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PARTNERSHIP FOR ACTION ON COMPUTING EQUIPMENT

PROJECT 5.1

STRATEGIES, ACTIONS AND INCENTIVES TO PROMOTE ENVIRONMENTALLY SOUND MANAGEMENT

Acknowledgements

The efforts of the PACE Project Group 5.1 in the preparation of this document are appreciated. Members of Project Group 5.1 are identified on page 4 of this document.

The PACE Project Group 5.1 would like to express its appreciation to the countries, institutions and company that answered the questionnaire: Argentina; Canada; Basel Convention Regional Centre (BCRC) for Training and Technology Transfer for the Caribbean; BCRC for French-speaking countries in Africa in Senegal; and TES-AMM.

In addition, special thanks are extended to Mr. Patrick Micheli, Consultant to the Technical Assistance Branch, Secretariat of the Basel, Rotterdam and Stockholm Conventions, to Mr. Matthias Kern, Senior Programme Officer, Technical Assistance Branch, Secretariat of the Basel, Rotterdam and Stockholm Conventions, and to Dr. Adriana Rosenfeld, Consultant to Project Group 5.1.

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Glossary

BCRC	Basel Convention Regional Centre
BRS-SSB	Basel Rotterdam Stockholm Secretariat-Scientific Support Branch
EEE	Electrical & Electronic Equipment
EMAS	Eco-Management and Audit Scheme
EMS	Environmental management system
EPR	Extended producer responsibility
ESM	Environmentally sound management
E-waste	Waste Electrical & Electronic Equipment (also termed WEEE)
ILO	International Labour Organisation
ISO	International Organization for Standardization
OECD	Organization for Economic Cooperation and Development
OHSAS	Occupational Health and Safety Assessment Series
SBC	Secretariat of the Basel Convention
SME	Small & Medium sized Enterprise
UEEE	Used Electrical & Electronic Equipment
WEEE	Waste Electrical & Electronic Equipment (also termed e-Waste)

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Contents

1. Executive Summary

The 10th meeting of the Conference of the Parties of the Basel Convention in 2011 in Colombia, in its Decision on PACE, amongst other things, decided that the PACE Working Group should (g) Develop strategies on the environmentally sound management of used and end-of-life computing equipment; (i) identify actions and incentives that can be taken to promote environmentally sound reuse, refurbishment, repair, recycling and material recovery of used and end-of-life computing equipment through the implementation of the Partnership guidelines and existing certification schemes; and (j) Assess the possibility of using facility certification as a tool for assuring the environmentally sound management of used and end-of-life computing equipment.

To take on these selected tasks the PACE Working Group initiated PACE Project Group 5.1: on Strategies, Actions and Incentives to promote Environmentally Sound Management. Those tasks were further refined and prioritized as the new Project Group agreed its Terms of Reference.

Based on the analysis of collated comments the Project Group has concluded the basic requirements of a national and regional strategy for environmentally sound management of computer equipment waste to include:

- Accepting globally a clear definition of e-waste;
- Coordinating at regional level;
- Establishing national policies;
- Establishing a basic legal framework;
- Establishing specific regulations;
- Training competent authorities in enforcement;
- Establishing capacity to enforce legal requirements;
- Coordinating at national level.

Based on the analysis of collated comments the Project Group guidance to developing countries and countries with economies in transition in their policy formulation and implementation includes:

- Defining producers' responsibility/liability;
- Banning the illegal importation of WEEE;
- Introducing funding mechanisms for service suppliers to recover WEEE and its components;
- Providing training and information on how to work in an Environmentally Sound Manner;
- Establishing incentive schemes (for example: voluntary, financial, regulatory, and administrative) for facilities to encourage facilities to work in an Environmentally Sound Manner;
- Establishing incentive schemes (for example: voluntary, financial, regulatory, and administrative) to encourage the informal sector into collecting E-waste and E-scrap;
- Establishing regulatory and enforcement to either prohibit the informal sector from processing E-waste and E-scrap, or ensure informal processing facilities are brought under the regulation and work in an Environmentally Sound Manner.

Based on the analysis of collated comments the Project Group identified barriers preventing developing countries and countries with economies in transition from implementing collection and take-back schemes as well as other strategic activities as:

- Lack of a clear globally accepted definition of e-waste;
- Lack of funds;

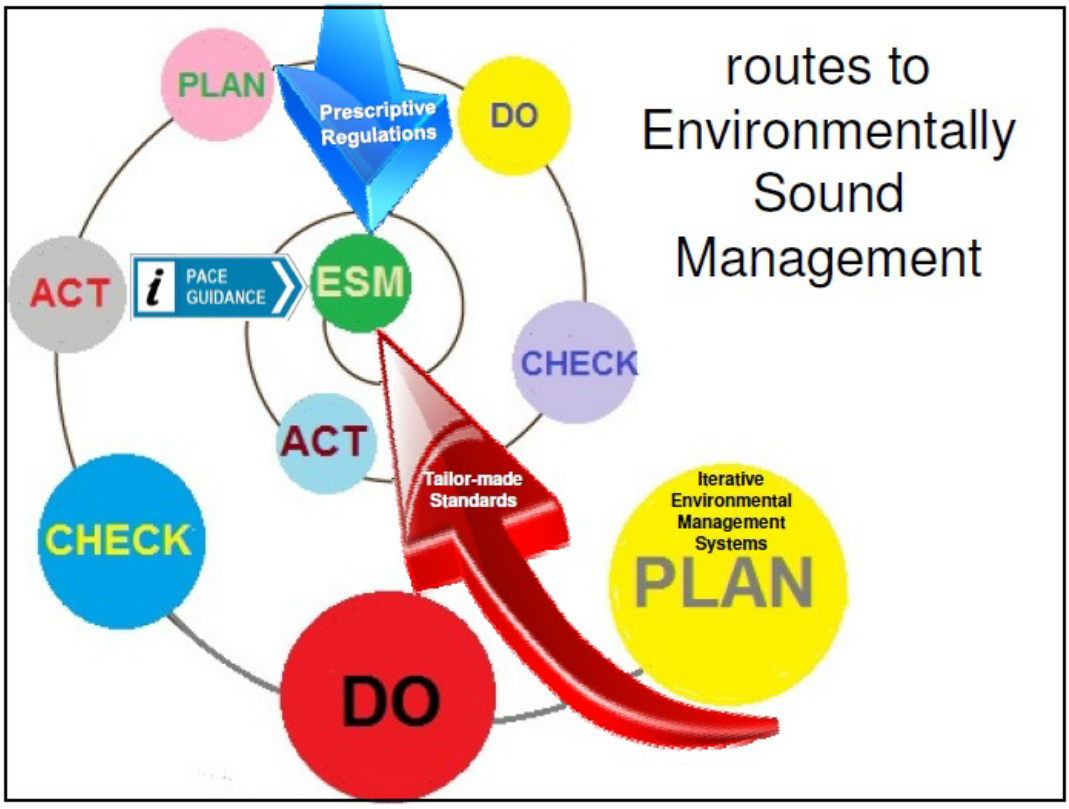
- Lack of coordination at regional level;
- Lack of national policies;
- Lack of a basic legal frameworks;
- Lack of training of competent authorities;
- Lack of capacity to enforce legal requirements;
- Lack of coordination at national level;
- Lack of training and information mechanisms to work in an Environmentally Sound Manner.

Based on the analysis of collated comments the Project Group identified barriers preventing producers from starting up voluntary schemes in certain countries as:

- existence of geographical challenges;
- uncertainty in the level playing field for producers;
- lack of economic viability;
- lack of consumer demand;
- lack of viable end-use markets;
- lack of recovery services;
- lack of harmonized voluntary schemes;
- lack of information and training on voluntary schemes.

Based on the analysis of collated comments the Project Group identified options to overcome these barriers as:

- providing a regulatory and administrative infrastructure;
- encouraging voluntary schemes;
- providing financial support;
- providing information and training on voluntary schemes;
- providing information to enhance consumers' demand.



The Project Group has identified and makes publicly accessible in this report information on existing certification schemes. Furthermore the Project Group has assessed the extent to which certification schemes are currently used, and the elements that appear common in the establishment of credible and reliable programs.

The current examples of strategies for ESM, both industry-led and Government, voluntary and mandatory, were drawn upon to address the high priority tasks, in doing so the lower priority task was addressed.

In conclusion the Project Group has provided:

- the basic requirements of a national and regional strategy for environmentally sound management of computer equipment waste;
- guidance to developing countries and countries with economies in transition in their policy formulation and implementation;
- barriers preventing developing countries and countries with economies in transition from implementing collection and take-back schemes as well as other strategic activities;
- barriers preventing producers from starting up voluntary schemes in certain countries;
- options to overcome these barriers.

Two years after the start of the Project Group, at the Eleventh Meeting of the Conference of the Parties to the Basel Convention in 2013, the Basel Convention Parties agreed its Framework for the environmentally sound management of hazardous wastes and other wastes ("The Basel Convention Framework on ESM"). Relevant to the work of PACE Project Group 5.1, "The Basel Convention Framework for ESM" set down its:

Guiding principles

Framework for the environmentally sound management of hazardous wastes and other wastes

- A common understanding of what environmentally sound management encompasses;
- Tools to support and promote the implementation of environmentally sound management;
- Strategies to implement environmentally sound management.

Role of key stakeholders

- Governments;
- Other stakeholders.

Furthermore the terms of reference for the expert working group on "The Basel Convention Framework on ESM", was set out in Annex II to decision BC-11/1. Certain of the tasks of the expert working group are relevant to the work of Project Group 5.1. Those are:

- Develop generic guidance on how to establish ESM;
- Assess possible incentives to encourage the private sector to invest in ESM.

The expert working group has also developed 'Practical Manuals for the Promotion of the Environmentally Sound Management of Wastes', those include: General Rules and Legislation; Prevention; Permits and Licences; and Certification Schemes.

The expert working group was also requested to develop a work programme for additional priorities and key work items for implementation of ESM. Those priority areas included:

- Encouraging parties to develop and implement comprehensive strategies and legislation;
- Encouraging the private sector to implement and invest in ESM.

Other Project Groups in PACE have gathered practical experiences from in-country projects and others have proposed ways and means to implement ESM. There is therefore a comprehensive library of information and advice that has built up during the lifetime of PACE Project Group 5.1 and so this report, in particular its Recommendations, should be read in conjunction with "The Basel Convention Framework on ESM", its Practical Manuals, and the output from the other PACE Project Groups.

2. Introduction

Background

Over 50 million metric tonnes of e-waste are generated worldwide every year, and whilst computing equipment has improved the lives of people everywhere, all countries now face the challenge of managing the reuse, repair, recycling and material recovery of used and end-of-life computing equipment.

In 2006, the eighth meeting of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal adopted the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste which called for more structured and enhanced efforts towards achieving global solutions for management of e-waste problems and among others encouraged Parties to develop further partnerships targeting e-waste.

The Partnership for Action on Computing Equipment (PACE) was launched in 2008 by the ninth meeting of the Conference of the Parties to the Basel Convention, with decision IX/9 , which agreed its mission, scope, working principles and activities. PACE was developed as a multi-stakeholder public-private partnership that provides a forum for representatives of personal computer manufacturers, recyclers, international organizations, associations, academia, environmental groups and governments to tackle environmentally sound refurbishment, repair, material recovery, recycling and disposal of used and end-of-life computing equipment. A Working Group was established as the operating mechanism for the Partnership that operates under the guidance of the Basel Convention Open-ended Working Group.

The 10th meeting of the Conference of the Parties to the Basel Convention in 2011 in Colombia, in its Decision on PACE, amongst other things, decided that the PACE Working Group should :

- develop strategies on the environmentally sound management (ESM) of used and end-of-life computing equipment;
- to identify actions and incentives that can be taken to promote environmentally sound reuse, refurbishment, repair, recycling and material recovery of used and end-of life computing equipment through the implementation of the Partnership guidelines and existing certification schemes, and
- assess the possibility of using facility certification as a tool for assuring the environmentally sound management (ESM) of used and end-of-life computing equipment.

To take on these selected tasks the PACE Working Group initiated PACE Project Group 5.1: on Strategies, Actions and Incentives to promote Environmentally Sound Management.

Those tasks were further refined and prioritized as the new Project Group agreed its Terms of Reference.

Tasks

The objectives of the Project Group were defined and detailed into a series of Tasks that were then prioritised by the Project Group in its Terms of Reference (Appendix A).

Three high priority tasks were identified as:

Task 1: Develop short and succinct requirements of a national and regional strategy for environmentally sound management of computer equipment waste and give guidance to developing countries and countries with economies in transition in their policy formulation and implementation including consideration of incentive schemes (for example: voluntary, financial, regulatory, and administrative).

Task 3: Identifying options to overcome the barriers that prevent developing countries and countries with economies in transition from implementing collection and take-back schemes as well as other strategic activities including incentive schemes (for example: voluntary, financial, regulatory, and administrative). Identifying options to overcome barriers to producers from starting up voluntary schemes in certain countries which would help to determine what incentives/support could be provided; for example geographical challenges, ensuring level playing field to producers, economic viability, lack of consumer demand, no viable end-use markets, etc.

Task 4: Identify and make publicly accessible information on existing certification schemes, possible use of Ad Interim Group report on ESM criteria recommendations as a start. Collect information on existing certification schemes, an assessment of the extent to which they are currently used, and the elements that appear common in the establishment of credible and reliable programs. Key items to be explored could include:

- What are the key steps to get certified?

- Gather links to information/databases of certifications and registrations regarding handling of used and end-of-life computing equipment under various schemes.

- What are the key components or elements that are present in widely recognized guidelines and certification schemes?

- Are the existing standards used to certify facility ESM practices compatible with PACE guidelines?

- How are governments, NGOs and industry using facility certification mechanisms now?

- How could certification schemes be used in the future to ensure ESM and also guide decisions on TBM approvals by governments?

One Task was identified at a lower priority as:

Task 2: Identify current examples of strategies for ESM, both industry-led and Government, voluntary and mandatory.

Data Gathering

The Project Group decided to fulfil the tasks through an online questionnaire to address BCRCs and Project Group Participants. On 11th July 2012 a questionnaire was circulated to the Project Group Participants and BCRCs. Responses to the questionnaires were collated and analysed. In order to assist in the collation of responses and in drafting the Project Group Report the Project Group decided at its Second PG5.1 Physical meeting in South Africa on 9-11th May 2013 to obtain the assistance of a consultant. The questions and responses are collated in the next section of this report.

Working method

The Project Group 5.1 worked through Conference calls and e-mail exchanges and had 3 physical meetings to complete its work.

The First PG5.1 Physical meeting took place in San Salvador on 9-11th May 2012.

The Second PG5.1 Physical meeting took place in South Africa on 9-11th May 2013.

The Third PG5.1 Physical meeting took place in Indonesia on 27-29th June 2014.

3. Drawing information from the Questionnaire responses

The Project Group addressed an online questionnaire to Project Group Participants and to BCRCs on 11th July 2012 and re-issued the questionnaire again later that year. Responses to the questionnaires were collected from the second half of 2012 through to the first half of 2013, and collation and analysis of the responses started mid-2013. Since at its second physical meeting in South Africa on 9-11th May 2013 the Project Group decided to obtain the assistance of a consultant, the competitive selection of the consultant took place in the second half of 2013. BCRC Argentina finalised the arrangements with the chosen consultant. This section of the report collates the responses to the questionnaire in order to complete the Tasks for the Project Group.

Recalling of the three high priority tasks, Task 1 was to "Develop short and succinct requirements of a national and regional strategy for environmentally sound management of computer equipment waste and give guidance to developing countries and countries with economies in transition in their policy formulation and implementation including consideration of incentive schemes (for example: voluntary, financial, regulatory, and administrative)."

Based on the analysis of collated comments the Project Group has concluded the basic requirements of a national and regional strategy for environmentally sound management of computer equipment waste to include:

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- Training competent authorities in enforcement;
- Establishing capacity to enforce legal requirements;
- Coordinating at national level.

Recalling of the three high priority tasks, Task 3 was to "Identifying options to overcome the barriers that prevent developing countries and countries with economies in transition from implementing collection and take-back schemes as well as other strategic activities including incentive schemes (for example: voluntary, financial, regulatory, and administrative). Identifying options to overcome barriers to producers from starting up voluntary schemes in certain countries which would help to determine what incentives/support could be provided; for example geographical challenges, ensuring level playing field to producers, economic viability, lack of consumer demand, no viable end-use markets, etc".

Based on the analysis of collated comments the Project Group guidance to developing countries and countries with economies in transition in their policy formulation and implementation includes:

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- providing financial support;
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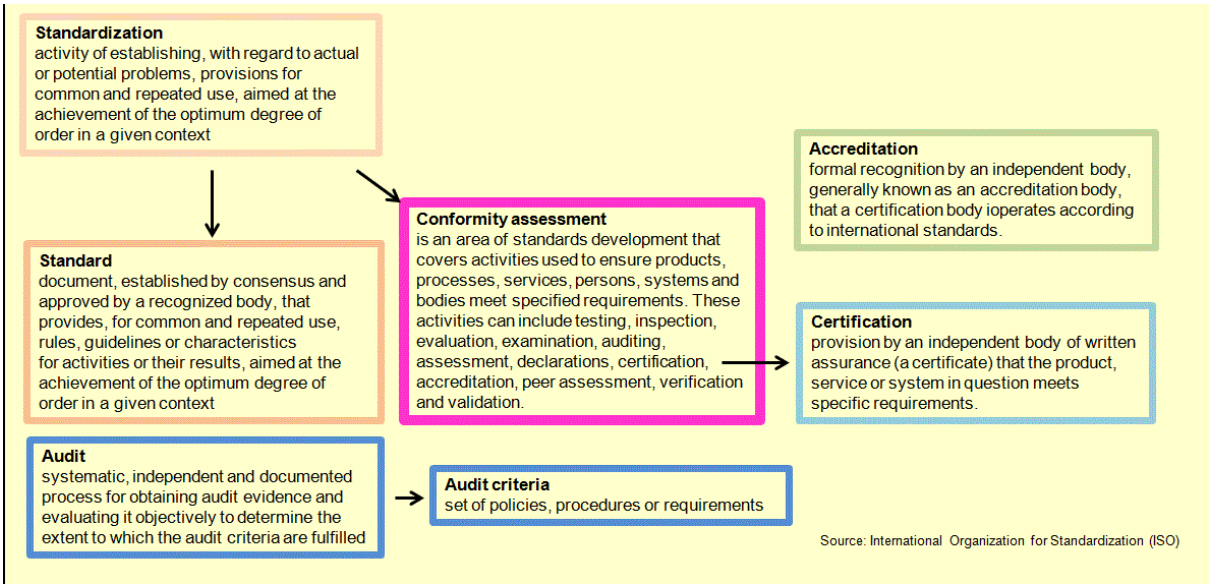
- providing information to enhance consumers' demand.

Recalling of the three high priority tasks, Task 4 was to “Identify and make publicly accessible information on existing certification schemes, possible use of Ad Interim Group report on ESM criteria recommendations as a start. Collect information on existing certification schemes, an assessment of the extent to which they are currently used, and the elements that appear common in the establishment of credible and reliable programs. …”



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The current examples of strategies for ESM, both industry-led and Government, voluntary and mandatory, were drawn upon to address the high priority tasks, in doing so the lower priority Task 2 was addressed.

4. Additional topics raised by Project Group Participants

The Project Group participants requested more information on Producer Responsibility in the context of providing incentives or disincentives to Environmentally Sound Management. Furthermore information from governments on incentives used to encourage facilities to introduce environmental management systems was kindly made available by the OECD Secretariat.

Producer responsibility scheme incentives or disincentives

At the time of writing 2014, the OECD is in the process of revising its 2001 published "Extended Producer Responsibility: A Guidance Manual for Governments". There were already some 400 EPR schemes in operation, both in developed countries and in countries with economies in transition. Some 48% of existing schemes were based in the USA and 42% in Europe, with Asia and Latin America both on 4%. Of the grand total, some 35% of EPR schemes in place were on waste electrical and electronic equipment (WEEE).

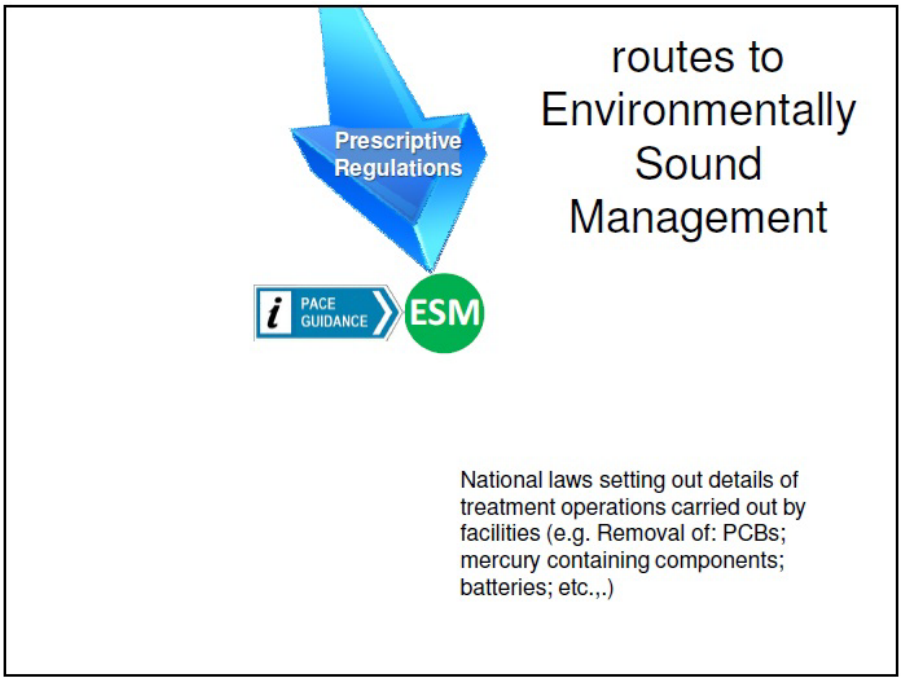
Regarding incentives, one of the key rationales for EPR schemes is to incentivise the design for the environment, so that products contain less or no hazardous materials that would present problems for the end-of-life management. In general experiences recounted at the Global Forum on EPR in Tokyo 2014 were that the incentive for design for recycling, otherwise design for the environment, was weak.

Regarding disincentives associated with EPR schemes those included the undermining of investment, uncertainty surrounding ownership of material and forcing vertical integration through the value chain, as well as the abuse of the market power given to producer responsibility organisations. SMEs in the recycling sector typically express concerns that their access to recyclables and their profitability are threatened by certain EPR scheme contractual arrangements making just a few recyclers their service suppliers.

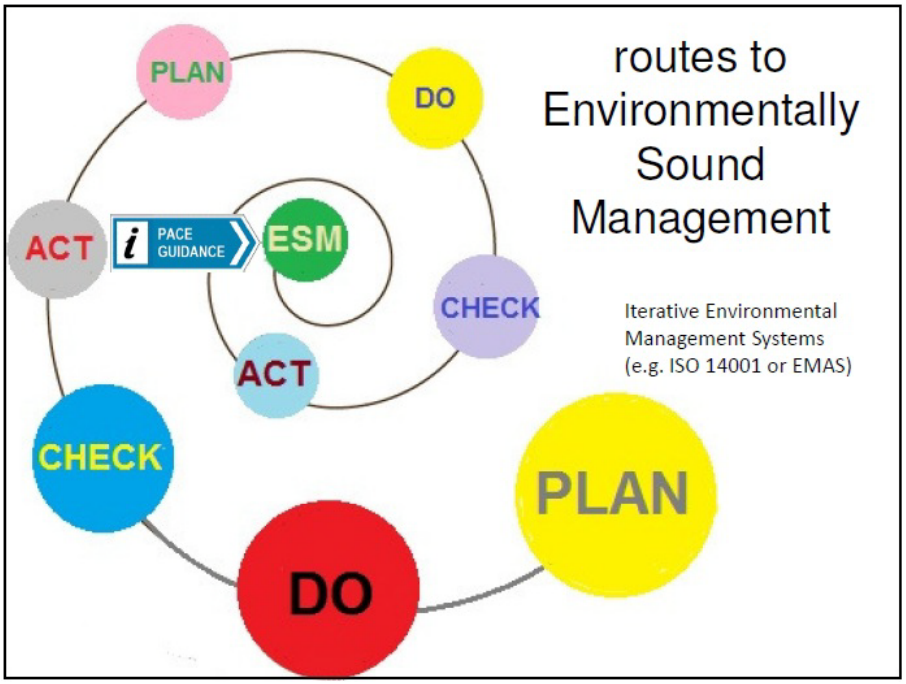
Incentives for facilities to introduce an EMS

It has been observed that Countries ensure Environmentally Sound Management by different means or a combination of means carried out by governments and other stakeholders, for example:

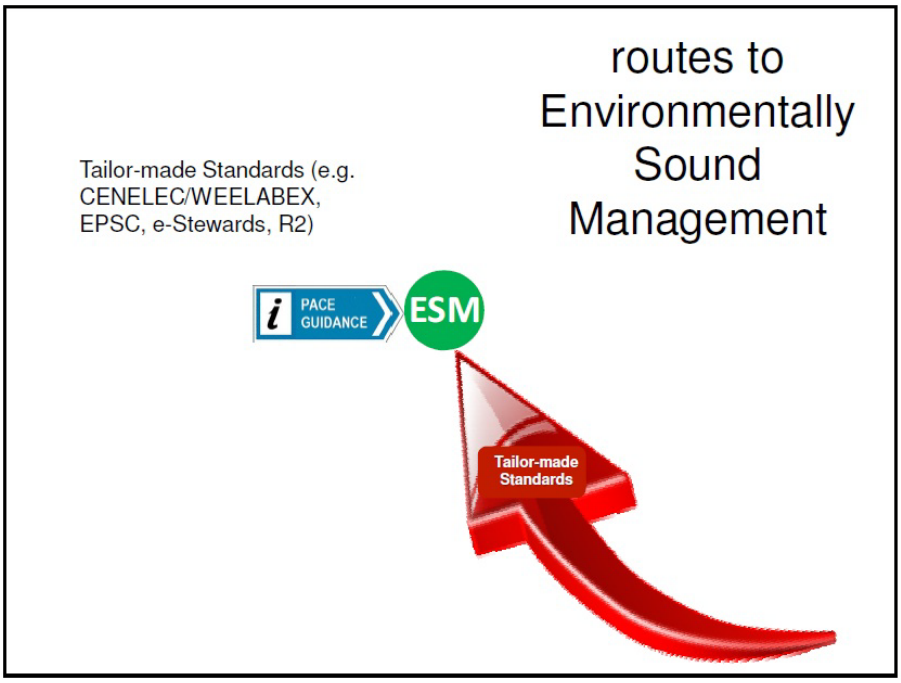
- by strict prescriptive legislation on what to do and how to do it, or



- by ensuring proper application of a generic Management System with a plan – do – check - act – model that will determine what to do and how to do it, in combination with less prescriptive framework legislation, or



- by tailor made sector specific Management Systems on what to do and how to do it, in combination with less prescriptive framework legislation.



There are a range of incentives that governments that have a comprehensive regulatory infrastructure in place use to encourage facilities to introduce environmental management systems, these include:

- ✓ reducing the frequency of regulatory inspections or of monitoring requirements and facilitating emission controls which can be performed by the staff itself;
- ✓ reducing reporting requirements that are duplicating those of environmental management systems in place;
- ✓ expediting and consolidating environmental permits/licences and auditing and certifying facilities;
- ✓ waiving certain environmental regulations, that are duplicating the provisions of environmental management systems: for example, in certain European countries where environmental reporting is mandatory through national law, EMAS-registered facilities are exempted from environmental reporting under national law;
- ✓ providing technical assistance and information;
- ✓ providing financial support (facilities having an EMS may be wholly or partly exempted from registration/permit fees, part of their EMS implementation costs is reimbursed, etc.);
- ✓ providing special recognition or award;
- ✓ providing preferences through public procurement;
- ✓ providing information about the value of such systems.

Governments, of course, are free to use any form of incentive they choose. However, caution is recommended, in order to avoid introducing measures which could have a counter-productive effect, e.g., relief measures, such as the exemption from being subject to a regulation.

Governments may seek to encourage SMEs to implement an environmental management system through various incentives or relief measures. Additional examples of incentives include:

- ✓ the development of EMSs, specifically designed for SMEs. For example, the Eco-Action 21 in Japan includes its own auditing and certification procedures;
- ✓ relaxing verification and reporting procedures, by spacing out the due dates of inspections and reporting less frequently (for example, every three years instead of every year);
- ✓ exemption from certain national regulations which may duplicate the EMS's provisions;
- ✓ free provision of information, advice and expertise concerning EMSs and their benefits, related environmental regulations and subsidisation programmes;
- ✓ public recognition and advertising of such facilities through the publication of their environmental performance or special registers;
- ✓ financial incentives, such as assistance for investments, financial support for workers' training on environmental matters, reimbursement of part of the auditing and certification costs (sometimes up to 75 % of the external consultant costs), and reduction of inspection fees and preference in public procurement.

5. Recommendations

Country-specific Recommendations in relation to Project Group 5.1 Tasks

1. Countries should review measures in place to implement obligations under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

[In response to Project Group 5.1 Task 1]

2. OECD-member countries should review measures in place to support applicable recommendations contained within the OECD Council Recommendation C(2004)100 on the Environmentally Sound Management of Waste and the OECD Technical Guidance for the Environmentally Sound Management of Specific Waste Streams: Used and Scrap Personal Computers (ENV/EPOC/WPWPR(2001)3/FINAL).

[In response to Project Group 5.1 Task 1]

3. In the event that domestic Environmental Management Systems (EMS) are employed as part of a national approach to ESM, special consideration should be given to provide specifically tailored EMS systems for SMEs. Whatever EMS system will be selected, it is recommended that the government or large companies have a programme in place to provide support for SMEs in terms of information and know-how sharing.

[In response to Project Group 5.1 Task 1]

4. Domestic policies and/or programmes implemented in accordance with Basel PACE technical guidance shall facilitate the ability to meet applicable international agreements and protocols and domestic legal requirements concerning the management of such wastes.

[In response to Project Group 5.1 Task 1]

5. Countries should :

a) provide a regulatory and administrative infrastructure;
b) encourage voluntary schemes;
c) encourage financial support aimed at meeting the objectives related to ESM;
d) provide stakeholders with knowledge about voluntary schemes;
e) provide incentives to start up voluntary schemes;
f) provide information to enhance consumers' demand for ESM of waste from computing equipment.

[In response to Project Group 5.1 Task 3]

6. Countries should aim to provide publicly accessible information on:

a) domestic policies and/or programmes regarding waste from computing equipment;
b) financial support ;
c) incentives;
d) existing certification schemes;
e) key steps to get certified (e.g.: http://ec.europa.eu/environment/emas/tools/emaseasy_en.htm).

[In response to Project Group 5.1 Task 4]

Facility-specific Recommendations in relation to Project Group 5.1 Tasks

1.

from Annex I to decision BC-11/1

Non-exhaustive list of actions that may be considered for the implementation of the framework for the environmentally sound management of hazardous wastes and other wastes in the short and medium term by parties, regional centres and other stakeholders

This non-exhaustive list of actions is based on the recommendations contained in paragraphs 46–48 of the framework for the environmentally sound management of hazardous wastes and other wastes adopted through the present decision. The actions proposed in this list are also directly related to section VI of the framework on the role of key stakeholders.

Facility level
Waste management facilities

- Ensure that all applicable national legislation is complied with and that all relevant licences/permits/authorizations are in place;
- Have an applicable environmental management system in place;
- Consider adhering to applicable voluntary third-party verified certification schemes;
- Take sufficient measures to safeguard occupational safety and health and the environment;
- Comply with applicable national instruments and codes of practice in relation to occupational safety and health;
- Have an adequate monitoring, recording and reporting programme;
- Have an appropriate and adequate training programme for personnel;
- Have an adequate emergency plan;
- Have an adequate plan for closure and after-care;
- Implement corrective actions, as they relate to the recommendation in subparagraph 46 (b) of the ESM framework, to meet goals established in the implementation of strategies within the context of the framework.

[In response to Project Group 5.1 Task 2]

2. Facilities should review measures in place to ensure coherence with the Basel Convention's Practical Manuals for the implementation of environmentally sound management under the Framework for the Environmentally Sound Management of Hazardous Wastes and Other Wastes.

[In response to Project Group 5.1 Task 2]

3. Facilities should review measures in place to support applicable recommendations contained within PACE guidance documents and other applicable guidance under the Basel Convention.

[In response to Project Group 5.1 Task 2]

4. Facilities located in OECD-member countries should also review measures in place to support applicable recommendations contained within the OECD Council Recommendation C(2004)100 on the Environmentally Sound Management of Waste and OECD Technical Guidance for the Environmentally Sound Management of Specific Waste Streams: Used and Scrap Personal Computers (ENV/EPOC/WPWPR(2001)3/FINAL).

[In response to Project Group 5.1 Task 2]

5. Facilities should obtain sufficient knowledge of existing collection and take-back schemes

[In response to Project Group 5.1 Task 3]

6. Facilities should obtain sufficient knowledge of existing voluntary schemes

[In response to Project Group 5.1 Task 3]

7. Facilities should make sufficient information publicly available in order to demonstrate to Competent Authorities the nature of their activities regarding treatment of computing equipment and that they are Environmentally Soundly Managed.

[In response to Project Group 5.1 Task 4]

ANNEX A - Compilation of answers received

Re: 2013 questionnaire addressed to BCRCs and members of PACE Project Groups from Submitting Parties

QUESTION	Compiled answers
3.Please send examples of policies for ESM of computer equipment waste, or briefly describe such policies here below.	National policies are not established yet in the country
	There is no specific regulation for EEE However, some instruments or political strategy could be used directly or indirectly for EEE, notably: -Code of Environment -National Action Plan of Environment -Basel, Rotterdam, Stockholm and Bamako Conventions (Some countries which have signed and ratified these international Conventions can be transposed them at the national level) -National e-waste strategies have been drafted
	-have enacted 'The Hazardous Waste (Control of Export, Import and Transit) Act and its Regulations" to strengthen the control on export, import and transit of hazardous wastes in accordance with the principles and provisions of the Basel Convention. -Our National Environment Agency (NEA) had also started controlling the import/export of UEEE through its TRADENET system since March 2008. Under TRADENET control system, all declarations for import/export of UEEE will be routed to NEA for processing and clearance. Third-party surveyor certification is required for the import of UEEE. Prior informed consent is required for import/export of EEE that are not suitable for reuse and intended for recycling/recovery (please also refer to uploaded circular from relevant authorities).
	There are currently no policies for the ESM of waste computing equipment.
4.Please send examples of incentive schemes* that are: voluntary, financial, regulatory, or administrative or briefly describe such policies below	In general, there are not national voluntary, financial, regulatory or administrative incentives. However, there are some examples: - Regionally: in the area of the Southern Common Market (MERCOSUR) a project called Econormas MERCOSUR has a line of action aimed at sustainable production and consumption. In this area WEEE has been selected as a priority sector, providing technical, financial and training assitance for the implementation of environmental management systems and best practices. - At national level: National Environmental Authority has provided financial assistance for investments to develope projects of recovery of WEEE for social reuse through donations and subsequent dismantling and elimination of the parts unrecoverable. - At local level: financial support for companies to pay salary workers in dismantling WEEE companies.
	Enforcement training activities to raise awareness of competent authorities and enforcement officers about the adverse impacts of illegal import of e-waste on human health and the environment and to train authorities that are responsible for the monitoring and screening of the legal trade-of used equipment and, conversely, for detecting and preventing illegal traffic of e-waste. Support for workers training on environmental matters
	- there are some grants / funding for respective environmental initiatives. -There are also regular industry events to promote 3Rs & public education etc co-organised by the government agencies, OEMs, institutions, associations & recyclers etc. -Industry is also kept well informed on all regulatory development, new grants or training programmes etc by related agencies.
	There are currently no incentive schemes for the ESM of waste computing equipment
5.Notes on the range of incentives that some governments are already using to encourage facilities to introduce environmental management systems	
6.Please identify barriers to implementing collection and take-back schemes	-The absence of regulation. -The refusal of the local industry and international corporate companies to implement locally the principle of responsibility and thus cover the costs associated with the sustainable management of WEEE after use. -The extension of the country in surface. -Lack of capacity and feasibility in the country of services to recover components and materials, especially metals

	Lack of absence of domestic legislation to provide customs and environmental officials with the necessary powers to request the take back of illegally imported containers -Absence of financial mechanism -Absence of clear definition of the waste -hazardous waste or not -sample for controlling the containers -Non respect of procedures of Notifications and Movements of transboundary BC -Lack of coordination at national, regional and international levels _Responsibility of Producer is not clearly defined
	consumers' expectation of residual values of the UEEE/WEEE; volume consolidation where at times it may be too small or too few pieces; logistics arrangement where if without centralised consolidation, may be too costly to collect at different locations, different timing etc
	Major barriers to implementing collection and take-back schemes include: - Lack of a proper assessment and understanding of the local situation as it pertains to e-waste generation and management. - Lack of a legal and regulatory framework to support the safe collection, management and disposal of e-waste. - Lack of OEMs physically present in the local market. Computing equipment and other electrical items are not manufactured in the country for the most part and distributors and end users are largely responsible for the importation of such equipment locally. - Lack of awareness on the issues and various costs associated with improper e-waste disposal/storage and the means through which such equipment can be properly managed and disposed. - Limited capacity and capability locally to safely collect and treat with these wastes.
7.Please give examples of barriers to starting up voluntary schemes?	-The refusal of the local industry and international corporate companies to implement locally the principle of responsibility and thus cover the costs associated with the sustainable management of WEEE after use. -Lack of capacity and feasibility in the country of services to recover components and materials, especially metals
	-Define the responsibility of the producer -Ban the illegal importation of WEEE -Counterfeit products -Who is supporting the cost of recycling/Elimination -Lack of infrastructure of recycling/elimination plants standards -Absence of specific legislation on e-waste -Lack of human resources for the control of illegal traffic -Lack of coordination between the structures in charge of control
	free rider; public awareness; disposal traits unique to certain countries where consumers prefer selling their UEEE/WEEE to door-to-door collectors for small sum; program funding for longer term sustainability etc
	The main barriers to starting up voluntary schemes are: - Lack of awareness and/or willingness among distributors to establish such schemes. - Lack of awareness amongst the general public. - Limited capacity and capability locally to safely collect and treat with these wastes.
8.What incentives or support* is needed to overcome barriers identified in (Q. 4, 6 and 7)?	-National and international funding for the installation of services recovery of WEEE and its components. -Knowledge and experience in systems management and successful business models.
	-Define the responsibility of the producer -Introduce an eco-tax -Controlling the remittance of eco-tax on sales of EEE -Take back all material used by distributors: Principle “one for one” -Information / sensibilization / communication -Setting up an adequate financial mechanism, equitable and a rational simulation of the market
	More towards 6 & 7: educational at younger age on proper disposal/recycling/environmental impact etc; industry-led multi stakeholders programmes for assorted EEE brands; networking collectors to larger scale recycling facilities to ensure proper disposal of collected UEEE/WEEE etc
	Initially, more support is required in the areas of raising awareness of all key stakeholders on the issue of e-waste and importance of ESM, especially among generators and regulators. There is also a great need to fully assess the local situation to ascertain the various flows, quantities, and capabilities for
9.Please identify the existing certification scheme(s) / guideline(s)?	There is not one yet
	Certifications : ISO 9001, ISO14001, OHSAS 18001, R2 etc
	There are currently no existing certification scheme(s) for the ESM of computing equipment. However, a largely health and safety-based certification scheme has been developed by an association of energy industries and which is known as the Safe to Work certification scheme (STOW-TT). This scheme will only be relevant to the local waste brokers involved in the collection and trade of e-waste if they wish to be service providers to these companies.
10. What are the key steps to get certified	aligning to the audit requirements; top management's commitment to put in required resources, e.g. manpower, processes, technology, equipment etc

	Service providers must assess their risks and with use of a specially developed guidance manual, they develop and implement systems to minimize their risks. Once this has been achieved, either internally or with the assistance of a consultant, the company can then apply to the certification body for assessment. A STOW assessor is appointed, evaluates all documentation and interviews employees during the assessment. Following this, certification is granted once the minimum scores have been achieved.
11. Please provide the link to the certification scheme website	http://www.iso.org/iso/iso14000 www.r2solutions.org http://www.stowtt.info/
12. What are the key components or elements of the scheme(s) / guideline(s)?	highest international standards with best practices which are operationally, security, safety & environmentally accountable for facilities to reference to
	STOW-TT Minimum HSE Requirements: Element 1 - HSE Management, Leadership and Accountability Element 2 – Legal Requirements and Document Control Element 3 – Risk and Change Management Element 4 – Planning, Goals and Targets Element 5 – HSE Competency and Training Element 6 – Security Element 7 – Health and Hygiene Element 8 – Environmental Management Element 9 – Incident Reporting and Investigation Element 10 – Crisis and Emergency Management Element 11 – Monitoring, Audit and Review
13. Is the scheme(s) / guideline(s) compatible with PACE guidelines?	Yes as PACE Guidelines are also international and developed by credible stakeholders with relevant expertise
	This has not been assessed and will have to be evaluated before being able to respond to this question.
14. How are governments, NGOs and industry using facility certification mechanisms now?	The national government is devoting to develop a baseline for the services associated with the management of WEEE that allows companies to access the possibility of obtaining an international certification for its activities through ECONORMAS MERCOSUR Project
	to ascertain if the facility is already accredited with required standards with environmentally sound best practices; or as part of requirements in their process for vendor consideration where facility must be certified to these international standards etc
	Generally certification mechanisms are used in order to regulate the largely heavy gas-based industries and their service providers within the context of health, safety and, to a lesser extent, the environment.

ANNEX B - Identified standards / e-waste management schemes

Key elements of: Canadian Stewardship programs, WEEELABEX, R2, e-Stewards, AS NZ 5377

	Canadian Stewardship programs	WEEELABEX	R2	e-Stewards	AS NZ 5377
STANDARD/S	- Recycler Qualification Program (RQP) - Electronics Reuse & Refurbishing Program (ERRP)	-Collection -Logistics -Treatment	The Responsible Recycling ("R2") Standard for Electronics Recyclers-2013	e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment-2013	Collection, storage, transport and treatment of end-of-life electrical and electronic equipment
INTENT	Minimum requirements for use in the provincial electronics recycling Stewardship Program • Recycler Qualification Program (RQP) for End of Life Electronics Processors and Recyclers • Electronics Reuse & Refurbishing Program (ERRS)	-To protect the Environment using European standards -Based on the Precautionary Principle	Help prospective purchasers make informed decisions and have increased confidence that used and EOLE are managed in an environmentally responsible manner, protective of the health and safety of workers and the public, and all data on all media devices is secure until destroyed	To provide a verifiable system With specific performance requirements: -Protect Customer Data and privacy -Protect OH&S, & communities surrounding facilities -Prevent pollution, reduce environmental impacts, & efficient resources use -Fair labor practices - excluding forced and child labor, and prison operations -Restrictions on disposal of hazardous e-waste to final disposition -Conformity with international laws, treaties, and agreements -Application of the above throughout the Recycling Chain	-Guidance and requirements -Safe and environmentally sound collection, storage, transport, and treatment of EOLE -Maximise reuse And recovery -Reduce or eliminate e-waste going to final disposal operations -Safeguard worker health -Minimise harm to the environment

GOVERNANCE	-Created by electronics industry -Operated by the Electronic Products Recycling Association (EPRA)-non---profit -Implementation Guidance provided	-WEEE Forum (producers) -Provide basis for 39 EU WEEE producer compliance Schemes • Web-based Tool developed by The WEEE Forum to Report recycling & Recovery rates -Contractual Relationship for 2/3 of reported WEEE collection in EU	-R2:2013 developed by a multi-stakeholder group–R2 Technical Advisory Committee (TAC) -Accredited certified EH&S Management System -Flexible rather than prescriptive approach	-Created by the Basel Action Network with Leaders in the Recycling industry -Sanctioned interpretations -Guidance -Oversight	Prepared by the Joint Standards Australia/Standards New Zealand Committee on e-waste
SCOPE	-RQP-EOLE Processors & Recyclers -ERRS-Reuse/Refurbishing Organizations	-Europe -Covers all kinds of Waste Electrical and Electronic Equipment (WEEE)	-Global -Electronics recyclers (includes brokers, refurbishers, collectors, resellers, etc) -Facility-not corporate	-Global with some External limitations -Corporate not site specific -EE, property & Assets under Ownership or control -Applies to all workers, including contract, volunteer, & interns	- Australia and New Zealand. - Currently voluntary. - To be used by all parties involved in the collection, storage, transport and treatment of end-of-life electrical and electronic equipment. - Covers all electrical and electronic equipment designed for a supply voltage not exceeding 1000 volts for ac and 1500 for dc. - Facilities including collection, transport, storage, recovery, reuse, treatment and disposal
CONFORMITY VEIFICATION	Assurance Process-not an accredited program -Application to EPRA & application Verification -Audit/submission of The Audit Report -Stewardship Program Approval	-Rules to decide Whether an undertaking's processes deserve to be WEEELABEX approved -Trained auditors conducting audits using the same documents -Plan for this to become a certified EU/CENELEC Standard-2015	Accredited certified R2 system with applicants required to also be certified to an EH&S MS	Accredited certified EMS	Accredited certified assurance process in development. Expect to be completed by mid-2015. Being developed by JAS-ANZ

The document "Comparison of Selected End-Of-Life Electronics Processing Programs with the Requirements in the IEEE 1680 Series of Standards for End-of-Life Electronics Processing - Summary Report to Inform The IEEE 1680.1 Revision Working Group", Copyright 2012 © EPEAT and the Green Electronics Council includes the following table as overview of findings:

SUMMARY OF FINDINGS IN COMPARISON OF STANDARDS TO EPEAT EOL PROCESSING REQUIREMENTS					
APPLICABLE 1680.2 SECTION NUMBER	WEEELABEX	E-STEWARDS	R2	RQP/ERRP	AS/NZS 5377:2013[1]
4.6.2.1 Accredited certification program	No	Yes	Yes	No	Yes – in progress
4.6.2.1 IAF accredited Certification	No	Yes	Yes	No	No
4.6.2.1(b) Legal requirements	Yes	Yes	Yes	Yes	Yes
4.6.2.1(c) Definition of covered equipment	Yes	Yes	Yes	Partial	No
4.6.2.1(c) Definition of materials of concern	Yes	Yes	Yes	Yes	Yes
4.6.2.1(c) Written management plan for Materials of Concern to protect EH&S	Partial	Partial	Yes	Partial	Partial – documented risk assessment process and an emergency response plan
4.6.2.1(d) EH&S Management System	Yes	Yes	Yes	Yes	Yes
ISO 14001	No	Yes	No	No	No
OHSAS 18001	No	No	No	No	No
Prevention of Prison labour	No	Yes	No	Yes	No
Proof of Liability & Environmental Insurance	Yes	Yes	Yes	Yes	No - This isn't categorically stipulated in the standard, but clauses like 1.6.1 (c) could be applied in respect of insurances.
EH&S Controls	Yes	Yes	Yes	Yes	Yes
Environmental, health and safety Training	Yes	Yes	Yes	Yes	Yes
Site Closure Plan	Partial	Yes	Yes	Yes	See emergency response plan
Records retention & documentation	Yes	Yes	Yes	Yes	Yes
4.6.2.1(e) Export Controls	Yes	Yes	Partial	Yes	Partial
4.6.2.1(f) Testing equipment/ components going for reuse, repair or	Yes	Yes	Partial	Yes	Not in scope

[1] Information provided by Ministry for the Environment, New Zealand, 2015.

refurbishment prior to export					
4.6.2.1(g)a Disallowance of Incineration / waste-to-energy facilities for materials containing mercury, halogenated compounds, and beryllium	No	Yes	Partial	Partial	Yes
4.6.2.1(g)b Disallowance of non-hazardous disposal facilities for disposal of “materials of concern”, except as required by law.	Partial	Partial	Partial	Yes	Yes
4.6.2.1(h) Tracking Throughput	Yes	Yes	Yes	Yes	Yes
Mass Balance	Yes	Yes	No	No	Yes
4.6.2.1(i) Tracking Materials Of Concern to Final Disposition	Yes	Yes	Yes	Yes	Yes

Note: Shaded rows indicate topics that go beyond the IEEE standards 1680.2 and 1680.3 section 4.6.2.1 requirements - GEC requested these be included in order to provide a broad review that will better inform the revision process for 1680.1.

ANNEX C – Reference material

ORGANISATIONS/ UN REGIONS / COUNTRIES	Electrical & Electronic Equipment and e-Waste specific Guidelines / tailor-made standards / Documents	Topic	Link
UNITED NATIONS (UN)			
	Guideline on the Refurbishment of Used Mobile Phones (Revised and Approved Draft). Basel Mobile Phone Partnership Initiative Project 1.1. (March 25, 2009).	Refurbishing	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-PART-GUID-MPPI-Project1.1.English.pdf
	Guideline on the Collection of Used Mobile Phones (Approved Draft). Basel Mobile Phone Partnership Initiative Project 2.1. (March 25, 2009).	Collection	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-PART-GUID-MPPI-Project2.1.English.pdf
	Guideline on Material Recovery and Recycling of End-of-Life Mobile Phones (Approved Draft). Basel Mobile Phone Partnership Initiative Project 3.1. (March 25, 2009).	Recycling	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-PART-GUID-MPPI.Project3.1.English.pdf
	Guideline on the Awareness Raising-Design Considerations (Revised and Approved Draft). Basel Mobile Phone Partnership Initiative Project 4.1. (March 25, 2009).	Awareness Raising	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-PART-GUID-MPPI.Project4.1.English.pdf
	Guideline for the Transboundary Movement of Collected Mobile Phones (Approved Final Draft). Basel Mobile Phone Partnership Initiative Project 2.1. (March 25, 2009).	Transboundary Movement	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-PART-GUID-MPPI-TRANS-Project2.1.English.pdf
	Guidance document on the environmentally sound management of used and end-of-life mobile phones. Basel Mobile Phone Partnership Initiative (Sep 15, 2008)	Refurbishing & Recycling (summary & consolidation of MPPI guidelines)	http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-EWASTE-GUID-PUB-MobilePhones-201302.English.pdf
	One Global Understanding of Re-Use - Common Definitions. Solving the E-waste Problem (StEP). (March 5, 2009).	Reuse	http://www.step-initiative.org/pdf/white-papers/StEP_TF3_WPCommonDefinitions.pdf
	E-waste Take-back System Design and Policy Approaches. Solving the E-waste Problem (StEP). (January 28, 2009).	Take-back	http://www.step-initiative.org/pdf/white-papers/StEP_TF1_WPTakeBackSystems.pdf

	Social and Environmental Responsibility in Metals Supply to the Electronic Industry. Global e-Sustainability Initiative (GeSI). (June 20, 2008).	Recycling	http://www.gesi.org/files/20080620_ghgm_ser_metalstoelectronics.pdf
	The Entrepreneur's Guide to Computer Recycling. United Nations Educational, Scientific and Cultural Organization (UNESCO).	Recycling	http://www.ticethic.com/guide
ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)			-
	Technical Guidance for the Environmentally Sound Management of Specific Waste Streams: Used and Scrap Personal Computers (18 Feb 2003).	Recycling	http://www.olis.oecd.org/olis/2001doc.nsf/LinkTo/NT000009E2/$FILE/JT00139462.PDF
AFRICA			-
INDIA	Guidelines for Environmentally Sound Management of E-waste. India Central Pollution Control Board (CPCB) and Ministry of Environment & Forests (March 12, 2008).	Recycling (Chapter 5) Reuse (Chapter 5)	http://www.cpcb.nic.in/e_Waste.php
KENYA	E-waste Management in Kenya. Hewlett Packard, DSF, Empa. (July 2008).	Assessment	http://ewasteguide.info/system/files/Waema_2008_KICTANet.pdf http://ewasteguide.info/Waema_2008_KICTANet
MOROCCO	Technical report on the assessment of e-waste management in Morocco. Hewlett Packard, DSF, Empa. (August 2008).	Assessment	http://ewasteguide.info/system/files/Laissaoui_2008_CMPP.pdf http://ewasteguide.info/Laissaoui_2008_CMPP
SOUTH AFRICA	E-waste Assessment South Africa. Hewlett Packard, DSF, Empa. (November 2008).	Assessment	http://ewasteguide.info/system/files/Finlay_2008_eWASA.pdf http://ewasteguide.info/Finlay_2008_eWASA
UGANDA	E-waste assessment in Uganda: A situational analysis of e-waste management and generation with special emphasis on personal computers. UNIDO, Microsoft. (2008).	Assessment	http://ewasteguide.info/system/files/Finlay_2008_eWASA.pdf http://ewasteguide.info/Wasswa_2008_UCPC-Empa
AMERICAS			-
LATIN AMERICA AND THE CARRIBEAN			-

MERCOSUR	Buenas Prácticas para la Gestión Sostenible de Residuos de Aparatos Eléctricos y Electrónicos (RAEE)	End-of-life	http://econormas-mercosur.net/images/Publicaciones-gopa-econormas-mercosur.zip
NORTH AMERICA			
CANADA	Recycler Qualification Program (RQP)	Recycling	http://rqp.ca/
	Electronics Reuse & Refurbishing Program (ERRP)	Reuse and Refurbishing	http://rqp.ca/
USA	Plug-In To eCycling: Guidelines for Materials Management. USEPA (May 2004)	Recycling	http://www.epa.gov/epawaste/partnerships/plugin/pdf/guide.pdf
	Responsible Recycling "R2" Practices for use in Accredited Certification Programs for Electronics Recyclers (October 30, 2008).	Recycling	http://www.decideagree.com/R2%20Document.pdf
	Closing the Loop Electronics Design to Enhance Reuse/Recycling Value. Green Electronics Council (January 2009).	Design for Reuse/Recycling	http://www.greenelectronicscouncil.org/documents/0000/0007/Design_for_End_of_Life_Final_Report_090208.pdf
	Best Management Practices for Electronic Waste. California Integrated Waste Management Board (April 2004).	End-of-life	http://www.ciwmb.ca.gov/Publications/electronics/63004005.pdf
	Dell's Recovery and Waste Disposition Channels Environmental Guidelines (December 2005)	Recycling	http://www.dell.com/downloads/global/corporate/environ/Disposal_Guidelines.pdf
	Hewlett-Packard Standard 007-2 Vendor Requirements for Hardware Recycling (October 13, 2008)	Recycling	http://www.hp.com/hpinfo/globalcitizenship/environment/recycle/finalrecstds.pdf
	e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment	Reuse/Recycling Global Certification	h http://e-stewards.org/wp-content/uploads/2014/09/eStewards_Standard_Review_Version.pdf (This is a free Review Version of the Standard)
	Arcadian Solutions, "Understanding the Certification Process for End-of-Life Electronics" (2013)	Certification	http://arcadiansolutions.com/wp-content/uploads/R007-eole-certification-process-2012-12-21.pdf
	Arcadian Solutions, "Comparison of selected end-of-life electronics processing programs with the requirements in the IEEE 1680 series of Standards for end-of-life electronics processing" (2013)		http://arcadiansolutions.com/wp-content/uploads/R008-EOLE-Comparison-2012-12-21.pdf

ASIA			
AUSTRALIA / New Zealand	Australian/New Zealand Standard DR AS/NZS 5377 for collection, storage, transport and treatment of UEEE		http://shop.standards.co.nz/catalog/5377:2013%28AS%7CNZS%29/scope?
JAPAN	Eco-Action 21 in Japan		http://www.env.go.jp/policy/j-hiroba/ea21/guideline2009_en.pdf
EUROPE			
EU-28	Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE). Consolidated version.	Recycling (various Articles)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002L0096:20080321:EN:PDF
	WEEELABEX	collection, handling, storage, recycling, preparation for re-use and disposal	http://www.weee-forum.org/weeelabexproject
	CENELEC EN 50625-1 on Collection, Logistics & Treatment of WEEE	collection, handling, storage, recycling, preparation for re-use and disposal	http://www.cenelec.eu/
	Milieu Ltd and RPA Ltd, "Study on the Cost and Benefits of registration with the Environmental Management and Audit Scheme (EMAS) to Registered Organisations" (2009)		http://ec.europa.eu/environment/emas/pdf/news/costs_and_benefits_of_emas.pdf
ORGANISATIONS/ UN REGIONS / COUNTRIES	**Generic Guidelines / Standards / Documents**	**Topic**	**Link**
UNITED NATIONS (UN)			
	UN-EP Basel Convention framework for the environmentally sound management of hazardous wastes and other wastes UNEP/CHW.11/3/Add.1/Rev.1.	Overall Framework for ESM	http://www.basel.int/TheConvention/ConferenceoftheParties/Meetings/COP11/tabid/3256/ctl/Download/mid/10397/Default.aspx?id=256&ObjID=2744
	Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention.	General Basel guidance	http://www.basel.int/meetings/sbc/workdoc/framewk.doc
	Draft technical guidelines on the environmentally sound recycling/reclamation of metals and metal compounds (R4). Basel Convention.	Recycling (Metals)	http://www.basel.int/meetings/cop/cop7/docs/08a3e.pdf
ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)			

	Council Recommendation C(2004)100 on the Environmentally Sound Management of Waste (9 Jun 2004)	End-of-life (General ESM)	http://webdomino1.oecd.org/horizontal/oecdacts.nsf/linkto/C(2004)100
	Guidance Manual for the Implementation of the Council Recommendation C(2004)100 on the Environmentally Sound Management of Waste. (2007).	End-of-life (General ESM)	http://www.oecd.org/dataoecd/23/31/39559085.pdf
	OECD Global Forum 2014	EPR	http://www.oecd.org/env/waste/gfenv-extendedproducerresponsibility-june2014.htm
	OECD Extended Producer Responsibility - A Guidance Manual for Governments	EPR	http://www.oecd-ilibrary.org/environment/extended-producer-responsibility_9789264189867-en
OTHER			
	ISO 14001 Environmental Management Systems - Requirements with Guidance for Use (second edition 2004-11-15).	Environmental Management Systems	http://www.iso.org
	ISO 14004 Environmental Management Systems - General Guidelines on Principles, Systems and Support Techniques (second edition 2004-11-15).	Environmental Management Systems	http://www.iso.org
	Occupational Health and Safety Management Systems – Specification (BSI - OHSAS 18001: 1999)	Occupational Health and Safety Management Systems	http://www.iso.org
	EMAS	Environmental Management Systems	http://ec.europa.eu/environment/emas/index_en.htm
	Recycling Industry Operating Standard (RIOS), Institute of Scrap Recycling Industries (ISRI)	Combined EMS, QMS, OHSMS for recyclers	http://www.firstenvironment.com/html/environmental_management_syste7.html
	Tools for Environmentally Sound Management, Bureau of International Recycling (BIR) (EN / ES / FR / CN)	General EMS for Recyclers	http://www.bir.org/publications/esm-tools/
	Tools for Occupational Health and Safety Management, Bureau of International Recycling (BIR) (EN)	Occupational Health and Safety Management for recyclers	http://www.bir.org/publications/OHSMS-Tools/