documents and reports are distributed to relevant partners as supporting documents for regional and national projects at regional and national levels in the Asia/Pacific, Africa, CEE, LAC regions	All BCRCs/BCCCs	
c) Set up an information sharing web portal which provides and disseminates up to date information on expertise and knowledge available and ongoing activities, business models and producer responsibilities systems to the ESM of waste mobile phones and computing equipment and other WEEE in different regions of the world, taking into account other relevant work on ESM, e.g. work carried out under the ESM expert group under the Basel convention and supplementing existing information systems of the Regional Centres, ENFORCE, the United Nations Environment Programme (UNEP) and other related networks	1st -2nd quarter 2018	Information sharing web portal is set up	BRS Secretariat	

<i>Activities</i>	<i>Timeline</i>	<i>Expected Outputs</i>	<i>Responsible</i>	<i>Priority (to be set at later stage)</i>
d) Disseminate information on the establishment of national registers of obliged persons which is the basis for extended producer responsibility (EPR) applied to WEEE	1st – 4th quarter 2018	<ol style="list-style-type: none"> 1. Information on establishment of national registers of obliged persons is collected and summarized; 2. Information on the establishment of national registers of obliged persons is disseminated 	Coordinating BCRC/BCCC All BCRCs/BCCCs	
e)-Disseminate information on registered WEEE certification bodies in the different regions	3rd quarter 2018 – 4th quarter 2019	A system to disseminate information on registered WEEE certification bodies in the different regions is set up	1 BCRC in Asia/Pacific, 1 BCRC in CEIT, 1 BCRC/BCCC in Africa, 1 BCRC/BCCC in LAC	
Training				
f) Develop a tool kit, a workshop and training programme based on the MPPI and PACE guidelines and experience from MPPI and PACE, and other WEEE relevant materials, including a possible e-learning course, webinars in coordination with related e-waste regional and national projects	1st – 3rd quarter 2018	<ol style="list-style-type: none"> 1. 1 toolkit per region is developed 2. 1 training programme and other WEEE relevant materials, including a possible e-learning course, webinars are organized per region 3. 1 workshop per region is organized 	1 BCRC in Asia/Pacific, 1 BCRC in CEIT, 1 BCRC/BCCC in Africa, 1 BCRC/BCCC in LAC	
g) Organize national workshops or trainings in national language(s) as appropriate with participation of national stakeholders from governments, public or private sectors, NGOs and other national and international organizations, associations and chambers	4 th quarter 2018 – 4 th quarter 2019	Up to 4 national workshops or trainings per region are organized	All BCRCs/BCCCs	

<i>Activities</i>	<i>Timeline</i>	<i>Expected Outputs</i>	<i>Responsible</i>	<i>Priority (to be set at later stage)</i>
Stakeholder dialogues				
h) Organize regional and national dialogues on ESM of WEEE, bringing together among others government representatives of environment, customs, health, labor, telecommunication, transport, economics and trade ministries, departments and agencies ; as well as related stakeholders from the private sector, academia and NGOs and other national and international organizations, associations and chambers	1 st quarter 2019 – 4 th quarter 2019	1. Each BCRC/BCCC has organized 1 regional dialogues on ESM of WEEE 2. Each BCRC/BCCC facilitates the organization of up to 4 national dialogues on ESM of WEEE	1. All BCRCs/BCCCs 2. All BCRCs/BCCCs in cooperation with national authorities	
i) Facilitate donor round tables and contacts with funding institutions, foundations and investment partners in support of programmes, projects and initiatives on ESM of WEEE at regional and national levels	1st – 2nd quarter 2018; 1st – 2nd quarter 2019	1. Each BCRC/BCCC has organized 1 donor round table at regional level 2. Each BCRC/BCCC has facilitated the organization of up to 4 national round tables	All BCRCs/BCCCs in cooperation with national authorities and donors	
Support of national activities				
j) Assist initiatives on the inclusion of ESM of WEEE as part of the national development plans (mainstreaming) and strategies, e.g. on the development of legal and enforcement systems for ESM of WEEE, the implementation of the electronic notification for the Prior Inform Consent (PIC) procedure, public procurement, building of systems of registered WEEE certification bodies, the infrastructure for collection systems, dismantling and refurbishment facilities and EPR schemes, development of partnerships of stakeholders based on the PACE model, promotion of public awareness programmes, activities and events.	4th quarter 2018 – 4th quarter 2019	Each BCRC/BCCC has established cooperation with up to 4 national projects and supported the inclusion of ESM of WEEE into the national development plans and strategies	All BCRCs/BCCCs in cooperation with national project partners	

<i>Activities</i>	<i>Timeline</i>	<i>Expected Outputs</i>	<i>Responsible</i>	<i>Priority (to be set at later stage)</i>
Life-cycle approach				
k) Organize international, regional and/or national stakeholder workshops on the life cycle of EEE (while seeking synergies with the work under SAICM), bringing together concerned stakeholders from the private sector, such as designing, producing and recycling industries, consumer organizations, academia and NGOs and other national and international organizations, associations and chambers, as well as among others government representatives of environment, but also energy, health, labor, telecommunication, transport, economics and trade ministries, departments and agencies;	1st quarter 2019	1 international workshop + 1 follow-up workshop are organized	Specific project group of the partnership	
Awards				
l) -Establish an international, a regional and/or national award on ESM of used and waste EEE, taking into consideration a life cycle approach, including material extraction, design, production, use, reuse, refurbishment, repair, recycling, material recovery	1st quarter 2019	1 international, 1 regional and/or 1 national award is/are established.	Coordinating BCRC/BCCC	

Appendix II: Basel Convention Regional and Coordinating Centres (BCRCs/BCCCs)

1. The Basel Convention benefits from a network of fourteen Regional and Coordinating Centres for Capacity Building and Technology Transfer (BCRCs/BCCCs). The Basel Convention has set up a regional network of autonomous institutions which operates under the authority of the Conference of the Parties, the decision-making organ of the Convention, composed of all the countries party to the Convention.
2. The BCRCs/BCCCs are established under two types of agreement: by being hosted in an inter-governmental institution or by vesting a national institution with a regional role to support countries within a region in their implementation of the Convention.
3. The BCRCs/BCCCs deliver training, dissemination of information, consulting, awareness raising activities and technology transfer on matters relevant to the implementation of the Basel Convention and to the ESM of hazardous and other wastes in the countries they serve. The specific activities are training workshops, seminars, pilot projects on the management of priority waste streams, the production of information material and guidelines.
4. The Centres are located in the following regions:

Africa and West Asia:	Egypt Nigeria Senegal South Africa
Asia and Pacific:	China Indonesia Islamic Republic of Iran South Pacific Regional Environment Programme (Samoa)
Central and Eastern Europe:	Russian Federation Slovak Republic
Latin America and the Caribbean:	Argentina El Salvador Trinidad and Tobago Uruguay
5. Each Centre services several countries in its respective region and has a Steering Committee which is composed of members of the Centre's host country and of the countries served by the Centre.
6. BCRCs/BCCCs website: <http://www.basel.int/Partners/RegionalCentres/Overview/tabid/2334/Default.aspx>

Annex III

Manual on Steps to Establish and Implement Environmentally Sound Management for Used and Waste Computing Equipment

Introduction

The purpose of this manual is to provide governments and companies with an overview of the essential elements to establish, maintain and strengthen the environmentally sound management (ESM) of used and waste computing equipment being collected, refurbished, repaired, recycled, and recovered.

The manual outlines practical steps necessary at the national level to establish and implement ESM for used and waste computing equipment. The document is for use particularly in countries where ESM is not fully established with the intention to support governments and industries in their process of implementing ESM. ESM can ultimately only be achieved when any sector, including the informal sector, complies with all applicable legislation, requirements and standards.

Five steps for governments:

Step 1: Assess the current realities at national level

The objective of step 1 is to assess the current realities related to used and waste computing equipment to get a national overview of the situation in your country, including baseline estimates of e-waste flows and practices in order to have all the important elements from a government’s perspective to build an action plan / strategy.

<p>National and/or state or provincial legislative and regulative review</p>	<p><u>National legislative context:</u></p> <p>Does national and/or state or provincial legislation exist for solid and hazardous waste management in your country?</p> <p>Does it cover used and waste computing equipment?</p> <p>Are there any other pre-existing national laws and regulations that may be applicable to the various aspects of the ESM of used and waste computing equipment?</p> <p>Are there any related laws at the state or provincial level?</p> <p>Are national and sub national laws being enforced?</p> <p>Does any international or national technical directive on ESM of used and waste computing equipment exist?</p> <p>Does the country use any international standard or indicators to assess their used and waste computing equipment management techniques?</p> <p>Does the country implement any international standards to assist with the recovery of rare, strategic and precious metals from used and waste computing equipment?</p> <p><u>Domestic laws pertaining to exports, imports, and transits of used and waste computing equipment:</u></p> <p>Are there national laws that cover the import, transit, and export of used and waste computing equipment?</p> <p>Do the regulations vary for different types of shipments; e.g., repaired computers vs. unprocessed computers?</p>
------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>Are these laws being enforced?</p> <p><u>Multilateral environmental agreements (MEAs):</u></p> <p>Is the country party to the Basel, Rotterdam and/or Stockholm Conventions? Does the country follow the SAICM?</p> <p>If so, has your country transposed your legally-binding obligations under these agreements into your domestic laws (“enabling legislation”)?</p> <p>Is (Are) the enabling legislation(s) for these MEAs the same as the one(s) previously identified for dealing with used and waste computing equipment management?</p> <p>If not, do any specific conditions applicable to the ESM of used and waste computing equipment exist within the enabling legislation?</p> <p><u>Regional environmental agreements (REAs) regarding transboundary movements (export, import, transit) of used and waste computing equipment:</u></p> <p>Is the country a party to any regional waste and chemicals related MEA (e.g. Bamako Convention, Waigani Convention, Izmir Protocol, Central American Protocol)?</p> <p>Is (Are) the enabling legislation(s) for these REAs the same as the one(s) previously identified for dealing with used and waste computing equipment management?</p> <p>If not, do any specific conditions applicable to the ESM of used and waste computing equipment exist within the enabling legislation?</p> <p><u>Trade agreements:</u></p> <p>Is the country a signatory to any bilateral or other applicable trade agreement(s)?</p> <p>If yes, has your country transposed your legally-binding obligations under these agreements into your domestic laws (“enabling legislation”)?</p> <p>If yes, do any conditions apply to the transboundary movements of wastes, especially used and waste computing equipment?</p>
Stakeholder identification	<p>Identify all relevant stakeholders: For example all government agencies which play (or should play) a role in managing used and waste computing equipment, persons from government, collection centres, repair and refurbishing facilities, brokers, recycling/recovery facilities, solid waste and hazardous waste landfills (with and without liners and leachate controls), waste-to- energy incinerators, transporters, storage/transfer facilities, the informal sector, producers/manufacturers, distributors, importers, exporters, retailers, business association(s), research centres and universities, formal and informal disposal sites, waste generators (such as households and businesses), relevant international organizations, standards developing organizations, non-governmental organizations and any others who are dealing with used and waste computing equipment.</p>
Estimating volumes of used and waste computing equipment	<p>Try to estimate domestic flows, by quantity and type per year, of used and waste computing equipment¹:</p> <p>Estimate the volume of used and waste computing equipment that is <i>available</i> for reuse, recycling and recovery in your country annually.</p> <p>Estimate the volume that is currently being collected and reused.</p>

¹ See References UNU-IAS and Step e-waste world map: <http://www.step-initiative.org/step-e-waste-world-map.html>

	<p>Estimate the volume that is currently being collected and recycled and recovered.</p> <p>Estimate the volume going to legal final disposal.</p> <p>Estimate the volume going to landfills and for incineration, or other types of final disposal.</p> <p>Try to estimate the volume being illegally disposed of.</p> <p>Try to estimate the volume that is not disposed of in an environmentally sound manner.</p> <p>Estimate the volume that is imported and from which country(ies). Clarify if it is legal to import it from those countries.</p> <p>Estimate the volume that is exported and the destination.</p>
<p>Technical ability</p>	<p>Identify the existing infrastructures for managing used and waste computing equipment in your country, including existing collection, transportation, storage, refurbishment, recycling, and recovery facilities (such as metals refineries, plastics processors, glass processors, etc.), as well as non-hazardous waste landfills, incinerators (including waste to energy incinerators), and hazardous waste disposal facilities. Include domestic infrastructure, if any, for long term, monitored, and safe storage or treatment of hazardous materials in used and waste computing equipment, such as mercury, phosphors from CRT glass, polychlorinated biphenyls, etc.</p> <p>Identify all the fractions that will be created by recycling/recovery operations (including those needing further processing, those needing disposal, and those that may be ready for use as a direct feedstock into manufacturing new products), and determine what infrastructure exists in the country versus what will need to be exported to ESM downstream processors/disposal facilities.</p> <p>Identify the existing levels of skilled, trained workers for repairing used and waste computing equipment, safely recovering recyclable materials, and safely disposing of hazardous residuals. This should include an analysis of skilled, trained personnel and pollution control equipment to ensure worker's health and safety when repairing or recycling the equipment, as well as environmental protection, such as preventing air emissions, water run-off, and explosions.</p> <p>Identify which are the actual categories or scope of used and waste computing equipment in your country (such as IT, consumer electronics, medical, etc.) that are sent for reuse, repair, recycling, recovery, etc., and from which type of user or waste generator.</p> <p>Identify if there are any domestic companies certified to standards such as ISO 14001, ISO 9001, OHSAS 18001, or RIOS and R2, e-Stewards, or CENELEC, ITU-T L.1000, ITU-T L.1001, ITU-T L.1100 etc.</p> <p>Identify how the used and waste computing equipment used and waste computing equipment is recycled and what techniques and technologies are used.</p> <p>Identify how ESM is applied in facilities in your country managing used and waste computing equipment.</p> <p><u>International & National Technical standards and guidelines:</u></p> <p>Are any international standards and guidelines on the ESM of used and waste computing equipment being utilised in the local context?</p> <p>If yes, which ones are used? (e.g. Basel Convention including PACE, ITU, UNEP, OECD)</p>

	<p>If yes, are such standards and guidelines used by the private, the public sector or both? In what context are they used?</p>
Collection	<p>Is there a collection program for all types of used and waste computing equipment?</p> <p>If not, which types of used and waste computing equipment are collected in your country?</p> <p>Is there a cost to users to turn in their used and waste computing equipment?</p> <p>Are there public and / or private collection points that are convenient to the users and efficient for the collectors across the country? How many collection points are there in total and in terms of tonnages collected? Which areas of the country have adequate collection, and which do not?</p> <p>Is there any legal obligation(s) for businesses / importers to become collection points?</p> <p>Are any stakeholders responsible for taking back used and waste computing equipment?</p> <p>Are equipment manufacturers, importers or other stakeholders required to fund convenient collection systems?</p> <p>Is there a collection service for households, door to door? For which types of used and waste computing equipment? How does this service work? Is the service free to the consumer/user?</p>
Public awareness	<p>Is the general population aware about the environmental and health problems of mismanaging used and waste computing equipment?</p> <p>Are there educational programs on used and waste computing equipment in schools in the country?</p> <p>Are there any publicity activities regarding used and waste computing equipment?</p> <p>Are users/consumers committed to delivering used and waste computing equipment to collection points for free? Or are financial incentives necessary to motivate the consumer to deliver the used and waste computing equipment to collection points?</p>
Financing aspects	<p>How is the collection and appropriate repair, refurbishment, recycling, recovery, landfilling, and incineration of used and waste computing equipment financed in your country?</p> <p>Are there applicable landfill and incineration fees?</p> <p>Do consumers/citizens pay for solid and hazardous waste collection and disposal?</p> <p>Are there any additional funding mechanisms available in your country such as prepaid or advanced recycling fees, taxes, recycling funds or government incentives?</p> <p>What are the financial flows?</p> <p>How is the collection, recycling, recovery, landfilling and incineration of negative valued equipment, parts and fractions from used and waste computing equipment financed?</p> <p>Is there a domestic market for recycled material, such as commodity grade steel, copper, circuit boards, aluminium and plastic, in your country?</p> <p>Has any national, regional or international financing been provided for activities</p>

	<p>that support the ESM of used and waste computing equipment?</p> <p>Is there an Extended Producer Responsibility (EPR) legislation in place?</p> <p>Are there any government incentives for projects (eco design) or manufacture (green process) of environmentally friendly products?</p>
Project activities	<p>Has the country participated in any international or regional projects addressing the ESM of used and waste computing equipment and/or wastes?</p> <p>Are there any existing plans to be part of such projects?</p> <p>Have any key local stakeholders participated in any international or regional projects addressing the ESM of wastes and/or used and waste computing equipment?</p> <p>Are there any existing plans for key local stakeholders to be part of such projects?</p> <p><i>(N.B.: projects / project activities include technology transfer, training and public awareness initiatives among other activities)</i></p>
Others	<p>Are appropriate government agencies carrying out any kind of long term monitoring of occupational, social and environmental exposures and releases resulting from management / lack of management of used and waste computing equipment (e.g. releases of mercury, CRT phosphors, heavy metals, private data, etc.)?</p> <p>Is there a private or governmental data base to identify damage or quality indicators of the system and are data available?</p> <p>Has your country a forum in which to discuss the used and waste computing equipment problem with all stakeholders, Including industry, commerce, government, universities, research centres and users / consumers?</p>

Step 2: Collect existing information

The objective of step 2 is to provide information and examples about existing laws, regulations and guidelines concerning ESM of used and waste computing equipment to develop/improve national legislation based on the step 1 assessment.

Many legal systems and projects on ESM of used and waste computing equipment have already been developed and put in place in diverse countries. Also, several initiatives have been launched over the past few years so that a number of documentation and guidelines exist on this topic. It appears useful to have a look at the concepts and projects like pilots projects that have already been developed in others countries and other parts of the world. All the documented experience is a valuable source in order to get inspired to develop a ESM of used and waste computing equipment.

Information on the following topics should be collected:

- Collection;
- Recovery
- Recycling/Refurbishment;
- Transboundary movement (TBM), i.e. import, transit, and export; and border controls;
- Final disposal;
- Financing system, e.g. extended producer responsibility (EPR), advanced recovery fees (placed on the sale of new computing equipment), taxes, etc;
- Data security.

Relevant points to be observed by compiling information about already existing used and waste computing equipment management systems and international agreements are among others:

Which kinds of used and waste computing equipments are covered by the legislation?

Which obligation is set by the legislation and to whom it is dedicated?

How is the collection organized?

Which stakeholder is responsible to take back used and waste computing equipment?

Who has the obligation to dispose of?

What are the demands on disposal?

Which components of used and waste computing equipment have special requirements / obligations?

What is the financing model for the recycling of components of no value? Does the legislation prescribe for example a prepaid recycling fee or contribution?

(N.B.: Examples of international conventions, regional agreements and national legislations and other regulatory frameworks are provided in the Appendix.)

Step 3: Identify gaps and needs

The objective of step 3 is to identify gaps between existing realities and national needs for an effective approach to managing used and waste computing equipment in an environmentally sound manner. The result of this step is a list of activities that should be addressed when establishing or improving the ESM of used and waste computing equipment.

The identification of gaps and needs should result in a list of activities that could be implemented in a near or far future to reach ESM of used and waste computing equipment. Based on the assessment in step 1 and by having an overview of the experiences of other countries and regional international entities (step 2), the gaps in the actual national system can be identified.

Example of gaps and needs that could be addressed:

- Gaps in downstream markets and disposal facilities for both hazardous and non-hazardous materials generated by repairing, refurbishing and recycling used and waste computing equipment;
- Gaps in transposing and implementing international treaty obligations into domestic law and enforcement for export, transit, and import of used and waste computing equipment, e.g. gaps in Competent Authority² functionality and response time;
- Gaps identified by analysis of existing relevant national legislation, existing relevant national strategic documents and existing infrastructure

Step 4: Define relevant needs and priorities

The objective of step 4 is to define the priorities based on the gaps and needs identified in step 3 and to provide examples of tools.

² Pursuant to article 5 of the Basel Convention, Parties are required to designate or establish one or more competent authorities to facilitate the implementation of the Convention.

<p>Draft or amend legislation(s):</p>	<p>Legislation should at least contain:</p> <ul style="list-style-type: none"> - Regulations for solid and hazardous waste management; - Specific regulations for used and waste computing equipment to ensure ESM; - Defined responsibilities for key stakeholders covered by the specific used and waste computing equipment law ; such as local governments, consumers, small businesses, large businesses, etc.; - Legal obligations for collection, reuse, recycling, recovery or final disposal of used and waste computing equipment; - Registrations, permits or other means of authorisation, as needed, for facilities that repair, refurbish, recycle material, recover energy, or finally dispose of used and waste computing equipment; - Restrictions on the disposal of waste computing equipment; - Reporting / recording / data management requirements; - Financing systems, as needed, for the collection and ESM of the used and waste computing equipment; - Penalties for non-compliance with the law; - Enforcement mechanisms and responsible agencies/bodies.
<p>Establish or enhance a collection system</p>	<p>Establish collection points and mechanisms in order to ensure environmentally sound collection of used and waste computing equipment from households, communities, commercial entities and government entities.</p> <p>Involve the informal sector:</p> <ul style="list-style-type: none"> - How will the informal sector participate in the formal system? - Will there be some government incentives?
<p>Define a financing system supporting the ESM of used and waste computing equipment</p>	<p>Develop a financing model, such as establishing a recycling fund, advanced final disposal fees or levying of prepaid recycling fees, for negative valued used and waste computing equipment and components.</p> <p>Identify policies that attract industry and investments (incentives, awards, green procurement, etc).</p> <p>Provide incentives for the development of an end-use market for reusable and recycled materials derived from used and waste computing equipment.</p>
<p>Implement requirements regarding the treatment of used and waste computing equipment</p>	<p>Identify and implement the requirements for the collection, reuse and repair, recycling, recovery, landfilling and incineration of used and waste computing equipment.</p> <p><i>(See example of PACE guidelines on ESM)</i></p>
<p>Monitoring and control</p>	<p>Define monitoring and control mechanisms to manage permits, manifests and any accompanying forms.</p> <p>Monitor facilities, either public or private, that manage used and waste computing equipment as appropriate.</p>

Awareness raising	Design and execute national public awareness campaigns on the used and waste computing equipment issue and national initiatives for the environmentally sound management of used and waste computing equipment, such as environmental education programs and collection campaigns.
Create a multi-stakeholder dialogue	Evaluate the role of a multi-stakeholder dialogue and install a multi-stakeholder forum that will serve as part of the implementation, monitoring and assessment mechanisms for the used and waste computing equipment activities and development of the management system.

Step 5: Implement activities

The objective of step 5 is to define a roadmap and/or a national action plan on ESM of used and waste computing equipment in order to implement the activities listed in step 4. Depending on the situation in the country, the following outcomes should be achieved:

- Establish a coordinating mechanism and organization process;
- Set goals, national objectives and reduction targets;
- Formulate an implementation plan;

An implementation plan could include, but would not be limited to the elements below:

Activity	Funding source	Lead Agency	Activity cost	timeline	Indicator

- Implement the roadmap and/or the national action plan on ESM of used and waste computing equipment;
- Develop a monitoring and evaluation mechanism for the plan.

Five steps for the private sector:

Step 1: Assess the current situation in your country

The objective of step 1 is to get an overview of the situation in your country regarding the ESM of computing equipment, including baseline estimates of e-waste flow and practices, financial aspects, technical ability and relevant stakeholders in order to have all the important elements to build a business strategy.

Used and waste computing equipment flow	How much used and waste computing equipment would be available to your business? (quantity of domestically-generated used and waste computing equipment, used and waste computing equipment imported and/or exported?)
Financing aspects	How is the collection, transport and recycling of used and waste computing equipment financed in your country? What are the financing flows? How is the recycling of the negative valued used and waste computing equipment and components financed? Is there a prepaid recycling contribution, taxes or other financing available?
Technical ability	What infrastructure exists for the ESM of used and waste computing equipment in your country, including existing repair, refurbishment, recycling, recovery, non-hazardous landfills, incineration and waste to energy, and hazardous waste disposal facilities? Which are the categories or scope of used and waste computing equipment (such as IT, consumer electronics, medical, etc.) that are sent for reuse, repair, refurbishment, recycling, recovery, etc in your country? What types of technologies are required for your “target” categories of used and waste computing equipment? Are there any companies in the country that are certified to standards such as ISO 14001, ISO 9001, or RIOS and R2, e-stewards, CENELEC, etc.?
Stakeholders	Identify key stakeholders: Stakeholders are, for example, persons from government, brokers, recyclers, the informal sector, producers, importers, retailers, consumers association(s), etc., who are dealing with used and waste computing equipment.
Public awareness	Are there educational programs concerning used and waste computing equipment in schools? Are there any publicity activities regarding used and waste computing equipment? Are users/consumers in your country committed to delivering the used and waste computing equipment to collection points for free or are there financial incentives in place to motivate consumers to deliver the used and waste computing equipment to collection points?

Step 2: Collect existing information

The objective of step 2 is to identify and assess existing laws, regulations and guidelines that must be complied with concerning the ESM of used and waste computing equipment. Additionally, international agreements should be identified that address used and waste computing equipment management.

Domestic legislation	<p>Identify whether legislation exists in your country for solid and hazardous waste management.</p> <p>Discern whether there are any specific laws that deal with used and waste computing equipment.</p> <p>Discern what types of used and waste computing equipment are addressed by the legislation.</p> <p>Discern what the legislation requires and the target regulatory audience in terms of compliance.</p>
Organization of domestic collection systems	<p>How is the collection organized in your country?</p> <p>Which stakeholder is responsible for take back?</p> <p>Who has the obligation to dispose of?</p> <p>What are the constraints on disposal? Which components have a special obligation?</p>
Transboundary movement	<p>Are used and waste computing equipment exports and imports regulated in your country?</p> <p>Does the regulation vary for different types of shipments (e.g., repaired computers vs. unprocessed computers)?</p> <p>Are these laws enforced?</p> <p>Are the countries importing and exporting used and waste computing equipment Parties to the Basel Convention or Basel Convention article 11 bilateral or multilateral agreements?</p>
Management systems	<p>Identify management systems that can be applied to used and waste computing equipment in the context of promoting ESM (as ISO 14001, ISO 9001, or RIOS and R2, e-stewards, CENELEC)</p>

Step 3: Assess the situation for establishing a business

The objective of step 3 is to provide guidance to assess the situation for establishing a business based on information gathered in step 1 and step 2.

Establishing a business	<p>What are the legal requirements for setting up a solid or hazardous waste facility?</p> <p>What are the legal requirements to reuse, repair and refurbish used and waste computing equipment?</p> <p>What are the legal requirements to recycle, recover, or incinerate used and waste computing equipment?</p> <p>Which techniques are available for moving and separating components?</p> <p>Is there a business opportunity?</p> <p>Where do you get material from?</p> <p>What legislation is available?</p>
-------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>Is there someone else active in the sector (assess competition)?</p> <p>Where are the valuables?</p> <p>What has no value?</p> <p>Where and how to get the used and waste computing equipment outlet market?</p> <p>How do you manage downstream waste?</p> <p>Which techniques / technologies can be used?</p> <p>How can you set up your business model/operations based on incoming waste material as well as available downstream markets and solutions (cement plant, smelter, etc. available)?</p> <p>What is the scope of setting up a business, e.g. does government regulate the number of recyclers; are there measures in place to prevent or at least minimise illegal movements/dumping?</p> <p>How do businesses work together?</p> <p>How closely is the government monitoring and controlling?</p> <p>How can you, in a transformatinal situation, involve the informal sector?</p>
<p>Commercial considerations</p>	<p>Develop a business plan that supports your facility “niche” operations capabilities, e.g. collection compared to reuse, refurbishment and repair compared to recovery, in order to be economically viable.</p> <p>Establish a plan to ensure that all hazardous substances derived from used and waste computing equipment are managed in accordance with all applicable laws and in an environmentally sound manner.</p> <p>Develop business relationships prior to entering the market place for key upstream and downstream markets in order to obtain the necessary volume for recycling and for end use market sales of reusable equipment and commodity grade materials, such as steel, aluminium, copper and plastics.</p> <p>Strategically choose your facility location based on proximity to transportation outlets, such as highways, railroads, and ports.</p> <p>Acquire any relevant permits, registrations or manifests needed to operate your facility.</p> <p>Join a trade association to network with industry leaders, learn about new, innovative technologies and best business practices.</p> <p>Analyse values at different steps, e.g. if a collection system is available.</p>
<p>Technical Considerations</p>	<p>What are the requirements regarding the treatment of waste computing equipment?</p> <p>What techniques and technologies are required for sorting, processing, recycling, material and energy recovery and final disposal?</p> <p>Can the company meet minimum requirements (emission limits, water usage, etc.?)</p> <p>What is the logistics situation in the country?</p>
<p>Financial Considerations</p>	<p>Are there incentives available for solid and hazardous waste management?</p> <p>Are there incentives specifically for used and waste computing equipment?</p> <p>Does the legislation prescribe for example a prepaid recycling fee or contribution?</p> <p>What is the financing model for the recycling of non valued components?</p>
<p>ESM considerations</p>	<p>An used and waste computing equipment management facility should be managed in an environmentally sound manner, i.e.it must meet all basic requirements to</p>

ensure ESM of such used and waste computing equipment and commit to continual improvement in their operations.

The whole life cycle of the facility should be covered, from planning and construction of a facility to its operation and subsequent dismantling or site remediation (in the event of accidents or spills during operation) or site clearance after closure, as appropriate. As such, a facility should meet the approval of the competent authorities concerned. The facility should have:

- Appropriate design and location of the plant, taking into account potential risks to the environment, including environmentally sensitive areas;
- Where appropriate, an environmental and social impact assessment, which should be conducted and approved by the appropriate authorities before a facility is constructed;
- Sufficient measures in place to safeguard occupational safety and health (OSH), including:
 - Measures which meet the requirements of national OSH legislation;
 - Appropriate actions to address significant actual and/or potential risks to the health and safety of the public and of workers, based on a risk assessment, and to correct deficiencies that have been identified, including contingency arrangements in the event of plant breakdown or accidental spillages;
 - An appropriate and adequate training programme for personnel to ensure employees have an appropriate level of awareness, competency and training with respect to the effective management of occupational risks, including the effective management of wastes;
- Sufficient measures in place to protect the environment, including:
 - Measures to control pollution taking into account emission limit values to air, water and soil;
 - Appropriate actions to address significant actual and/or potential risks to the environment, based on risk assessment, and to correct deficiencies that have been identified, including contingency arrangements in the event of plant breakdown or accidental spillages;
 - Waste acceptance and handling criteria, including measures to ensure due diligence and proper collection, sorting, pre-treatment, treatment, storage and downstream management of wastes and residuals;
- An applicable environmental management system in place, if feasible and appropriate, which:
 - Describes, assesses and reviews the design, construction, operation, monitoring, management and maintenance of the facility and which will be periodically reviewed;
 - Demonstrates compliance with applicable legislation and regulations;
 - Demonstrates the commitment of management to integrating a systematic and consistent approach to achieve ESM in all aspects of facility operations;
 - Includes provisions to support transparency and confirm implementation of ESM by the facility, subject to appropriate protection of confidential business information, which can help assure the public that operations and activities are compatible with ESM. Such provisions may include third-party audits and inspections;

	<ul style="list-style-type: none"> • An adequate and transparent monitoring, recording, reporting and evaluation programme which covers: <ul style="list-style-type: none"> – Relevant legal requirements, including key process parameters; – Compliance with applicable safety requirements; – Effluents and emissions; – Records of incoming, stored and outgoing wastes. • An adequate emergency plan and response mechanism; • An adequate plan for closure and aftercare, which includes the identification and remediation of contaminated sites.
Monitoring and control	In the absence of an environmental management system put in place a system to monitor the performance of the used and waste computing equipment management operations, for both record keeping purposes and to detect discharges, releases, or accidents and to take appropriate actions if performance does not comply with targets.
Capacity building for compliance	Set up a workers protection, environmental and health system. Ensure compliance with all applicable legal requirements, including transboundary movements, , licenses, data security, etc.

Step 4: Define relevant needs and priorities

The objective of step 4 is to establish priorities based on the assessment done in step 3.

Identify the various gaps that exist in step 3 regarding:

- Establishing a business;
- Commercial considerations;
- Technical Considerations;
- Financial considerations;
- ESM considerations;
- Monitoring and control;
- Capacity building for compliance.

Based on the assessment, establish priorities to move forward to launch the business based on:

- Material and financing flow analysis;
- Used and waste computing equipment inventory and assessment;
- Actual types of management of used and waste computing equipment at recycling and refurbishment facilities compared to ESM at each facility.

Step 5: Implement activities

The objective of step 5 is to define a roadmap to establish a business on ESM of used and waste computing equipment.

The roadmap for activities should be developed and implemented on the basis of the assessment in step 3 and in order to take action to bridge the prioritised gaps as identified in step 4. The identified gaps will differ case by case depending on the situation in the country and the interest of the company(ies).

Appendix

Examples of international conventions, regional agreements and national legislations and other regulatory frameworks

International conventions and regional agreements

Basel Convention Stockholm Convention Rotterdam Convention	http://www.basel.int/ http://chm.pops.int/ http://www.pic.int/
Regional Agreements regarding transboundary movements (export, import, transit) of used and waste computing equipment	Waigani Treaty: Bans the exporting of hazardous or radioactive waste to and from Pacific Islands Forum countries Bamako Convention: Treaty of African nations prohibiting the import of any hazardous wastes (including radioactive) Izmir Protocol: Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal Central American Accord: Regional agreement to control the trans-boundary movement of hazardous wastes and prevent the illegal traffic and disposal of such wastes in Central America

Legislation on ESM of used and waste computing equipment

Argentina	<p>National Legislation:</p> <ul style="list-style-type: none"> Resolution Secretary of Energy 48/2015: Approval of the General Regulations of the stimulus program called RENOVATE (Program for Promotion of Production and Marketing of Household Electric Appliance Energy Efficient) in force at December 31, 2015 <p>http://www.infoleg.gob.ar/infolegInternet/anexos/245000-249999/245470/norma.htm</p> <p>Autonomous City of Buenos Aires:</p> <ul style="list-style-type: none"> Law 2807 and decree 70572011: establishes measures for the management of used electronic devices <p>http://www.buenosaires.gob.ar/areas/leg_tecnica/sin/normapop09.php?id=120229&qu=c&ft=0&cp=&rl=1&rf=&im=&ui=0&printi=1&pelikan=1&sezion=1094565&primera=0&mot_toda=&mot_frase=&mot_alguna=</p> <p>Provinces:</p> <ul style="list-style-type: none"> Law 14321 Decree 2300/11 Province of Buenos Aires: establishes guidelines, obligations and responsibilities for the sustainable management of Waste Electrical and Electronic Equipment (WEEE) <p>http://www.gob.gba.gov.ar/legislacion/legislacion/1-14321.html</p> <ul style="list-style-type: none"> Law 9737 Province of La Rioja: Recycling Program of WEEE <p>http://www.residuoselectronicos.net/wp-content/uploads/2013/07/laRioja.jpg</p> <ul style="list-style-type: none"> Law 56 Province of Chubut: Recycling Program of WEEE <p>http://www.legischubut2.gov.ar/digesto/lx1/XI-56.html</p> <ul style="list-style-type: none"> Law 8362 Province of San Juan: general framework for the management of used EEE and WEEE <p>http://www.legislaturasajuan.gov.ar/index.php/prensa/item/3222-ley-n-8362</p> <ul style="list-style-type: none"> Law 7345 Province of Chaco: program and regulation for the management of WEEE <p>http://200.41.235.179:83/index.php?option=com_content&view=article&id=1228:ley-7345-chaco-poder-legislativo&catid=600&Itemid=477</p>
EU	Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE),

	<p>http://ec.europa.eu/environment/waste/weee/legis_en.htm</p> <p>Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm</p> <p>Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2012 on shipment of waste, http://ec.europa.eu/environment/waste/shipments/legis.htm</p>
Madagascar	<p>Decree N°2012-753 of 07/08/12, relating to the prohibition of the import of wastes within the Basel convention frameworks</p> <p>Decree N° 2012-754 of 07/08/12 establishing the end of life-product management procedure, wastes and hazardous waste environmentally harmful generator, within the Basel convention implementation</p> <p>Decree No. 2015-930 of 06/09/15 establishing Classification And Environmentally Sound Management of Electrical Electronic Equipment (WEEE) in Madagascar</p>
Peru	<p>Reglamento Nacional para la Gestión y Manejo de los Residuos de Aparatos Eléctricos y Electrónicos, 2012 Ministerio del ambiente N° 2012-16354</p> <p>http://www.raee-peru.pe/index.php/reglamento-nacional-raee-1</p>
Slovak Republic	<p>Law on waste 79/2015 (e-waste is mentioned in Section 2)</p> <p>Secondary legislation on e-waste 373/2015</p>
Switzerland	<p>Ordinance on the return, the take back and the disposal of electrical and electronic equipment (ORDEE) SR 814.620; available in German, French and Italian language; see below.</p> <p>Verordnung über die Rückgabe, die Rücknahme und die Entsorgung elektrischer und elektronischer Geräte (VREG) SR 814.620</p> <p>http://www.bafu.admin.ch/abfall/01472/01478/index.html?lang=de</p> <p>Ordonnance sur la restitution, la reprise et l'élimination des appareils électriques et électroniques (OREA) SR 814.620</p> <p>http://www.bafu.admin.ch/abfall/01472/01478/index.html?lang=fr</p> <p>Ordinanza concernente la restituzione, la ripresa e lo smaltimento degli apparecchi elettrici ed elettronici (ORSAE) SR 814.620</p> <p>http://www.bafu.admin.ch/abfall/01472/01478/index.html?lang=it</p>
General data base	<p>ECOLEX, the gateway to environmental law:</p> <p>http://www.ecolex.org/start.php</p>

Technical guidelines, guidance documents and technical directives

Basel Convention (PACE)	<p>Guidance document on the environmentally sound management of used and end-of-life computing equipment, adopted (except section 3) at COP11 in 2013 (document UNEP/CHW.11/6/Add.1/Rev.1),</p> <p>http://www.basel.int/Implementation/TechnicalAssistance/Partnerships/PACE/PACEGuidanceDocument/tabid/3246/Default.aspx</p> <p>Guideline on environmentally sound testing, refurbishment and repair of used computing equipment;</p> <p>Guideline on environmentally sound material recovery and recycling of end-of-life computing equipment;</p> <p>Glossary of terms;</p> <p>Report with ESM criteria recommendations</p> <p>http://www.basel.int/Implementation/TechnicalAssistance/Partnerships/PACE/PACEGuidelinesandGlossaryofTerms/tabid/3247/Default.aspx</p>
Basel Convention (technical guidelines)	<p>Technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non-waste under the Basel Convention, <i>Adopted</i>, on an interim basis, at COP 12 in May 2015</p> <p>Advance version - document UNEP/CHW.12/5/Add.1/Rev.1:</p> <p>http://www.basel.int/TheConvention/ConferenceoftheParties/Meetings/COP12/tabid/4248/mctl/ViewDetails/EventModID/8051/EventID/542/xmid/13027/Default.aspx</p>

Peru	Norma Técnica Peruana NTP 900.064, 2012: Gestion Ambiental. Gestión de residuos. Manejo de residuos de aparatos eléctricos y electrónicos. Generalidades, Peru Norma Técnica Peruana NTP 900.065, 2012: Gestion Ambiental. Gestión de residuos. Manejo de residuos de aparatos eléctricos y electrónicos. Generación, recolección interna, clasificación y almacenamiento. Centros de acopio., Peru
Switzerland	Technical guidelines for the disposal of waste electrical and electronic equipment, SENS and SWICO, Switzerland. Available in French and German language; see below Prescriptions techniques pour la récupération des déchets d'équipements électriques et électroniques SENS et SWICO, Switzerland Technischen Vorschriften zur Entsorgung von Elektro- und Elektronikaltgeräten SENS und SWICO, Switzerland

Additional resources and examples

UNEP/IETC	E-waste Volume III - WEEE/e-waste "Take back system", August 2013 E-Waste Vol. 2: E-waste Management Manual, Dec 2007 (PDF 2.2MB) E-Waste Vol. 1: Inventory Assessment Manual, Dec 2007 (PDF 1.7MB)
UNEP	Sustainable Innovation and Technology Transfer Industrial Sector Studies Recycling – From E-Waste to Resources. http://www.unep.org/pdf/pressreleases/E-waste_publication_screen_finalversion-sml.pdf
UNU-IAS	E-waste statistics: guidelines and classification, reporting and indicators http://i.unu.edu/media/unu.edu/news/49515/E-waste-Guidelines_Partnership_2015.pdf
Solving the E-waste Problem (step)	Solving the E-Waste Problem (step) Green Paper: Recommendations on Standards for Collection, Storage, Transport and Treatment of E-waste; Principles, Requirements and Conformity Assessment: http://www.step-initiative.org/tl_files/step/_documents/Step%20Publication/Step_GP_End%20of%20Life_final.pdf Solving the E-Waste Problem (Step) White Paper: Recommendations for Standards Development for Collection, Storage, Transport and Treatment of E-waste http://www.step-initiative.org/tl_files/step/_documents/Step%20Publication/Step_WP_Standard_20140602.pdf Step e-waste world map: http://www.step-initiative.org/step-e-waste-world-map.html
Plataforma RELAC	Lineamientos para la gestión de los Residuos de Aparatos Eléctricos y Electrónicos en Latinoamérica : Resultados de una Mesa Regional de Trabajo Público-Privado / Guidelines for the management of waste electrical and electronic equipment (WEEE) in Latin America: Results of a regional public-private round table: http://www.residuoselectronicos.net/
Ministerio de Energía y Minería, Argentina	National Resolution Secretary of Energy 48/2015 establishes a system for the payment of financial compensation to the beneficiary entities Program Renovate: https://www.elclimalohacesvos.gob.ar/
IFIXIT	The free repair guide:: https://www.ifixit.com/
Project Econormas MERCOSUR	Sustainable Production and Consumption http://www.econormas-mercosur.net/es/pcs
Microsoft Refurbisher Programs	Refurbished PCs: http://www.microsoft.com/refurbishedpcs/programs.aspx
ITU's Connect 2020 Agenda	Goal 3: Sustainability: Target 3.2: Volume of redundant e-waste to be reduced by 50% by 2020: http://www.itu.int/en/connect2020/Pages/default.aspx