出國報告（出國類別：出席國際會議）

出席「巴塞爾公約第 11 次締約國大會」

服務機關：行政院環境保護署
姓名職稱：賴瑩瑩 副處長
洪榮勳 專業研究員
派赴國家：瑞士
出國期間：102 年 5 月 1 日至 5 月 12 日
報告日期：102 年 7 月 20 日

摘要

聯合國環境署巴塞爾公約、鹿特丹公約及斯德哥爾摩公約聯合秘書處，於今（2013）年 4 月 28 日至 5 月 10 日在瑞士日內瓦召開「巴塞爾公約第 11 次、斯德哥爾摩公約第 6 次及鹿特丹公約第 6 次締約國大會及第 2 屆同期特別會議」，計有 170 個國家、80 位部長/副部長，及近 2 千人出席與會。

我國與會代表以參加「巴塞爾公約締約國第 11 次締約國大會」相關會議活動為主，本次會議重點包括：

一、提高巴塞爾公約執行成效，包含解決巴塞爾公約禁運修正案的生效問題、通過有害廢棄物及其他廢棄物之環境友善化管理架構及提高法律明確性等。

二、觀察員與會方式。

三、研擬舊廢電子物品與持續性有機污染物等技術指引草案。

四、電腦設備夥伴計畫。

五、2014-2015 年業務及工作方案等。

本次與會亦透過周邊會議、雙邊交流等機會，與各國代表針對廢棄物輸出入管理政策、電子廢棄物管理及海關合作等議題進行交流，以維繫及建立長期互動關係，並適時分享我國廢棄物管理經驗暨成果。

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壹、目的

我國早期參與會議以瞭解巴塞爾公約最新動態及蒐集國外法規資料為主，近年來配合國內廢棄物管理需求，需針對各國法規之立法背景及制度設計進行深度研析，因此透過會議參與，建立長期國際人脈，方能達成前述目的。此外為促進我國之實際參與，本次與會積極拓展周邊會議及雙邊會談等各式參與管道。

本次與會我代表團關切議題如下：

一、 提高巴塞爾公約執行成效[1]（Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention）

二、 舊廢電子物品越境轉移技術指引草案[2]（Technical guidelines on transboundary movements of electronic and electrical waste and used electrical and electronic equipment）

三、 有害廢棄物及其他廢棄物之環境友善化管理架構[3](Framework for the environmentally sound management of hazardous wastes and other wastes)

四、 觀察員與會方式[4](Submission by the informal group on admission of observers)

[1] UNEP/CHW.11/CRP.3, UNEP/CHW.11/3

[2] UNEP/CHW.11/CRP.22, UNEP/CHW.11/L.1/Add.2

[3] UNEP/CHW.11/CRP.10, 23, UNEP/CHW.11/3/Add.1/Rev.1

[4] UNEP/CHW.11/CRP.20, UNEP/CHW.11/22

貳、過程

一、公約簡介

為解決廢棄物跨國運送衍生的環保及健康問題，在聯合國的推動下，「控制有害廢棄物越境轉移及其處置巴塞爾公約（Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal，以下簡稱巴塞爾公約）」，於 1992 年 5 月 5 日正式生效，截至 2013 年 4 月為止，全球計有 180 個國家及組織（含歐盟）簽署。

巴塞爾公約成立目的，為透過管制特定廢棄物輸出入，減少有害廢棄物的越境轉移問題，進而藉由環境無害化管理方式，減少或避免廢棄物衍生的環境問題。其具體落實方式，係透過（一）訂定規範：包括執行、技術指引及法律文件；（二）廢棄物輸出入前之通報機制；（三）14 個巴塞爾公約區域及協調中心進行資訊交流及教育訓練。

巴塞爾公約自 2002 年起，順應世界潮流暨因應財務缺口，逐步進行二項重大調整：（一）議題轉變：受到 OECD 環保規範和歐盟電子電機環保三指令（RoHS、WEEE、EuP）的影響，逐漸著重延伸生產者責任（EPR）等源頭管理議題。（二）擴大參與對象：配合 2002 年永續發展世界高峰會議的要求，公約除締約國代表、全球 14 個區域中心和國際性環保團體參與外，自 2002 年以來更是積極推動公私部門合作夥伴關係（Public-Private Partnership），以增加民間企業及非政府組織的實質參與。

二、行前準備

本次三公約會議期間為 2013 年 4 月 28 日至 5 月 10 日，本團團員參與會議時間為 5 月 3 日至 5 月 10 日，著重在巴塞爾公約會議及高階會議參與，與會成員、與會行程及行前準備摘要如后。

(一) 廢棄物管理處與會成員：如表 1。

表 1 廢棄物管理處與會成員

姓名	單位/職稱	任務分工
賴瑩瑩	環保署廢棄物管理處副處長	政策指示
洪榮勳	環保署廢棄物管理處專業研究員	國際交流
范建得	國立清華大學科技法律研究所教授	國際交流、法律議題
邱文琳	(財)環境資源研究發展基金會研究員	國際交流、專題參與
曹美慧	(財)環境資源研究發展基金會副研究員	專題參與、行政協助

(二) 與會行程：如表 2。

表 2 與會行程（5 月 3 日-10 日）

日期	地點	內容
05 月 01 日（三）	台北→維也納	啟程
05 月 02 日（四）	維也納→日內瓦	報到
05 月 03 日（五） 05 月 10 日（五）	日內瓦國際會議中心(CICG)	與會
05 月 11 日（六） 05 月 12 日（日）	日內瓦→阿姆斯特丹→台北	返程、抵台

(三) 行前準備

1. **取得專業資訊：**至巴塞爾公約網站下載會議文件，以掌握本次會議重點及我國關切議題之主導國及官員。

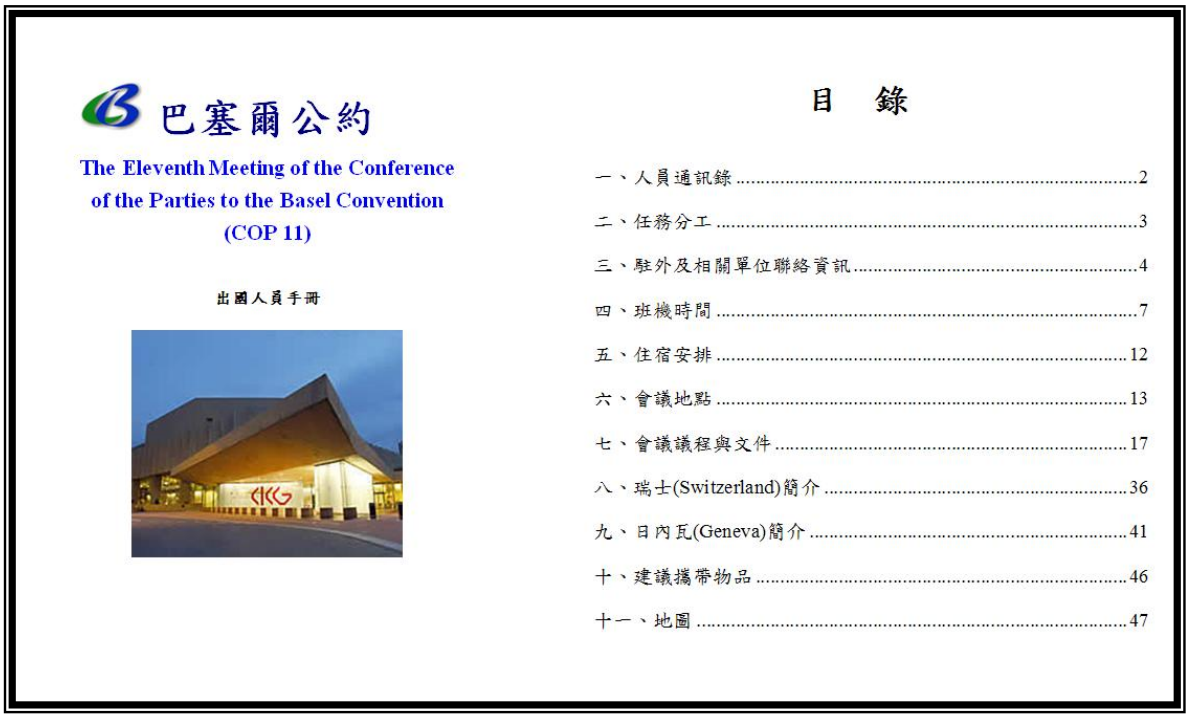
2. 適時展現國力

(1) 參與周邊會議，以簡報說明我國電子廢棄物管理情形。

(2) 搭配會議議題及規劃請教議題，彙整國內資訊。

(3) 藉由問題討論，說明國內現況及問題，同時請教該國做法及對策。

3. **國際人脈維繫（Networking）：**透過大會及周邊會議等各式會議活動參與，以維繫國際人脈。



巴塞爾公約

The Eleventh Meeting of the Conference of the Parties to the Basel Convention (COP 11)

出國人員手冊

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圖 1 本次會議出國手冊封面與目錄

三、巴塞爾公約締約國大會議程[5]

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(三) 巴塞爾公約執行事務

1. 策略議題

(1) 討論印尼/瑞士共同提議改善巴塞爾公約執行效率之後續事項

(2) 策略架構

2. 科學與技術事務

(1) 技術方針

(2) 修訂巴塞爾公約附件

(3) 廢棄物的分類與危害特性描述

(4) 各國報告

3. 法律、承諾、與治理事務

(1) 推動履行與實現巴塞爾公約條款執行委員會報告

(2) 各國有關巴塞爾公約的立法、通告、與實施，以及阻遏非法運送廢棄物的成果

4. 技術協助

(1) 自我能力提昇

(2) 巴塞爾公約區域與協調中心

(3) 有關 V/32 決議案放寬信託基金的範圍，以提供開發中國家技術支援，使其履行巴塞爾公約的實施成果

5. 國際合作、協調與夥伴關係

(1) 巴塞爾公約夥伴關係計畫

[5] 資料來源：會議文件 UNEP/CHW.11/1。

(2) 以符合環境友善化方式拆解船舶

(3) 與國際海事組織合作事務

(4) 其他國際合作與協調事務

6. 資源籌措與財務

7. 巴塞爾公約 2014-2015 整體工作計畫

(四) 秘書長作業事務與預算通過

(五) 討論第 12 次締約國大會的地點與日期

(六) 其他事務

(七) 通過會議文件

(八) 會議閉幕

四、出席狀況

本次會議約有一百多個單位出席，包括締約國（Parties to the Convention，含歐盟）、非締約國（States not party to the Convention，如美國）、聯合國架構下的組織（Observers from the United Nations bodies）如國際勞工組織（ILO）、非政府組織/民間組織，及其他（non-governmental organizations, private-sector organizations and others）如財團法人環境資源研究發展基金會、巴塞爾公約區域中心（Basel Convention regional centres）等共同與會[6]。

五、會議實錄

(一) 會議進行方式

原則上，每日大會（plenary）分為二個時段召開，分別為 10：00 至 13：00 以及 15：00 至 18：00，巴塞爾公約議程為 5 月 3 日至 5 月 6 日，通常為促

[6] 本報告完成時巴塞爾公約第 11 次締約國大會正式會議記錄尚未公布，出席狀況相關數據為公約秘書處初估、提供。

使會議順利進展，大會（plenary）召開期間同步召開區域協調會議、磋商小組會議（contact groups）及周邊會議（side event），當不同會議時間重疊時，與會者多視其任務進行調整。

表 3　第十一次締約國會議單日行程（示例）

時間	2013.05.03 議程	
10:00-13:00	區域協調會議 大會（plenary）【上午議程】 ◎組織事項（選舉主席團成員、組織工作、憑證） ◎工作計劃和預算 ◎科學和技術事項：包含技術指引（不包括持久性有機污染物）、修訂巴塞爾公約的附件、分類和有害特性的廢棄物	
13:15-14:45	周邊會議 ◎日本：你需要知道什麼是關於環境友善管理（ESM）廢棄物架構草案	周邊會議 ◎支持實施巴塞爾公約和斯德哥爾摩公約更新：由環境署國際環境技術中心和巴塞爾公約區域中心廢棄物和廢電機電子設備指令（WEEE）倡議
15:00-18:00	大會【下午議程】 ◎策略問題：包含巴塞爾公約禁令修正案、策略架構，及 2014-2015 年業務及工作方案	
18:00-20:00	周邊會議 ◎協調危險化學品的銷毀	周邊會議 ◎確保船舶拆解作業符合巴塞爾公約之規範

(二)　書面資料：為節省資源，本次會議採無紙化會議，臨時新增文件則統一放置於會議專網以利下載。

(三)　**現場展示：**本次除了巴塞爾公約手機夥伴計畫、電腦設備夥伴計畫等展示攤位外，尚有聯合國環境署國際化學管理策略計畫（Strategic Approach to International Chemicals Management，簡稱 SAICM）、聯合國糧食及農業組織（Food and Agriculture Organization of the United Nations, FAO）等單位於會議現場展示海報，提供資料（如圖 2、3、4）。

圖 2 手機夥伴計畫展示攤位

圖 3 電腦設備夥伴計畫展示攤位

圖 4 聯合國環境署國際化學管理策略計畫

六、會議主要決議

本次大會主要決議事項，包括：提高巴塞爾公約執行成效之措施、舊廢電子物品越境轉移技術指引草案[7]、巴塞爾公約夥伴計畫（Basel Convention Partnership Programme）[8]及 2014-2015 年業務及工作方案(Operations and work programme of the Open-ended Working Group for 2014—2015）[9]等。

(一) 提高巴塞爾公約成效之措施：

包括解決「巴塞爾公約禁令修正案」生效問題(Addressing the entry into force

[7] UNEP/CHW.11/CRP.22, UNEP/CHW.11/L.1/Add.2, UNEP/CHW.11/7/Add.1

[8] UNEP/CHW.11/L.1/Add.3, UNEP/CHW.11/6, UNEP/CHW.11/6/Add.1

[9] UNEP/CHW.11/CRP.17,18, UNEP/CHW.11/20, UNEP/CHW.11/20/Add.1

of the Ban Amendment）[10]、制訂有害廢棄物及其他廢棄物之環境友善化管理架構（Framework for the environmentally sound management of hazardous wastes and other wastes）[11]、提高法律明確性（Providing further legal clarity）[12]、加強區域中心與協調中心的執行成效（On further strengthening the Basel Convention regional and coordinating centres）[13]、有效打擊非法運送（On combating illegal traffic more effectively）及協助發展中國家禁止輸入有害廢棄物之能力建置（On assisting developing countries facing specific challenges with regard to prohibiting the import of hazardous wastes）[14]，重點摘述如下：

1. 巴塞爾公約禁令修正案生效問題[15]

1995 年 3 月召開的巴塞爾公約第 3 次締約國大會（COP3），會議中通過一項決議：巴塞爾公約附件七國家（包含 OECD、EC 成員國與列支敦士登），不得將廢棄物輸出至非附件七國家。該決議需超過四分之三締約國之簽署才能生效，由於第三次締約國大會時並未清楚敘明締約國之範圍，締約國數量亦不斷增加，造成兩派意見，一派支持決議通過（COP 3）當時的締約國方有批准、正式同意或接受權（Fixed-Time Approach）；另一派則認為應以目前締約國，皆擁有批准、正式同意或接受權（Current-Time Approach）。爭執過程中費時冗長，直至 2011 年 10 月第 10 次締約國大會（COP10）BC-10/3 決議[16]中，決定採取前者。

由於此禁令修正案若通過，附件七國家（已開發國家）的廢棄物便不得輸出至非附件七國家，這將讓已具特定廢棄物妥善處理能力的發展中國家，在廢棄物來源取得上處於劣勢，因此造成部分發展中國家不願簽署。截至 2013 年 4 月 10 日簽署該禁令修正案的國家數量已達 75 國，距離通過門檻尚需 15 個締約國[17]，因此在三公約締約國大會上主席敦促具簽署權

[10] UNEP/CHW.11/L.1/Add.2, UNEP/CHW.11/3

[11] UNEP/CHW.11/CRP.10, UNEP/CHW.11/3/Add.1

[12] UNEP/CHW.11/CRP.21, UNEP/CHW.11/3/Add.2

[13] UNEP/CHW.11/CRP.8, UNEP/CHW.11/5

[14] UNEP/CHW.11/L.1/Add.2, UNEP/CHW.11/15

[15] 巴塞爾公約禁令修正案相關資訊可參閱巴塞爾公約網站 http://www.basel.int/Implementation/LegalMatters/BanAmendment/tabid/1484/Default.aspx。

[16] UNEP/CHW.10/28

[17] UNEP/CHW.11/L.1/Add.2

利之締約國踴躍簽署。

2. 通過有害廢棄物及其他廢棄物之環境友善化管理架構[18]

由於廢棄物不當處理，持續造成全球人體健康與環境危害之威脅，因此在第 10 次締約國大會（COP10）BC-10/3 決議中，指出必須制訂更全面的環境友善化管理架構。經由各方努力，本次締約國大會（COP11）通過「有害廢棄物及其他廢棄物環境友善化管理架構」。

環境友善化管理架構，涵蓋內容、工具、落實策略，並提供國際層級、區域層級、國家及處理機構層級建議採取之各項行動清單。其提及在實施環境友善化管理時，應考量資源使用效率（Resource and process efficiency）、向公眾的資訊透明度（Transparency）、廢棄物（Waste-related matters）、設施（Facility-related matters）、監督（Regulatory matters）、職業安全與衛生（Occupational safety and health matters）、組織管控（Organizational matters）、環境保護（Environmental protection matters），及創新、研究與開發（Innovation and research and development）等要素。管理架構中建立環境友善化管理的共識、確認推動的工具及策略，制定一系列包括政策、法規，以及技術、誘因等工具，讓利害關係者參與及配合[19]。此外並有利害關係人應採取的行動、環境友善化管理與越境轉移間的關連性及績效查核指標。其中各利害關係人之廢棄物運輸者（Waste carriers）、經銷商和仲介商（Waste dealers and brokers），必須確實具備環境保險或財務擔保（Environmental insurance or financial guarantees）。

3. 提高法律明確性

本次會議中依循 2012 年 9 月巴塞爾公約第 8 次開放式工作組會議（OEWG8）之討論基礎，提出「舊廢商品特定名詞研究報告」，其透過問卷方式調查各國對於舊廢商品之認定方式，並彙整相關國家意見，以供各界參考。在用語方面，則針對廢棄物/非廢棄物（waste/non-waste）、有害廢棄物/非有害廢棄物（hazardous waste/non-hazardous waste）、再使用

[18] UNEP/CHW.11/3/Add.1

[19] 利害關係人包括政府、廢棄物產生者、運輸者、經銷商、中間商、廢棄物管理設施和非政府組織在內。

（re-use）、直接再使用（direct re-use）、修復（refurbishment）、二手物品（second-hand goods）以及使用過物品（used goods）等執行相關特定名詞詞彙表（glossary），進行討論，希望能與現有公約技術文件內容作比較，以確保內容一致性。

4. 加強區域中心與協調中心的推廣成效

重點包括：透過區域中心與協調中心持續協助推動開發中國家進行能力建置，包含培訓活動與技術轉移，並與斯德哥爾摩公約區域中心間進行協調配合。此外，參考斯德哥爾摩公約運作方式，制定「評估巴塞爾公約各區域中心和協調中心績效標準草案（Draft criteria for evaluating the performance of Basel Convention regional and coordinating centres）」[20]，以增進各區域中心和協調中心執行績效。

(二) 觀察員申請加入（Admission of observers）議題[21]：

因應三個公約之整併規劃，秘書處針對觀察員申請程序及文件進行檢視，未來申請文件（check list）將朝向寬鬆方式調整，以提高觀察員參與度。

(三) 巴塞爾公約相關技術性指引草案，分述如下：

1. 舊廢電子物品越境轉移技術指引草案[22]：

本次會議針對「舊廢電子物品越境轉移技術指引草案」進行廣泛討論，重點在於廢棄物與非廢棄物之定義內容。於草案第 26 點（b）項中，對於舊廢電子物品未經檢測或檢測後仍無法得知該物品是否可以直接再利用之情形，可否以例外方式認定為非廢棄物，有不同的提案[23]。

例如非政府組織巴塞爾行動網絡（Basel Action Network, BAN）提出未經測試（test）之舊廢電子物品及其維修品含零組件，應視為廢棄物，以避免發展中國家環境二次污染。但在會中遭到電子產業及部分已開發國家反對，反對意見表示若電子維修品及其零組件視為廢棄物，將造成電子

[20] UNEP/CHW.11/5/Add.1

[21] UNEP/CHW.11/CRP.20, UNEP/CHW.11/22

[22] UNEP/CHW.11/CRP.22, UNEP/CHW.11/7, UNEP/CHW.11/7/Add.1

[23] UNEP-CHW.11/7/Add.1

產品維修意願大幅下降而使廢棄物大量產生之疑慮，可能違反永續物料管理中促進再使用、材質再利用的精神；再者發展中國家可能具備廢棄物妥善處置能力，且未經測試之舊廢電子物品未必造成發展中國家環境危害，因此在會中並未達成討論共識，締約國大會決議持續邀請締約國與提名之專家進行討論，臨時工作小組將廣納意見並準備修正後之草案提交給第 9 次開放式工作組會議，並要求秘書處於下次締約國大會（COP12）上報告。

2. 持久性有機污染物技術指引（Technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with persistent organic pollutants）[24]：

將更新一般性持久性有機污染物技術指引，以納入全氟辛烷磺酸廢棄物；新增或更新多溴聯苯醚、六溴聯苯等特殊性之持久性有機污染物技術指引，以減少或消除持久性有機污染物之產生。

3. 含汞廢棄物技術指引（Technical guidelines for the environmentally sound management of wastes consisting of elemental mercury and wastes containing or contaminated with mercury）[25]：

考量水俣公約(Minamata Convention on Mercury)即將生效，將更新含汞廢棄物技術指引，以確保含汞廢棄物之環境無害管理。

(四) 巴塞爾公約夥伴計畫（Basel Convention Partnership Programme）

為協助發展中國家落實廢舊電腦設備環境友善化管理，鼓勵發展中國家加入夥伴計畫，本次締約國大會（COP11）通過部分對「舊廢電腦設備的環境友善化管理指引（Guidance document on the environmentally sound management of used and end-of-life computing equipment）」內容，以及通過新的 2014-2015 年執行規劃。

指引通過內容包含：第 1 章導言（Introduction）、第 2 章環境友善化管理標準之建議（Environmentally sound management criteria recommendations）、第 4 章舊廢電腦設備檢測、翻新和維修（Testing, refurbishment and repair of used computing equipment）及第 5 章廢電腦設備的物料回收與再利用（Material

[24] UNEP/CHW.11/CRP.11, UNEP/CHW.11/L.1/Add.1

[25] UNEP/CHW.11/CRP.9, UNEP/CHW.11/INF/16

recovery and recycling of end-of-life computing equipment）。至於第 3 章舊廢電腦設備越境轉移（Transboundary movement of used and end-of-life computing equipment）內容，需搭配尚未通過的「舊廢電子物品越境轉移技術指引（草案）」，例如：廢棄物與非廢棄物之定義，以確保公約架構下技術指引內容協調性。

(五) 2014-2015 年業務及工作方案[26]：

包含推動策略架構、研擬更新持久性有機污染物技術指引、檢視廢棄物清單、強化區域中心與協調中心功能[27]、資源有效化及促進巴塞爾公約、鹿特丹公約及斯德哥爾摩公約之效能，各議題活動內容與優先順序如表 4。

表 4 2014-2015 年業務及工作方案草案

主題	活動	優先程度
一、策略性議題		
A. 策略架構	審議秘書處提交的基準報告。	高度
B. 關於防止、儘量減少和回收有害廢棄物及其他廢棄物的《卡塔赫納宣言》	繪製行動路線圖，並審查各締約國在執行《卡塔赫納宣言》之進展。	高度
C. 實施《廢棄物環境友善化管理架構》	--	
D. 開放式工作組及擴大主席團的業務活動	編制一份報告，列出開放式工作組及擴大主席團未來安排的各種可能工作選項建議。	高度
二、科學與技術事項		
A. 技術指引	1． 技術指引包括： (a) 更新持久性有機污染物技術指引。 (b) 編制全氟辛烷磺酸、全氟辛烷磺酸鹽和全氟辛基磺醯氟技術指引。 (c) 更新阿特靈、克氯丹、地特靈、安特靈、飛佈達、六氯苯、滅蟻樂及毒殺芬技術指引。 (d) 更新多氯聯苯、多氯三聯苯或多溴聯苯技術指引。	高度

[26] UNEP/CHW.11/CRP.17,18, UNEP/CHW.11/20

[27] 區域中心與協調中心之功能可包括：電子廢棄物管理、能力建置、體制強化、邊境管制、國際貿易有毒化學品管理、過期化學品庫存盤查、區域內與區域間之資訊交流及納入私部門參與等。

主題	活動	優先程度
	(e) 更新多氯聯苯、多氯三聯苯及多溴聯苯(PCBs, PCTs, PBBs)技術指引。 (f) 編制商用八溴二苯醚（六溴二苯醚和七溴二苯醚）和商用五溴二苯醚（四溴二苯醚和五溴二苯醚）技術指引。	
	2．研擬汞廢棄物技術指引。	高度
B. 對《巴塞爾公約》各項附件的修正	1. 修正《公約》附件八和附件九廢棄物清單項目。	高度
	2. 修正持久性有機污染物相關清單。	中度
C. 廢棄物的分類和危險定性	針對世界海關組織“商品名稱及編碼協調制度”進行研析。	中度
三、法律、管理以及強制執行問題		
A. 與負責促進《公約》履約和遵約機制行政管理的委員會進行協調	1．完成關於退運規定的指導文件的編制工作，供第 12 次締約國大會通過。	高度
	2．完成控制系統指南的增訂，供第 12 次締約國大會通過。	
	3．審議並更新《巴塞爾公約實施手冊》，以期確保該手冊與控制系統指南保持一致，供第 12 次締約國大會通過。	
四、技術援助		
A. 巴塞爾公約各區域中心和協調中心	加強巴塞爾公約各區域中心和協調中心的工作。	高度
五、國際合作與協調		
A. 以無害環境的方式拆解船舶	包含可持續船舶回收利用方案、及《香港國際安全與無害環境拆船公約》之支援執行。	中度
B. 其他國際合作與協調	在相關領域加強與國際和區域組織及多邊環境協定之間的合作與協調。	中度
C. 加強《巴塞爾公約》、《鹿特丹公約》和《斯德哥爾摩公約》之間的合作與協調	提供秘書處指導建議。	中度
六、資源調集和財政資源		
A. 資源調集和可持續供資	1.《巴塞爾公約》執行事項之資源調集與財政捐助問題。	高度
七、工作方案與預算		
A. 方案預算及其他財政事項	1. 2016–2017 年方案之預算事項。	中度
	2. 審議秘書處財政與管理事項報告。	

(六) 管理非法運送之環境網絡（Environmental Network for Optimizing Regulatory Compliance on Illegal Traffic, ENFORCE）[28]：

本次會議確立「管理非法運送之環境網絡(ENFORCE)」之權責範圍，將透過由相關專家組成的網絡，促進各締約國執行國家法律以遵守公約規定，並由公約各締約國、區域中心和協調中心，及其他國際防止非法運送犯罪等機構代表擔任成員，並結合巴塞爾公約相關會議時間，每年至少召開一次會議。

七、高階會議（high-level segment）

三公約高階會議於 5 月 9 日下午到 5 月 10 日上午舉行，大約 80 位締約國部長/副部長出席[29]，會中以「化學品及廢棄物三個國際公約在國家、區域及全球層級的落實及管理策略」作為討論主題，整體目的包括：一、確定三公約能更有效地管理各國化學品和廢棄物問題。二、提高各國對化學品和廢棄物管理問題的關注，將其作為國家發展議程中永續發展的關鍵。三、提供經驗及最佳做法。期透過三個公約的合作，減少環境遭受化學物質及廢棄物的危害，並共同推動綠色經濟，實現資源永續利用的目標。

三公約會議並於 5 月 10 日通過日內瓦化學品及廢棄物友善化管理宣言(Geneva Statement on the sound management of chemicals and waste)，其以聯合國 Rio+20 成果文件─我們想要的未來 (The Future We Want)作為延伸，以提高各國對化學品和廢棄物管理問題的關注，三公約未來將持續透過國家及區域層級間的合作協調，確保運作資金來源以持續推動三公約[30]。隨後三公約會議於同（10）日晚間閉幕（如圖 5）。

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[28] UNEP/CHW.11/CRP.2

[29] EXCOPS.2-OTHER.7-HLS-SummaryPanelDiscussions.English

[30] 資料來源：會議文件UNEP/FAO/CHW/RC/POPS/EXCOPS.2/CRP.5/Rev.1, Add.1/Rev.1, Add.2 and Add.3.。

圖 5 三公約會議由巴塞爾公約締約國大會主席宣布閉幕[31]

八、周邊會議

由於巴塞爾、斯德哥爾摩與鹿特丹三公約議題眾多，各國與會者受到時間及資源的限制，多半僅能參與部分議題，為讓所有與會者能增加對各議題的瞭解，於正式會議辦理期間，多半同步以周邊會議（side events）方式來說明特定議題。我國為拓展國際參與空間與促進國際合作，於 5 月 4 日參與布吉納法索與瓜地馬拉等邦交國舉辦之「發展中國家持久性有機污染物及電子廢棄物管理」周邊會議（如圖 6），分享臺灣電子廢棄物(E-Waste)處理之成功經驗，現場有布吉納法索、瓜地馬拉、美國、日本、德國及澳大利亞等 20 餘國共約 80 人與會，臺灣推動經驗及成果深獲與會國肯定。

會後與布吉納法索環境部部長及代表團進行會談，除增進雙方在環保專業領域上的交流深度，預期後續可透過每二年固定召開之台布會談，開展二國環保合作計畫（如圖 7）。

[31] 參考資料：IISD http://www.iisd.ca/chemical/excopscops/2013/10may.html。

此外周邊會議辦理結束後，科威特代表對我國電子廢棄物管理制度完善深表讚佩，期能與我方就此一議題進行合作，經雙方討論規劃先分別評估後續合作之可行性，再予進行。

圖 6　參與周邊會議　分享臺灣經驗

圖 7　與布吉納法索代表團進行會談

九、雙邊會談及與會交流

本次與會透過外交部及駐日內瓦辦事處之協助，針對巴塞爾公約政策、環保部門與海關合作及廢棄物越境轉移財務擔保等議題，安排與日本、英國、美國及德國進行正式雙邊會談；另針對國際資源/廢棄物管理之推動進展與奧地利等國進行與會交流，分述如下：

(一) 美國廢棄物輸出入管理政策因應情形[32]（如圖 8）：

因應國際廢棄物管理趨勢已從管制轉為資源回收再利用，美國在政策上有所調整，目前以市場自由運作為主，並訂定政策鼓勵廢棄物走向回收再利用，針對不同產業訂定回收標準，符合標準者，可納入政府採購。

此外考量輸出入廢棄物未能完全與海關稅則進行比對，造成越境轉移管理風險，因此美國環保及海關部門加強合作互動，以降低違法輸出入之發生。

(二) 德國廢棄物輸出入管理政策及財務擔保模式（如圖 9）：

配合全球廢棄物資源化之趨勢，德國鼓勵業者進行電子廢棄物再利用。另針對輸出入所需財務擔保方面，德國廢棄物以輸出為主，較少輸入案例，廢棄物輸出申請業者以提供銀行之財務保證居多，數額計算公式僅為一般通用原則，地方政府會依據處理或運輸費用之不同，自行核算，若有不足，會通知申請者增補。

[32] 會談日期：2013 年 5 月 3 日。

圖 8 與美國代表進行雙邊會談

圖 9 與德國代表進行雙邊會談

(三)　日本廢棄物輸出入管理政策及海關合作方式（如圖 10）：

日本境內欠缺天然資源，但具有廢棄物妥善處理能力，因此再利用業者希望增加電子廢棄物料源，以利取得貴重及稀有金屬。惟日本為 WTO 會員國，基於貿易平等原則，政府並未規劃禁止輸出電子廢棄物，改以簡化申請程序並縮短審查所需時間，以協助業者。

日本環保單位負責環保法規，海關負責貿易法規的落實，雙方於必要時會透過 E-mail 等管道進行聯繫溝通；另海關稅則並未針對產品或廢棄物進行區隔，僅由業者在文件中加註說明，因此日本環保單位製作指引（含法規、程序及相關案例）供海關執行參考。

(四)　英國廢棄物輸出入財務擔保制度（如圖 11）：

英國依據歐盟廢棄物運送規定（Regulation (EC) 1013/2006 – The Waste Shipments Regulation），制訂廢棄物越境轉移財務擔保或保險申請書（Application for approval of financial guarantee or equivalent insurance）。

其財務保證及責任保險之有效期限，需包含至環保單位確認並回覆廢棄物妥善處理為止，業者通常採用銀行擔保，且申請內容須載明萬一有需求或發生意外時，政府可直接提出行政請求權，無須透過擔保人，以確保政府有充裕資源可解決衍生環境問題。

圖 10 與日本代表進行雙邊會談

圖 11 與英國代表進行雙邊會談

參、心得與建議

一、 心得

(一) OECD 永續物料管理對電子廢棄物輸出入政策影響

電子廢棄物過去被視為危害環境甚深的有害廢棄物，惟電子廢棄物蘊含貴金屬及稀土金屬成分，因此在 OECD 永續物料管理概念之下，引進生命週期思維，透過「城市礦山」概念，希望能將電子廢棄物轉為戰略物資來源之一，同時提供相關產業經濟發展所需。

透過與日本及德國政府雙邊會談活動交流過程，獲知該兩國將電子廢棄物視為資源，且鼓勵電子廢棄物再利用，其中日本更嘗試簡化電子廢棄物越境轉移申請程序及縮短審查時間來對應。而我國目前正研修廢棄物輸出入相關管理規定，可同步觀察相關國家作法，亦茲因應。

(二) 廢棄物輸出入財務保證及責任保險

我國廢棄物輸出入時，需由申請者提供財務保證或責任保險，為能達成其

作用，避免廢棄物退運時未有足夠費用予以處理，其擔保額度大小即顯重要，因此與會期間就此議題進行諮詢。

廢棄物輸出入申請者所提之財務保證，其內容應載明遇有需求時，可由政府部門直接動支保證金，以利解決衍生之相關環境問題；考量我國保險市場規模較小，保險公司承保意願較低，而英國保險業發展完善，未來可與之就分攤鉅額理賠風險之再保模式進行諮商。

二、 建議

(一) 舊廢電子物品越境轉移技術指引草案之影響

本次會議與會代表，對於「舊廢電子物品越境轉移技術指引草案」進行廣泛討論，意見包括：(1)環保團體-巴塞爾行動網絡（Basel Action Network, BAN）：未經測試(test)之舊廢電子產品及其維修品含零組件皆視為廢棄物，以避免發展中國家環境污染；(2)產業代表：擔心若電子維修品及其零組件視為廢棄物，將造成維修意願下降，反而促使廢棄物產生，無法達成永續物料循環。考量本技術指引涉及舊廢電子物品於廢棄物與非廢棄物之認定，影響我國未來管理模式，後續應密切關注其進展。

(二) 電子廢棄物議題可作為我國在國際合作上之重要機會

巴塞爾公約近年來以電子廢棄物管理作為主軸，除考量其產生數量日益增加外，其隱含城市礦山之資源概念亦為重點。而我國於電子廢棄物管理經驗豐富，於周邊會議分享實務經驗時，獲得其他國家良好回應，後續可以此為基礎，建立與其他國家合作契機。

附錄

附錄一　周邊會議：電子廢棄物管理與四合一回收系統

E-Waste Management and the Four-In-One Recycling System

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2013.05.04

Outline

- Background
- E-Waste Management in Taiwan
- Four-In-One Recycling System
- Conclusion

Background

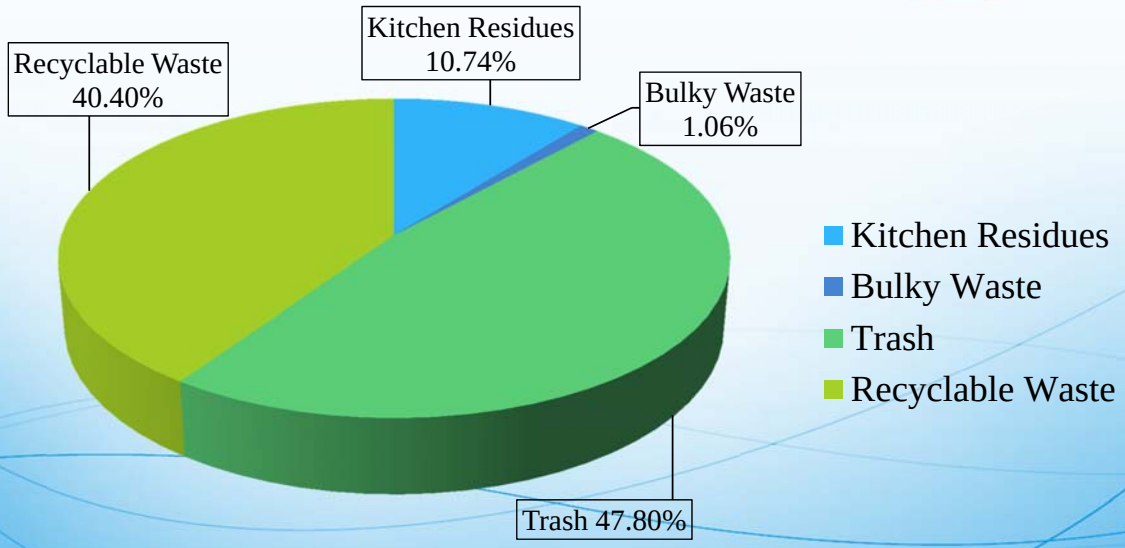
- Population: 23 million
  Area: 36,000 km²
  Density: 644 persons/km²
  (Dept. of household registration 2013.01)
- 98% of energy is imported.
- Natural resources deficient.
- Resource conservation and recycling are important to Taiwan's sustainable development.

Categories of Waste

Waste Disposal Act

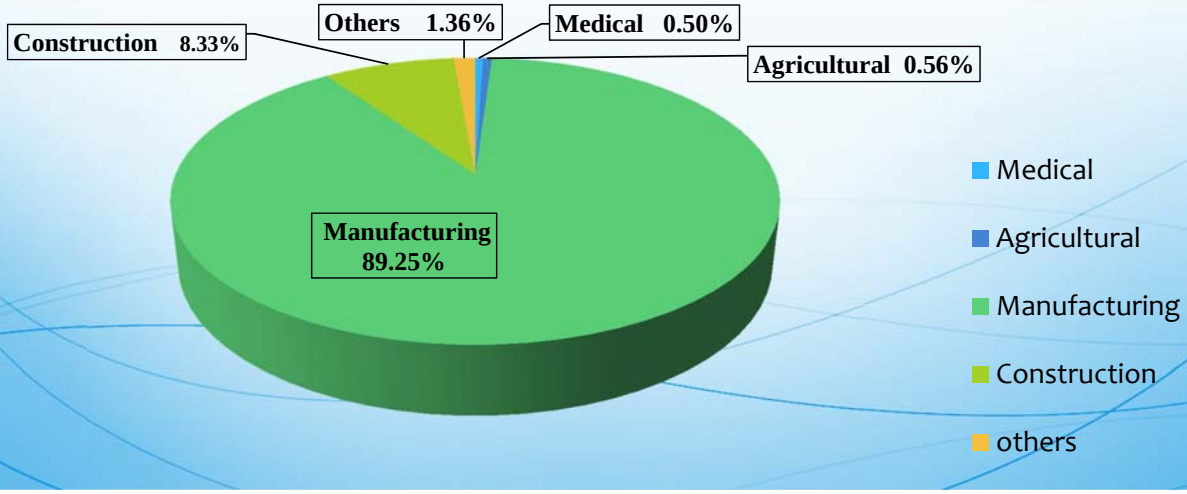
Estimated Quantities of Municipal Waste

MSW (excluding construction waste) was estimated to be 7.5 million tons in 2011



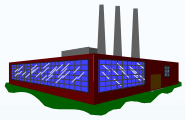
Estimated Quantities of Industrial Waste

- IW (excluding construction waste) was estimated to be 15 million tons in 2011
- Non-Hazardous IW: 92.2%
- Hazardous IW: 7.8%



Industrial Waste Management System

- Each Party involved in the Waste Treatment Must Apply for A Permit and Report Specific Data



Generator

Transporter

TSDFs

- Treatment Permit
- Treatment Report
- Operational Record

Recycling Facility

- Recycling Permit
- Recycling Report
- Operational Record

Waste Export

- Import/Export Permit
- Import/Export Report

- **Waste Disposal Plan—Raw Materials, Products, Process, Other General Baseline Information**
- **Online Reporting**

- **Transportation Permit**
- **Disposal Permit**
- **Shipment Reporting, GPS Tracking**
- **Operational Record for Small Quantity Generators**

E-Waste Management in Taiwan

The Past History of E-waste Management

(1/3)

Management Measures

1945	1965	1984	1985-1989	1992
Disposal of war shipwrecks and waste military equipment	Open burning and acid pickling of electric wires and cables	Establishment of Dafa and Wanli scrap metal industrial parks	1. Pollution outside industrial parks 2. Waste generation out of control inside industrial parks	Environmental issues
	Incentive regulation for importing obsolete ships for dismantling	Dafa and Wanli industrial parks supervision team	1. Scrap metal grading and quota restrictions 2. Quotas halved (50%) 3. Quotas quartered (25%) 4. Quotas not granted	Import deadline for approved quotas

The Past History of E-waste Management

(2/3)

Dioxin smoke near Erren River (1985)

Metal Scraps in Dafa Industrial Park (1987)

Dafa Incinerator (1988)

Acid pickling of metal scraps (1989)

Pollution control of metal scraps treatment(1989), The project of pollution control of Erren River documentary (2012.09)

The Past History of E-waste Management

（3/3）

Trace of acid pickling in illegal plant (1989)

Environmental volunteers supervising water quality (2006)

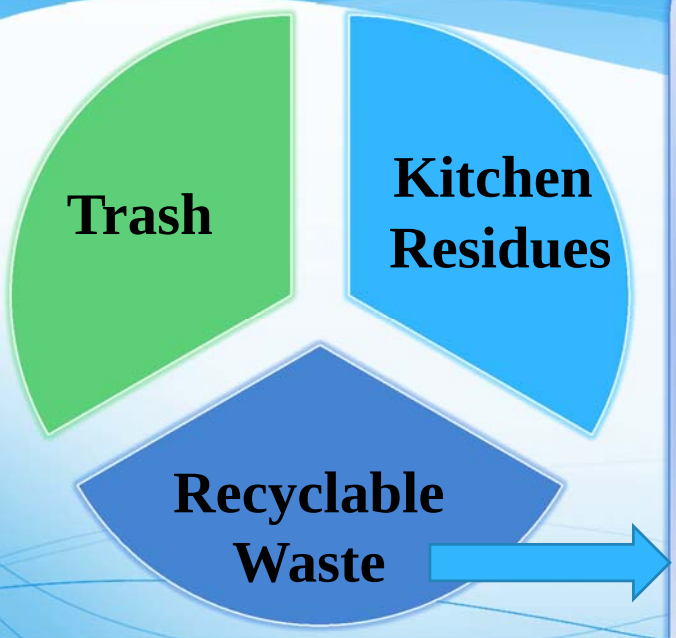
Rive bank restoration near Erren River (2006)

Remediation of Erren River (2011)

The project of pollution control of Erren River documentary (2012.09)

Four-In-One Recycling System

Municipal Solid Waste Sorting



Regulated Recyclable Waste (RRW)

- Container
- Dry-Cell battery
- Automobile/ Motorcycle
- Tire
- Lead-acid battery
- IT equipment
- Household appliance
- Fluorescent lamp

Responsibility & Incentive

Waste Disposal Act (2012 revised.)

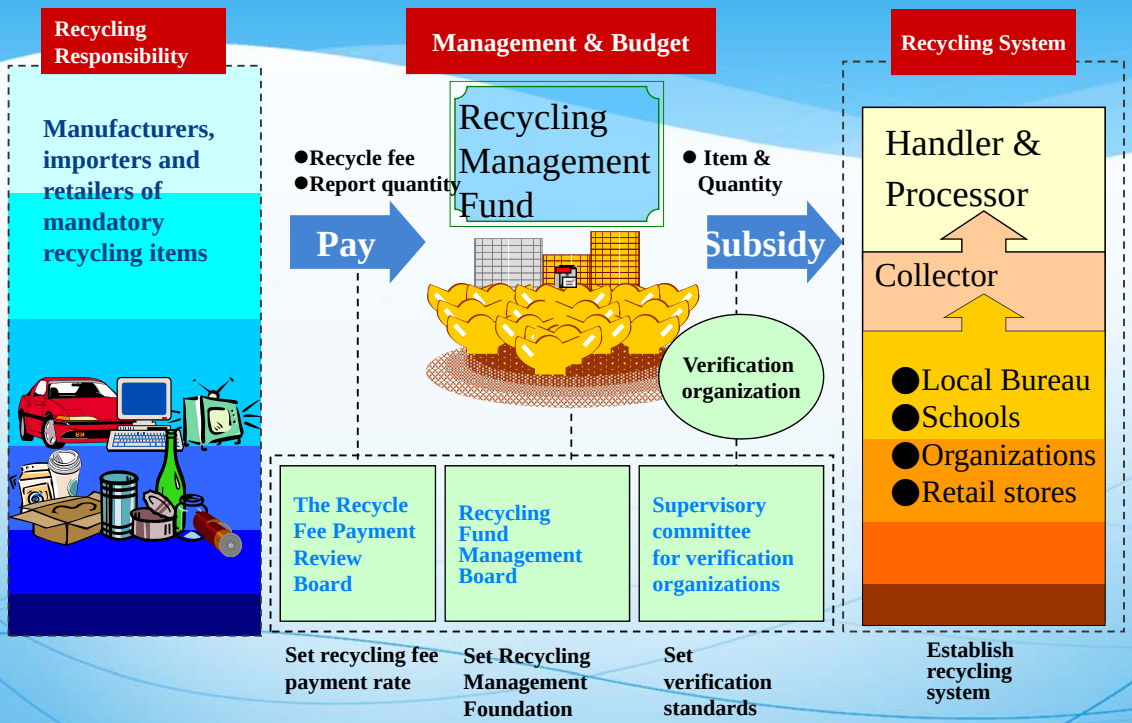
- Article 15

The waste from articles and their packaging/containers possessing one of the following characteristics shall be regulated and the responsibility of recycling shall be imposed upon the manufacturer and importer of the articles. These characteristics are:

1. Difficult to be cleaned out or disposed of,
2. Not readily available for bio-degrading or decomposing,
3. Containing hazardous substance, and
4. Valuable for recycling and reuse.

Four-in-One Recycling Program

Framework of Resource Recycling Management Fund



Mandatory Recycling Category

Vehicles

automobiles, motorcycles, tires and car batteries.

Batteries

dry cell, button cell battery

E-waste

electronics IT products and household appliances

Light bulbs

compact fluorescent lamp, fluorescent tube

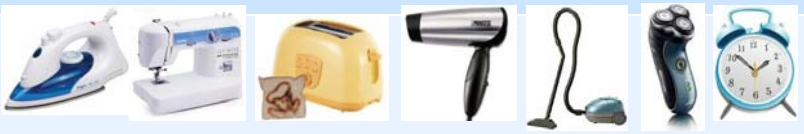
Containers

iron, aluminum, glass, paper, plastic and pesticide.

RRW Items/E-Wastes

1998	TV	Refrigerator	Washing machine	Air conditioner
	Computer (motherboard, hard drive, case, power supply unit, notebook PC, and monitor)			
2001	Printer			
2002	Light Tube (Straight fluorescent tube)			
2007	Electric fan		Keyboard	
2008	Light Bulb (fluorescent circle bulb, compact light bulb with integral ballast, etc.)			

Categories in WEEE Directive (1/3)

No.	Categories	Product Examples
1	Large household appliances	
2	Small household appliances	
3	IT and telecommuni-cations equipment	
4	Consumer equipment and photovoltaic panels	

Categories in WEEE Directive (2/3)

No.	Categories	Product Examples
5	Lighting equipment	
6	Electrical and electronic tools (with the exception of large-scale stationary industrial tools)	
7	Toys, leisure and sports equipment	

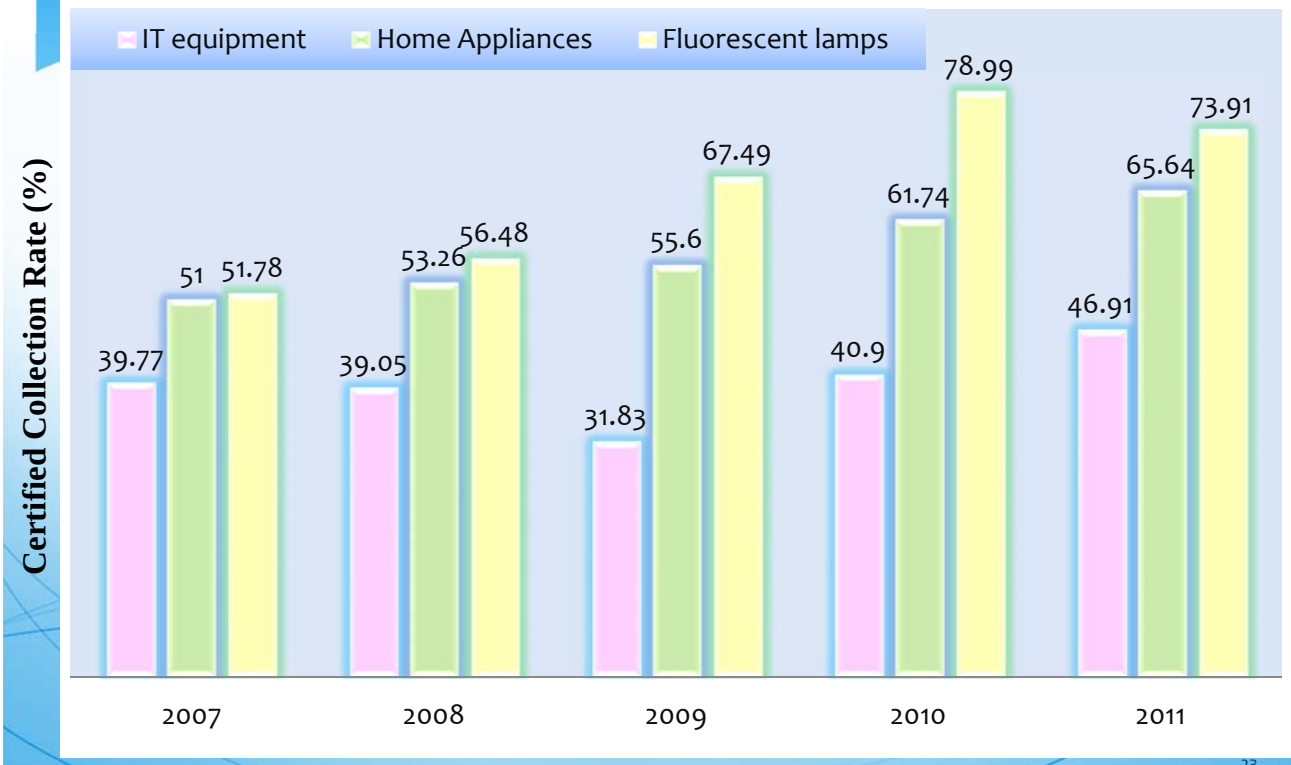
Categories in WEEE Directive (3/3)

No.	Categories	Product Examples
8	Medical devices (with the exception of all implanted and infected products)	   
9	Monitoring and control instruments	   
10	Automatic dispensers	  

Recent Measures
RRW Items/E-Wastes

* New RRW Items (From 2014):
  * Tablet and others.
* Take-back policy:
  * TV, Refrigerator, Washing machine, Air conditioner
  * To take back the waste items without charge.
* Voluntary Agreement for Recycling of Mobile Communication Equipment (MCE)
  * Mobile telephones, PDAs and GPS
  * To recover the waste MCE of the general public without charge.

Collection Rate of E-Waste



Conclusion

- Keep Adopting State-of-the-art Technologies
- Continue Fine Tuning Policy and Regulations
- Participate and Devote to the Global Community

Blue sky and green earth

Verdant mountains and pristine water

Health and Sustainable

Thank You for Your Attention

附錄二　巴塞爾公約第 11 次締約國大會重要文件

附錄 2-1　巴塞爾公約第 11 次締約國大會議程

UNITED NATIONS

UNEP

BC

UNEP/CHW.11/1

Distr.: General
30 October 2012

Original: English

BASEL CONVENTION

Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Eleventh meeting
Geneva, 28 April–10 May 2013

Provisional agenda

1. Opening of the meeting.
2. Adoption of the agenda.
3. Organizational matters:
   - (a) Election of officers;
   - (b) Organization of work;
   - (c) Report on the credentials of representatives to the eleventh meeting of the Conference of the Parties.
4. Matters related to the implementation of the Convention:
   - (a) Strategic issues:
     - (i) Follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention;
     - (ii) Strategic framework;
   - (b) Scientific and technical matters:
     - (i) Technical guidelines;
     - (ii) Amendments to the annexes to the Basel Convention;
     - (iii) Classification and hazard characterization of wastes;
     - (iv) National reporting;
   - (c) Legal, compliance and governance matters:
     - (i) Committee for Administering the Mechanism for Promoting Implementation and Compliance of the Basel Convention;
     - (ii) National legislation, notifications, enforcement of the Convention and efforts to combat illegal traffic;
   - (d) Technical assistance:
     - (i) Capacity-building;
     - (ii) Basel Convention regional and coordinating centres;
     - (iii) Implementation of decision V/32 on the enlargement of the scope of the Trust Fund to Assist Developing and Other Countries in Need of Technical Assistance in the Implementation of the Basel Convention;

(e) International cooperation, coordination and partnerships:

(i) Basel Convention Partnership Programme;

(ii) Environmentally sound dismantling of ships;

(iii) Cooperation with the International Maritime Organization;

(iv) Other international cooperation and coordination;

(f) Resource mobilization and financial resources;

(g) Operations and work programme of the Open-ended Working Group for 2014–2015**.**

5. Programme of work of the Secretariat and adoption of the budget.

6. Venue and date of the twelfth meeting of the Conference of the Parties.

7. Other matters.

8. Adoption of the report.

9. Closure of the meeting.

附錄 2-2　有害與其他廢棄物環境友善化管理架構

United Nations Environment Programme

UNEP/CHW.11/CRP.10
4 May 2013

Original: English

Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Eleventh meeting
Geneva, 28 April–10 May 2013
Agenda item 4 (a) (i)

Matters related to the implementation of the Convention: strategic issues: follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention

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

Submission by the contact group on strategic matters

Note by the Secretariat

The annex to the present note sets out a submission by the contact group on strategic matters on the draft framework for the environmentally sound management of hazardous wastes and other wastes. The submission has been reproduced as received, without formal editing.

K1351732 040513

Annex

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

Contents

Glossary

BAT	Best available techniques
BEP	Best environmental practices
EMAS	Eco-Management and Audit Scheme
EMS	Environmental management system
EPR	Extended producer responsibility
ESM	Environmentally sound management
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
ILO	International Labour Organization
IMPEL	European Union Network for the Implementation and Enforcement of Environmental Law
INECE	International Network for Environmental Compliance and Enforcement
INTERPOL	International Criminal Police Organization
ISO	International Organization for Standardization
OECD	Organization for Economic Cooperation and Development
OSH	Occupational safety and health
OHSAS	Occupational Health and Safety Assessment Series
PIC	Prior informed consent
TEG	Technical expert group
UNEP	United Nations Environment Programme

Definitions

"Applicable" environmental management system: the need to have an "applicable" environmental management system (EMS) in place within waste facilities, taking into account the size of the enterprise, the level of risk associated with operation of the facility and other factors relevant to implementation. An EMS is often designed to be integrated into the "plan, do, check and act" model for continuous improvement and many existing systems already use this approach. It helps to ensure that environmental issues are systematically identified, controlled and monitored in the context of the need to reinforce continuous improvement. Several applicable EMS already exist in countries which are members of the Organization for Economic Cooperation and Development (OECD): ISO 14001, which is worldwide, and the Eco-Management and Audit Scheme (EMAS), which is specific to European countries and has somewhat more ambitious requirements than ISO 14001. Also considered to be applicable EMS are those that are tailor-made for individual circumstances – for example, systems designed for the purpose of specific industrial sectors or enterprises.[1]

Due diligence: due diligence is the level of judgement, care, prudence, determination and activity that would be reasonably expected of a person under particular circumstances.

Environmentally sound management: environmentally sound management means taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.

[1] Definition extracted from the guidance manual for the implementation of OECD recommendation C (2004)100 on the environmentally sound management of waste (Paris, OECD, 2007).

Executive summary

In 2011, at its tenth meeting, the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal recognized that harm to human health and the environment continues to be caused throughout the world by inadequate waste management procedures.[2] It stressed the critical importance of prevention and minimization of hazardous wastes and other wastes, while noting that a more systematic and comprehensive effort is needed to improve guidance on the environmentally sound management (ESM) of wastes.

Although ESM is defined in Article 2 of the Basel Convention, it is widely acknowledged that ESM is understood and implemented differently by parties in the context of the Convention. While implementation of the Convention requires application of its provisions in a consistent manner, countries as well as facilities may have different ways of applying ESM as they face different realities. In addition, ESM of wastes cannot be guaranteed within the confines of waste management or generator facilities without effective legal systems, government oversight and other infrastructure to protect the occupational safety and health of workers, communities and the environment. In the absence of such effective systems and infrastructure, ESM may not be readily available in some countries and facilities.

The framework for ESM of hazardous wastes and other wastes was developed to identify what countries should do at the national level and collectively as parties to the Convention to address the challenges of implementing ESM of wastes in a systematic and comprehensive manner. Intended as a practical guide for all stakeholders participating in the management of such wastes, the framework:

(a) Establishes a common understanding of what ESM encompasses;

(b) Identifies tools to support and promote the implementation of ESM;

(c) Identifies strategies to implement ESM.

A common understanding of what environmentally sound management encompasses

ESM of wastes requires the development and implementation of a system of policies, legislation and regulations, monitoring and enforcement, incentives and penalties, technologies and other tools in which all key stakeholders participate and cooperate. The following elements should be taken into account when establishing, implementing or evaluating ESM:

(a) Regulatory matters (e.g., compliance, enforcement, consistency and complementarity);

(b) Facility-related matters (e.g., regarding construction and infrastructure);

(c) Waste-related matters (e.g., prevention, collection, sorting, pre-treatment, treatment, storage, transport, downstream management);

(d) Resource and process efficiency;

(e) Environmental protection matters (e.g., prevention of pollution, emission limit values to air, water and soil);

(f) Occupational safety and health (OSH) matters (e.g., regarding safety, health, liability and emergency response);

(g) Organizational matters (e.g., valid licence or permit, monitoring, record keeping, information to be provided to the authorities, aftercare, environmental insurance, management abilities/training level and applicable EMS);

(h) Transparency (publicly accessible information), due diligence and accountability;

(i) Innovation and research and development (e.g., through funding, information exchange and cooperation with academia and others).

[2] Section B of decision BC-10/3 on the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention.

Tools to support and promote the implementation of environmentally sound management

Tools to support and promote the implementation of ESM include a combination of legislative and regulatory tools, guidelines and/or codes of practice, voluntary certification schemes, voluntary agreements and schemes, mechanisms for cooperation at the international, regional, national and local levels, including with industry, training and awareness programmes and incentive schemes. They may be tailored to address specific waste streams. The framework outlines examples of tools in each of these categories and a supportive list of resource documents is provided in annex II.

Strategies to implement environmentally sound management

To ensure effective strategy development, it is critical to systematically anticipate, identify and prioritize issues that need to be addressed. This can be achieved by compiling baseline information on aspects such as the types and quantities of wastes generated, the potential for waste prevention and minimization, actual or potential risks posed to human health, worker safety and the environment, available infrastructure to manage wastes and the applicable laws and enforcement provisions in place.

Strategies to implement ESM should ensure that all the following core goals are met together:

(a) Establish a comprehensive legal framework to:

(i) Effectively govern all waste management operations;

(ii) Protect public and worker health and safety;

(iii) Protect the environment; and

(iv) Address movements of waste in accordance with applicable international and regional agreements and conventions, including the Basel Convention;

(b) Implement effective compliance and enforcement measures to assure conformity with applicable legal requirements;

(c) Build sufficient domestic infrastructure and capacity to ensure the availability of adequate facilities to undertake waste management operations and ensure those facilities achieve ESM.

Key stakeholders, including Governments, waste generators, waste carriers, dealers, brokers, waste management facilities and non-governmental organizations, have a pivotal role to play in the achievement of ESM. Actions that these stakeholders should take to ensure the implementation of ESM are listed in the framework.

Transboundary movements may only take place if ESM is assured, without which such movements should be considered illegal. Implementing ESM in accordance with this framework should:

(a) Reduce the need for transboundary movements to cases where it would present the best environmental outcome and achieve resource efficiency; for example, where the State of export lacks adequate capacity for ESM;

(b) Lead to a common understanding and implementation of ESM so as to enable authorities and other stakeholders to determine the legitimacy of a transboundary movement.

Following the adoption of strategies, Governments are encouraged to set up a programme to measure their progress in the implementation of ESM. The choice of indicators that are to be used in that context may differ depending on the strategies that are put in place to overcome the challenges that have been identified. Typically, they should cover activities at government level and at facility level. Examples of key indicators for the verification of performance are suggested within the framework.

Recommendations

A series of recommendations, aimed at parties to the Basel Convention, other national Governments and other stakeholders are outlined at the conclusion of the framework document. Parties to the Convention and other national Governments are encouraged to formalize development and implementation of strategies to facilitate and advance ESM, taking into account the guidance provided in the framework. In addition, parties to the Convention are encouraged to review implementation of their strategies on a periodic basis and, in the event that goals are not being met, to identify the root cause, implement corrective actions and update their strategies as needed.

The "Other stakeholders" mentioned in the framework are encouraged to formalize the development and implementation of actions to achieve ESM, taking into consideration the guidance provided in the framework.

I. Background

1. At its tenth meeting, the Conference of the Parties to the Basel Convention, by section B of its decision BC-10/3 on the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention, decided to complete the development of a framework for the environmentally sound management (ESM) of hazardous wastes and other wastes, including consideration of ways in which the framework and its elements might be linked to the issue of transboundary movement of hazardous and other wastes, taking into account subparagraph 2 (d) of Article 4[3] of the Basel Convention.

2. This work was undertaken by a technical expert group (TEG), consisting of 30 experts nominated by parties based on equitable geographical representation of the five regional groups of the United Nations. The group was open to observers and could call upon additional experts as needed. It met three times: initially in April 2012 in Tokyo, at which time preliminary discussions on the framework took place and the group established its working modalities. A second meeting took place immediately following the eighth meeting of the Open-ended Working Group in September 2012, during which the technical expert group incorporated the feedback received from the eighth meeting of the Open-ended Working Group and further elaborated the framework. The framework was finalized during the third meeting of the group in Glion, Switzerland, in January 2013 and subsequently submitted to the eleventh meeting of the Conference of the Parties for its consideration and possible adoption.

3. In the context of this framework, environmentally sound management is considered as defined within Article 2 of the Basel Convention, that is "environmentally sound management of hazardous wastes or other wastes" means taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes.

4. TEG acknowledged the close linkages between ESM and transboundary movements of hazardous wastes and other wastes.[4] Countries involved in a transboundary movement of wastes should ensure that the movement only takes place if the wastes will be managed in an environmentally sound manner and in accordance with the obligations of the Basel Convention.

II. Rationale and identification of the problem

5. In section B of decision BC-10/3, the Conference of the Parties recognized that harm to human health and the environment continues to be caused throughout the world by inadequate waste management procedures. They also stressed the critical importance of prevention and minimization of hazardous wastes and other wastes and acknowledged the existing activities that have been undertaken by parties and others to ensure ESM of hazardous wastes and other wastes. However, further dissemination of these activities is necessary and a more systematic and comprehensive effort is needed to improve guidance on the ESM of wastes.

6. In the course of the discussions of TEG, it became apparent that ESM is understood and implemented differently by parties within the context of the Basel Convention. Although implementation of the Convention requires application of its provisions in a consistent manner, countries as well as facilities may have different ways of applying ESM as they face different realities.

7. ESM of wastes cannot be guaranteed within the confines of waste management or generator facilities without effective legal systems, government oversight and other infrastructure to protect the occupational health and safety of workers, communities and the environment. In the absence of such effective systems and infrastructure, it is recognized that ESM may not be readily available in some countries and facilities.

[3] Article 4.2. "Each Party shall take the appropriate measures to:…

d) Ensure that the transboundary movement of hazardous wastes and other wastes is reduced to the minimum consistent with the environmentally sound and efficient management of such wastes, and is conducted in a manner which will protect human health and the environment against the adverse effects which may result from such movement;"

[4] See section VII below.

III. Scope and objectives

8. The framework identifies what countries should do at the national level and collectively as parties to the Basel Convention to address the challenges of implementing ESM of hazardous wastes and other wastes, within the scope of the Convention (hereinafter referred to as "wastes"), in a systematic, consistent and comprehensive manner. Intended as a practical guide for all stakeholders participating in the management of such wastes, the framework:

(a) Establishes a common understanding of what ESM encompasses;

(b) Identifies tools to support and promote the implementation of ESM;

(c) Identifies strategies to implement ESM;

(d) Specifies the roles of key stakeholders;

(e) Describes the linkages between ESM and transboundary movements;

(f) Provides a set of indicators to monitor whether a minimum level of ESM is established;

(g) Provides a set of recommendations for further action.

9. In developing the framework, it was acknowledged that a considerable amount of time, effort and resources had already been utilized to support capacity-building, infrastructure development and the development of guidance in relation to ESM. This was both within the context of the work of the Basel Convention and in other forums. The framework thus strives to ensure consistency and compatibility with previous efforts, to the greatest extent practicable. Consequently, the framework includes a list of existing resource documents as an initial reference for stakeholders and to indicate where further guidance may be found. This list will be periodically updated to include new guidance documents as they emerge, thus ensuring a fully up-to-date reference point.[5]

IV. Guiding principles

10. Measures taken to implement this framework should be consistent with rights and obligations under international law, including with respect to trade and having regard for economic, environmental and social principles, such as those listed in annex I to the framework. Stakeholders should also as far as possible promote:

(a) Prevention and minimization;

(b) Sustainable use of resources in both production and consumption;

(c) Recognition of waste as a resource (where appropriate);

(d) An integrated life-cycle approach;

(e) Innovation in the production and delivery of services.

11. In applying the framework, stakeholders should respect the waste management hierarchy (prevention, minimization, reuse, recycling, other types of recovery, including energy recovery, and final disposal). It is recommended that resources and tools be allocated in accordance with the hierarchy. Waste prevention should be the preferred option in any waste management policy. By not generating wastes and by ensuring that the wastes generated are less hazardous, the need to manage wastes and/or the risks and costs associated with doing so are reduced. Prevention, however, will not solve all the problems associated with waste management. Some wastes are already, or will inevitably be, generated and such wastes should be managed in an environmentally sound manner. When prevention and minimization possibilities have been exhausted, reuse, recycling and recovery techniques that deliver the best overall environmental outcomes, in accordance with the best available techniques (BAT), best environmental practices (BEP) and a life-cycle approach, are to be encouraged.

12. Governments and responsible authorities have a leading role to play in the implementation of ESM by setting requirements in their legislation and by implementing and enforcing them. All stakeholders involved in waste management, however, have an important role to play.

13. Partnerships, cooperation and synergies also have a key role in facilitating the implementation of ESM.

[5] See annex II.

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

A. A common understanding of what environmentally sound management encompasses

14. ESM includes the entire waste management hierarchy, including waste prevention, minimization, reuse, recycling, recovery and final disposal. Waste that cannot be prevented must be managed from the moment it is generated until it is put to some useful purpose through a recycling or recovery operation, or disposed of safely. In order to ensure that wastes are managed in an environmentally sound manner, it is necessary to:

(a) Have a clear picture as to which wastes are arising and the quantities that need to be managed;

(b) Understand how these need to be managed to ensure ESM (which will vary according to the waste stream);

(c) Have sufficient capacity to manage all waste streams in an environmentally sound manner;

(d) Ensure that those with a role in the generation and management of wastes (including Governments, generators, carriers, dealers, brokers and those managing facilities) understand what they need to do to ensure wastes are managed in an environmentally sound manner;

(e) Have a system that incentivizes compliance;

(f) Monitor the effectiveness of the system;

(g) Ensure transboundary movement of wastes is in compliance with the Basel Convention.

15. ESM of wastes requires the development and implementation of a system of policies, legislation and regulations, monitoring and enforcement, incentives and penalties, technologies and other tools in which all key stakeholders participate and cooperate. The following elements should be taken into account when establishing, implementing or evaluating ESM:

(a) Regulatory matters (e.g., compliance, enforcement, consistency and complementarity);

(b) Facility-related matters (e.g., regarding construction and infrastructure);

(c) Waste-related matters (e.g., prevention, collection, sorting, pre-treatment, treatment, storage, transport, downstream management);

(d) Resource and process efficiency;

(e) Environmental protection matters (e.g., prevention of pollution, emission limit values to air, water and soil);

(f) Occupational safety and health matters (e.g., regarding safety, health, liability and emergency response);

(g) Organizational matters (e.g., valid licence or permit, monitoring, record keeping, information to be provided to the authorities, aftercare, environmental insurance, management abilities/training level, applicable EMS);

(h) Transparency (publicly accessible information), due diligence and accountability;

(i) Innovation and research and development (e.g., through funding, information exchange and cooperation with academia and others).

16. The above-mentioned elements of ESM need to be translated into roles and responsibilities for each stakeholder group. These are outlined below in the roles and responsibilities section of the framework.

B. Tools to support and promote the implementation of environmentally sound management

17. Having established a common understanding of what ESM encompasses, tools need to be identified to support and promote its implementation. These tools might include a combination of legislative and regulatory tools, guidelines and/or codes of practice, voluntary certification schemes, voluntary agreements and schemes**,** mechanisms for cooperation at the international, regional, national and local levels, including with industry, training and awareness programmes, accountability and

reporting mechanisms and incentive schemes. As a further step and where appropriate, they may be tailored to address specific waste streams. Some tools are briefly outlined below and examples are provided in annex II of the framework.

(a) **Legislation.** Such legislation should make environmentally sound management operational and may include provisions on:

(i) Responsibilities of key stakeholders;[6]

(ii) Technical and organizational requirements;

(iii) Occupational safety and health and environmental requirements;

(iv) Environmental liability and insurance;

(v) Product policies, including extended producer responsibility schemes;[7]

(vi) Permitting, licensing and certification schemes;[8]

(vii) Civil and criminal penalties for non-compliance;

(viii) Access to information by the public.

(b) **Guidelines/codes of good practice.** Plain-language guidelines to accompany legislation and regulation to improve the knowledge and understanding of key stakeholders involved in making environmentally sound management operational.

(c) **Voluntary certification schemes**, consistent with applicable international rules. Norms and standards created by standards developing bodies and certification programmes.

(d) **Voluntary agreements and schemes**:

(i) Schemes and voluntary agreements to ensure compliance with provisions regarding ESM (e.g., product policies including EPR, responsible care, take-back schemes);

(ii) Eco-labelling and awards to promote environmental innovation and design.

(e) **Mechanisms for cooperation** (at international, regional, national and local levels, including with industry):

(i) Ensure inter-agency cooperation, including through established enforcement networks, to achieve/ensure ESM;

(i) Promotion of ESM through trade/industry associations, learned bodies, etc.

(f) **Training, awareness-raising and compliance promotion**:

(ii) Programmes for personnel and operator training;

(iii) Awareness-raising to encourage implementation of ESM and communication strategies;

(iv) Creation of an enabling environment for research and development, innovation and technology transfer.

(g) **Accountability and reporting mechanisms for all stakeholders;**

(h) **Economic and non-economic incentives:**

(i) Price incentives to promote and stimulate sorting at source;

(ii) Relief measures for facilities, such as reduced tax for a certain period, extension of a licensing period for an ESM facility, or other measures that reduce procedural or administrative burdens;

(iii) Recognition or award.

[6] Including authorities, waste generators, carriers, dealers, brokers and management facilities.

[7] Extended Producer Responsibility schemes are sometimes included in legislation to cover certain types of products. They may also be introduced on a voluntary basis by industry or in non-legislative agreements between industry sectors and Governments.

[8] Governments may choose to utilize certification schemes as a compliance tool.

C. Strategies to implement environmentally sound management

18. Strategies should be developed by parties to foster and enhance implementation of ESM of wastes at the international, regional, national, local and facility levels. These strategies should respect the waste management hierarchy and be compatible with the concepts presented in part V, sections A and B of this framework. Parties should review the implementation of these strategies on a periodical basis. In the event that goals are not being met or desirable results are not being achieved the problem and its root cause should be identified, corrective action should be implemented and the strategy should be revised, with an implementation plan, as necessary.

19. It is recognized that implementation of ESM is an evolutionary process that takes time to achieve and that existing provisions can vary greatly from country to country and from facility to facility. The capabilities and challenges faced by least developed countries, developing countries and countries with economies in transition need to be considered. In light of this, strategies should be devised to address variations in circumstances. To ensure effective strategy development, it is critical to systematically anticipate, identify and prioritize issues that need to be addressed by compiling baseline information on a variety of waste-related aspects such as:

(a) Types and quantities of wastes generated;

(b) Potential for waste prevention and minimization;

(c) Actual or potential risks posed to human health, worker safety and the environment;

(d) Available infrastructure and capacity to manage wastes;

(e) Applicable laws and enforcement provisions;

(f) Waste facility or sector-based measures in place to support ESM;

(g) Approaches used to validate whether facilities achieve ESM;

(h) Types of informal waste management activities;

(i) Availability of necessary funding to achieve ESM.

20. Any strategy should include a series of core goals to provide a general overview of how its overarching vision will be achieved. Taken together, the following goals represent tangible outcomes or milestones that are considered to be essential to achieve ESM:

(a) Establish a comprehensive legal framework to:

(i) Effectively govern all waste management operations;[9]

(ii) Protect the public and workers' health and safety;

(iii) Protect the environment;

(iv) Address movements of wastes in accordance with applicable international and regional agreements and conventions, including the Basel Convention.

(b) Implement effective compliance and enforcement measures to assure conformity with applicable legal requirements;

(c) Build sufficient domestic infrastructure and capacity to ensure availability of adequate facilities to undertake waste management operations and ensure these facilities achieve ESM.

21. A comprehensive legal framework establishes a level playing field to protect human health and the environment by obligating all stakeholders involved in waste management operations to comply with legal requirements. Such requirements include provisions that respect international and regional obligations. While law-making is typically a function of Governments and their agencies, it is important for all stakeholders to be aware of, and comply with, existing and emerging legal requirements in the jurisdictions where they conduct business.

22. Effective compliance and enforcement measures ensure that legal requirements are being met by waste management operations. Governments should ensure that consistent measures are in place to enable the competent authorities to confirm whether waste management operations are achieving ESM. Other opportunities also exist and may pertain to compliance promotion efforts, training for inspectors and enforcement officers, joint investigations and intelligence-led inspection activities and court prosecutions. From a facility perspective, compliance with applicable legal requirements is a

[9] Disposal operations refer to any operation specified in Annex IV (sections A and B) to the Basel Convention.

prerequisite for bona fide businesses and failure to comply with legal requirements can be very costly for an organization. Working with legally compliant suppliers and service providers is also important because it fosters ESM through management of the supply chain and serves to protect business reputations by meeting the expectations of investors, customers, regulators and the public. Voluntary certification schemes may be useful for confirmation of ESM. A number of standards and voluntary certification schemes are identified in annex II to the framework. The benefits of using such schemes to promote ESM should be explored.

23. Building sufficient domestic infrastructure and capacity to ensure availability of adequate facilities to undertake waste management operations allows wastes to be managed in close proximity to where they are generated, minimizing the need for them to be exported for management elsewhere, and provides opportunities for enhanced resource recovery, economic growth, employment and increased competitiveness within the global marketplace. Domestic infrastructure needs for waste management may vary considerably from country to country and include but are not limited to: collection services for wastes and recyclable materials; refurbishing, composting, material recovery and recycling facilities; and treatment and final disposal facilities for wastes.

24. The highest levels of support should be sought by key stakeholders to ensure acceptance of the vision and goals of their strategies to implement ESM and that adequate resources will be made available to support delivery. The importance and benefits of any strategy developed to foster and enhance implementation of ESM of wastes should also be well communicated to broaden awareness and foster acceptance of such strategies amongst key stakeholders.

VI. Role of key stakeholders

25. Key stakeholders, including Governments, waste generators, carriers, dealers, brokers, waste management facilities and non-governmental organizations, have a pivotal role to play in the achievement of ESM. This section of the framework lists the actions that these stakeholders should take to ensure implementation of ESM.

A. Governments

26. To ensure that wastes are managed in an environmentally sound manner and consistently within their respective domestic settings, Governments should ensure the provision and incorporation of certain policies into their legislative and regulatory frameworks, infrastructure and institutions. At the national level, Governments should:

(a) Ensure that a national policy, supported by an appropriately resourced and integrated regulatory and enforcement infrastructure is in place which, at an appropriate governmental level:

(i) Puts in place legal requirements such as national measures and mechanisms to implement and enforce the provisions of relevant international and/or regional instruments e.g., national legislation and regulations. These requirements should also apply environmental policy tools;[10]

(ii) Puts in place an adequate infrastructure to enforce regulations, taking into consideration the capacity of the enforcement authorities;

(iii) Incorporates a policy to move towards internalization of environmental and human health costs and benefits in waste management;[11]

(iv) Includes planning regulations that require appropriate design and location for waste management facilities, taking into account potential risks to the environment, including environmentally sensitive areas, and the requirement for

[10] Policy tools available to assist countries in developing and applying legislation include the strategic framework for the implementation of the Basel Convention 2012–2021; Basel Convention model national legislation; Basel Convention guide to the control system; Basel Convention checklist for the national legislator; Stockholm Convention on Persistent Organic Pollutants guide to developing national legal frameworks; applicable national and international instruments and codes of practice in relation to occupational safety and health.

[11] In many cases, environmental and human health costs resulting from waste management are not fully reflected in the financial costs of waste management. These external costs may vary considerably depending on factors such as local conditions or the nature of the waste. The financial costs of waste management may therefore be less than the total social costs, with the difference being borne by other economic operators. As long as this is the case, waste generators and managers may not have sufficient incentives to adopt an appropriate level of waste management within their facilities. In the same way, any environmental benefits should be internalized into waste management decisions at the facility level. (Guidance manual for the Implementation of the OECD Recommendation C(2004)100 on Environmentally Sound Management (ESM) of Waste, 2007).

an environmental and social impact assessment[12] to be conducted and approved by the appropriate authorities before a facility is constructed;

(v) Includes tools/instruments to support the implementation of the waste management hierarchy and ESM, such as authorizations, licences, time-limited permits, standards, requirements for environmental insurance and aftercare;

(vi) Develops clear legislation based on the Basel Convention and its guidelines defining what is/is not waste and what is/is not hazardous waste;

(vii) Sets limit values for emissions to air, water and soil for waste management facilities with a view to not exceeding reference quality levels in the receiving environment;

(viii) Implements applicable national and international instruments and codes of practice in relation to occupational safety and health;

(ix) Facilitates the efforts of appropriate authorities[13] to monitor the implementation and ensure compliance of waste management activities, including at the facility and individual level, with applicable legislation, rules and regulations;[14]

(x) In cases of non-compliance, includes provisions to allow prompt, adequate and effective enforcement actions to be undertaken, including sanctions and penalties, that will serve as a deterrent to non-compliance;

(xi) Supports the development and implementation of a regime for environmental liability and compensation for damage for facilities that carry out dangerous or potentially dangerous activities to ensure adequate measures upon definite cessation of activities and with a view to preventing and remedying potential environmental damage;

(xii) Supports the development and implementation of waste management for households, including increasing citizenship participation and public awareness, increasing collection efficiency and maximizing the separation of hazardous and non-hazardous wastes[15] that can be reused and recycled and financing mechanisms to achieve such waste management improvements;

(b) Foster continual improvement within the waste management sector, including:

(i) Development of requirements for those facilities which are integral to the waste life-cycle (including facilities which are involved in the generation, transport, storage, recycling and disposal of wastes) that are consistent with the Basel Convention, relevant decisions of its Conference of the Parties and technical guidelines, whilst remaining sufficiently flexible to allow for stronger requirements and additional waste definitions, taking into account national contexts;[16]

(ii) Development and implementation of measures to ensure facilities operate according to appropriate BAT and BEP, in a step-wise manner, which take into consideration the protection of the environment and the technical, operational and economic feasibility of doing so, while working toward continually improving environmental performance;

(iii) Dissemination to all stakeholders of relevant technical guidance and guidelines adopted by the parties to the Basel and Stockholm conventions, as well as by other international organizations,[17] for ESM of wastes;

(iv) Dissemination of information regarding existing activities related to ESM;

[12] A bibliography on social impact assessments can be found at: www.iaia.org/sia-bibliography/index.aspx.

[13] Includes Basel Convention competent authorities and other relevant authorities.

[14] For example, auditing schemes and training for competent authorities.

[15] Wastes contained in Annex IX of the Basel Convention will not be wastes covered by Article 1, paragraph 1 (a), of the Basel Convention, unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic.

[16] As provided for under Article 1, paragraph 1(b), Article 3 and Article 4 paragraph 11 of the Basel Convention.

[17] Basel Convention technical guidelines are available from www.basel.int and Stockholm Convention technical guidelines are available from www.pops.int.

(v) Encouragement of information exchange between all relevant stakeholders, including waste generators, carriers, dealers, brokers, managers and authorities, in order to foster waste prevention, optimize recovery and recycling operations and minimize the quantities, as well as the hazardousness of, wastes destined for disposal;[18]

(vi) Provision of incentives (e.g., economic incentives, regulatory relief measures such as fewer inspections, taxes, etc.) for facilities which adopt improvements going beyond the minimum performance elements outlined for the achievement of ESM at the facility level. Such measures could increase recycling and recovery rates, optimize resource productivity and minimize generation of waste residuals after recovery processes.

(c) Provide incentives to foster the development of infrastructure for relevant waste management technologies and facilities that support the leading elements of the waste management hierarchy and ESM such as waste prevention, including:

(i) Measures to increase waste prevention, reduction, reuse, recycling and recovery rates, taking into consideration sustainable management of materials;

(ii) Incentives to recognize environmental stewardship in the private sector and foster the development of voluntary certification programmes, consistent with the Basel Convention and other applicable international rules, relevant decisions of its Conference of the Parties, technical guidelines, relevant national implementing legislation, regulations and other measures;

(d) Put in place measures to ensure due diligence and proper management of wastes by all operators downstream of the point of generation, including waste carriers, dealers, brokers, other managers and disposers;

(e) Be transparent and require transparency to the public, subject to the appropriate protection of confidential business information;[19]

(f) Establish effective and meaningful consultation mechanisms or partnerships with key stakeholders, including the private sector (manufactures, designers, waste managers), workers, affected communities, non-governmental organizations, scientific, regional and international organizations and academia, and develop opportunities for technology transfer and technical assistance (enhancing industry support for knowledge-sharing and capacity building);

(g) Ensure adequate investment in waste management infrastructure and ESM of wastes at a national level:

(i) Where appropriate, ensure a legal and commercial framework to allow private investment in waste management infrastructure (public-private partnerships or commercial enterprises);

(ii) Incentivize waste generators and waste management facilities to practice ESM through regulation, pricing structures and penalties;

(h) Put in place other measures to ensure ESM of wastes, including:

(i) Legal requirements to implement and enforce the provisions of relevant international and/or regional instruments in relation to the transboundary movement of wastes (pre-notification, etc.,), including the Basel Convention;

(ii) Legislation requiring waste generators and waste transporters (including waste carriers) to ensure that the collection and transportation of waste, as well as its storage and treatment, are carried out in conditions providing protection for the environment and human health;

(iii) An easily accessible register (preferably online) of all licensed waste facilities in the country. This register should include data showing the annual compliance of the facility in terms of its licence requirements (to facilitate national and

[18] Examples of national initiatives, such as national waste prevention programmes, are available from www.basel.int.

[19] For example, all documents connected with waste licences or permits should be publicly accessible. See as an example the Irish Environmental Protection Agency website www.epa.ie. The material on this website relating to licence applications is made publicly available by the Agency under its statutory functions and the requirements of the European Union directive on access to information on the environment.

international customers who wish to select a facility that is achieving ESM). This register should also include a summary of the national regulations governing the construction and operation requirements for each facility and the number of inspections carried out on an annual basis (to facilitate assessments by waste exporters of the existence of an appropriate regulatory framework and safety networks in the country of import to ensure ESM);

(iv) Adequate monitoring, inspection and enforcement of waste imports and exports subject to the requirements of the Basel Convention, by agents of the State and cooperation with enforcement agencies in other States (to prevent illegal traffic). Ensure adequate penalties and sanctions for illegal traffic that will discourage such movements in the future.

B. Other stakeholders

27. Aside from Governments, other key stakeholders have a crucial role to play in ensuring a more systematic and comprehensive effort to improve ESM of wastes and to protect human health and the environment. These other stakeholders include waste generators, carriers, dealers and brokers, waste management facilities and non-governmental organizations.

1. Waste generators

28. Companies that generate wastes (waste generators) are responsible for ensuring they use and refer to BAT and BEP when undertaking activities that generate wastes. In doing so, they act to minimize the wastes generated, by ensuring research, investment in design, innovation and development of new products and processes that use fewer resources and energy and that reduce, substitute or eliminate the use of hazardous materials. These waste generators should aim for production that prioritizes the use of recovered or recycled materials; enables and encourages recovery of energy and resources at the end of the useful life of a product; and avoids additional pollution burden from waste management of end-of-life products.

29. Waste generators should internalize in their production processes and policies:

(a) Cleaner or greener design and production by implementing industrial conversion processes where feasible;

(b) Waste prevention and minimization;

(c) Prior to production, research, design and innovation in production and delivery of services, especially impact assessment at end of life, and integrated design for reuse, repair, disassembling (when appropriate), recovery and recycling;

(d) Assurance that waste management facilities and carriers comply with applicable legislation and hold corresponding licences/permits as appropriate;

(e) A requirement for confirmation from waste management facilities that wastes have been managed in an environmentally sound manner;

(f) Disclosure of information on generation, storage and disposal of wastes and that related to the use of hazardous chemicals and substances, their risks in products and wastes and their management inside and outside the facility;

(g) As appropriate, a voluntary third-party environmental certification procedure, which may include an applicable EMS;

(h) An understanding of proper implementation of and compliance with the Basel Convention for transboundary movements of wastes.

30. Where waste generators manage the waste generated at their sites themselves, these activities should meet the requirements as set out for waste management facilities in paragraphs 33 and 34 below.

2. Waste carriers

31. Persons or entities who transport wastes should have a licence or be registered as a waste carrier according to the legal provisions in the countries involved and have adequate installations for intermediary storage, when applicable. They should only transfer the wastes to an authorized person or entity. They should also ensure the following during the period in which the wastes are in their possession and/or under their control:

(a) Compliance with applicable legislation and the holding of corresponding licences/permits as appropriate;

(b) The wastes are adequately packed;

(c) Wastes of different types are delivered separately and are not diluted;

(d) The means of transport and the receptacles (drums or other packs in which the wastes are packed) are technically fit for the wastes they carry and have relevant certificates of examination. They should be kept in a good state of operation and be adequately cleaned to prevent mixing of wastes;

(e) Adequate measures are being taken to prevent harm to human health and the environment in case of accidents or emergencies and that the staff has sufficient knowledge, guidance and equipment to that end and carries a contingency plan which includes specific procedures for the type of wastes being transported;

(f) Sufficient environmental insurance or financial guarantees are in place;

(g) All necessary documentation is available.

3. Waste dealers and brokers

32. Dealers and brokers should ensure that the wastes they buy and sell will be managed in such a way that ESM is assured. In particular they should ensure that:

(a) They have the appropriate licences and approvals for executing their activities according to national legislation;

(b) The relevant PIC procedure is complied with;

(c) The shipment is appropriately packaged and labelled in accordance with national requirements, which may include the codes of the Globally Harmonized System of Classification and Labelling of Chemicals;

(d) An appropriately documented custodial trail is available for each waste shipment undertaken;

(e) The wastes will be delivered to a facility that has the proper licences and approvals to deal with the particular type of waste in question and that the operation of these facilities is in accordance with the requirements of ESM;

(f) Adequate environmental insurance and financial guarantees are in place.

4. Waste management facilities

33. Waste management facilities that handle wastes should meet all basic requirements to ensure ESM of wastes and commit to continual improvement in their operations.[20]

34. 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 at end of life, as appropriate. As such, a facility should have the following, which should meet the approval of the competent authorities concerned:

(a) Appropriate design and location of the plant, taking into account potential risks to the environment, including environmentally sensitive areas;

(b) Where appropriate, an environmental and social impact assessment, which should be conducted and approved by the appropriate authorities before a facility is constructed;

(c) Sufficient measures in place to safeguard OSH, including:

(i) Measures which meet the requirements of national OSH legislation;

(ii) 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;

[20] For source information, see annex I of the recommendation of the OECD Council on the environmentally sound management of waste, C(2004)100, as amended by C(2007)97, available from http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=51&InstrumentPID=48&Lang=en&Book=False.

(iii) 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;

(d) Sufficient measures in place to protect the environment, including:

(i) Measures to control pollution taking into account emission limit values to air, water and soil;

(ii) 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;

(iii) 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;

(e) An applicable environmental management system in place, if feasible and appropriate, which:

(i) Describes, assesses and reviews the design, construction, operation, monitoring, management and maintenance of the facility and which will be periodically reviewed;

(ii) Demonstrates compliance with applicable legislation and regulations;

(iii) Demonstrates the commitment of management to integrating a systematic and consistent approach to achieve ESM in all aspects of facility operations;

(iv) 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;

(f) An adequate and transparent monitoring, recording, reporting and evaluation programme[21] which covers:

(i) Relevant legal requirements, including key process parameters;

(ii) Compliance with applicable safety requirements;

(iii) Effluents and emissions;

(iv) Records of incoming, stored and outgoing wastes.

(g) An adequate emergency plan and response mechanism;

(h) An adequate plan for closure and aftercare, which includes the identification and remediation of contaminated sites.

5. Non-governmental organizations

35. Non-governmental organizations are an important stakeholder group, representing civil society and advocating on behalf of environmental protection, social welfare and other matters. They may variously provide value as an independent monitor and a source of research and information, policy development, public education and awareness-raising. They should be included by Government and other stakeholders in policy and legislative development as appropriate.

[21] All relevant environmental records should be maintained and made available to competent authorities according to national legislation and/or local authorization/licence/permit requirements.

VII. Linkage between environmentally sound management and transboundary movements

36. In line with paragraph 219 of the outcome document of the United Nations Conference on Sustainable Development,[22] and for the purposes of this framework, where linkages with transboundary movement of wastes are concerned, ESM should include all possible measures to prevent unsound management of hazardous wastes and other wastes and their illegal dumping, particularly in countries where the capacity to deal with these wastes is limited, in a manner consistent with the obligations of countries under relevant international instruments.

37. A common understanding and implementation of ESM in particular through national regulations, among other considerations, assists authorities and other stakeholders to determine the legitimacy of a transboundary movement of wastes.

38. Legal transboundary movements should ensure ESM that is consistent with Articles 4 to 9 of the Basel Convention, taking into account decision III/1 on an amendment to the Basel Convention for countries to which the amendment applies.

39. Transboundary movements of wastes for management in another country cannot be assured to result in ESM by evaluating receiving facilities alone. Elements such as those for effective legal systems and infrastructure listed in paragraph 7 above should also be considered.

40. Transboundary movements of wastes should not be considered to be legal where there is a reason to believe the waste in question will not be managed according to ESM. .

41. The availability of adequate ESM facilities should be promoted, especially if it leads to a reduction in transboundary movements of wastes.

42. Transboundary movements as referred to in paragraph 39 above may be part of facilitating the best environmental outcome, for example when the State of export lacks adequate capacity for ESM.

VIII. Indicators for the verification of performance

43. Following the adoption of strategies to implement ESM, Governments should set up a programme to measure progress in implementation. The choice of indicators that are to be used in that context may differ depending on the strategies that are put in place to overcome the challenges that have been identified. Typically, they would cover activities at both Government level and facility level.

44. Indicators to measure progress at Government level may include:

(a) Legal instruments or requirements to implement and enforce the provisions of relevant international and/or regional instruments are in place;[23]

(b) National strategies, plans, programmes or systems to support the waste management hierarchy are developed and implemented;

(c) Schemes at the national or regional level to foster continual improvement within the waste management sector, including measures to ensure facilities operate according to appropriate BAT and BEP, encourage information exchange, provide incentives and implement the relevant technical guidance and guidelines adopted by the Basel Convention;

(d) Systems for measuring, monitoring, recording and reporting to assess progress in ESM of wastes have been implemented;

(e) Number of notifications for export of wastes destined for ESM facilities;

(f) Checklists for inspectors to support regular inspections and enforcement have been developed and implemented;

[22] Annex to General Assembly resolution 66/288.

"219. We urge countries and other stakeholders to take all possible measures to prevent the unsound management of hazardous wastes and their illegal dumping, particularly in countries where the capacity to deal with these wastes is limited, in a manner consistent with the obligations of countries under relevant international instruments. In this context, we welcome the relevant decisions taken at the tenth meeting of the Conference of the Parties to the Basel Convention, held in Cartagena, Colombia, from 17 to 21 October 2011."

[23] This may be a general indicator or a more detailed set of indicators covering legislation on storage, packing, risk management, emissions, transport, etc.

(g) Active participation in networking and information exchange among relevant parties and networks about ESM, e.g., IMPEL, INTERPOL, INECE and the Asian Network for the Prevention of Illegal Transboundary Movement of Hazardous Wastes, etc.

(h) Ensuring that training programmes for staff involved in the ESM of wastes have been developed and executed.

45. Indicators to measure progress at the facility level may include ensuring that:

(a) Environmental and social impact assessments for approval by appropriate authorities were undertaken and submitted before the location of the facility was determined and construction took place;

(b) An applicable environmental management system e.g., ISO 14001 or EMAS, etc., has been developed and implemented;

(c) The waste management facility has obtained all the necessary permits, according to the applicable legislation;

(d) Appropriate audits (internal and external) have been submitted;

(e) Training programmes for staff involved in ESM of wastes have been developed and executed;

(f) Emergency plans and response mechanisms have been developed and applied;

(g) Plans for closure and aftercare have been developed and submitted to the appropriate authorities.

IX. Recommendations

46. Parties to the Basel Convention should:

(a) Compile baseline information on those waste-related aspects identified in paragraph 19 above and develop strategies based on this information (Ref. paragraphs 18 & 19);

(b) Review implementation of the strategies referred to in subparagraph (a) above on a periodic basis. In the event that goals are not being met or desirable results are not being achieved, the problem and its root cause should be identified, corrective action should be implemented and the implementation plan and/or strategy should be updated where necessary (Ref. paragraphs 18, 19 & 20);

(c) Formalize development and implementation of strategies under the work of the Basel Convention to facilitate and advance ESM at the international and regional levels, taking into consideration the guidance provided in this framework and specifically the core goals outlined in paragraph 20 above (Ref. paragraphs 18, 19 & 20).

47. National Governments should formalize development and implementation of strategies to facilitate and advance ESM at the national and local levels, taking into consideration the guidance provided in this framework (Ref. paragraph 26).

48. The “Other stakeholders” mentioned in this framework should be encouraged to formalize development and implementation of actions to achieve ESM, taking into consideration the guidance provided in this framework (Ref. paragraphs 27 to 35).

Annex I

Guiding principles

Measures taken to implement this framework should be consistent with rights and obligations under international law, including with respect to trade and having regard to economic, environmental and social principles such as:

(a) The "polluter pays" principle, defined in the Rio Declaration on Environment and Development as principle 16, under which national authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment;

(b) The precautionary approach defined in the Rio Declaration on Environment and Development as principle 15, whereby in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation;

(c) The proximity principle, derived from Article 4, paragraph 2 (b) of the Basel Convention, which states that each Party shall take appropriate measures to ensure the availability of adequate disposal facilities, for the environmentally sound management of hazardous wastes and other wastes, that shall be located, to the extent possible, within it, whatever the place of their disposal; and Article 4, paragraph 2 (d), which states that each party shall take appropriate measures to ensure that the transboundary movement of hazardous wastes and other wastes is reduced to a minimum consistent with the environmentally sound and efficient management of such wastes and is conducted in a manner which will protect human health and the environment against the adverse effects which may result from such movement;

(d) The least transboundary movement principle also deriving from Article 4, paragraphs 2 (b) and 2 (d) of the Basel Convention (see also the proximity principle in (c) above);

(e) The principle of responsibility for ESM of hazardous waste generated within a State cannot be transferred to another State, based on Article 4, paragraph 10 of the Basel Convention;

(f) The goal of environmental justice for the fair treatment and meaningful involvement of all people regardless of race, colour, national origin or income, with respect to the development, implementation and enforcement of environmental laws, regulations, and policies.

Annex II

Resource documents[1]

A common understanding of what environmentally sound management encompasses

1. Recommendation of the OECD Council on the environmentally sound management of waste of 9 June 2004 - C(2004)100 amended on 16 October 2007 - C(2007)97 (annex I includes the core performance elements for the environmentally sound management of waste), available from: http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=51&InstrumentPID=48&Lang=en&Book=False.

2. Guidance manual for the implementation of recommendation C(2004)100, available from: www.oecd.org/dataoecd/23/31/39559085.pdf.

3. Guidance documents on the preparation of technical guidelines for the environmentally sound management of wastes subject to the Basel Convention, 1994, available from: www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx.

4. Environmentally sound management criteria recommendations for the Partnership for Action on Computing Equipment, 2009, revised in 2011, available from: http://archive.basel.int/industry/compartnership/docdevpart/aipgReportESMCriteriaRecommendationsn-2011-03-15.pdf.

Tools to support and promote the implementation of environmentally sound management

Model legislation and other related tools

5. Basel Convention Model National Legislation, available from: www.basel.int/Implementation/LegalMatters/LegalFramework/Tools/tabid/2750/Default.aspx.

6. Basel Convention Checklist for the National Legislator, available from: www.basel.int/Implementation/LegalMatters/LegalFramework/Tools/tabid/2750/Default.aspx.

7. Basel Convention Guide to the Control System, available from: http://archive.basel.int/pub/pub.html.

Guidelines/codes of good practice

8. Waste stream-specific technical guidelines that have been developed and adopted under the Basel Convention, available from: www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx.

9. Stockholm Convention on Persistent Organic Pollutants, Guide to developing national legal frameworks, available from: http://chm.pops.int/Convention/LegalMatters/LegalMattersPublications/tabid/2245/Default.aspx.

10. The Cairo Guidelines and Principles for the Environmentally Sound Management of Hazardous Wastes, 1987, available from www.basel.int/Implementation/LegalMatters/CountryLedInitiative/OutcomeofCOP10/DevelopingguidelinesforESM/TechnicalExpertGroup/Documents/tabid/2683/Default.aspx.

11. Guidelines on best available techniques and provisional guidance on best environmental practices, available from: http://chm.pops.int/Implementation/BATBEP/Guidelines/tabid/187/Default.aspx.

12. Guidance on development of national implementation plans, available from: http://chm.pops.int/Implementation/NIPs/Overview/tabid/565/Implementation/NIPs/Guidance/tabid/587/language/en-US/Default.aspx.

13. Best available techniques reference documents, European Commission, available from: http://eippcb.jrc.es/reference/.

[1] This annex provides a non-exhaustive list of resource documents.

14. United Nations Environment Programme, Division of Technology, Industry and Economics, International Environmental Technology Centre publications, available from: www.unep.or.jp/ietc/SPC/publications.asp.

15. Training Resource Pack for training on hazardous waste management, available from: www.trp-training.info/.

Standardization/voluntary certification schemes:

16. ISO Standards, available from www.iso.org/iso/home.html.

17. ISO 14001 standard, available from: www.iso.org/iso/iso_catalogue/management_and_leadership_standards/environmental_management/iso_14000_essentials.htm.

18. British Standards Institution, OHSAS 18001 Occupational Health and Safety Management, available from: www.bsigroup.com/en/Assessment-and-certification-services/management-systems/Standards-and-Schemes/BSOHSAS-18001/.

19. European Union Eco-Management and Audit Scheme (EMAS), available from: http://ec.europa.eu/environment/emas/index_en.htm.

20. Bureau of International Recycling, Tools for Environmentally Sound Management, (2006), available from: www.bir.org/assets/Documents/Public/GuideESM.pdf.

21. Bureau of International Recycling, Tools for Occupational Health and Safety Management, (2013), available from: ww.bir.org/assets/Documents/publications/OHSMS-Tools/OHSMS-Tools.pdf.

22. Basel Action Network, e-Stewards standard for responsible recycling and reuse of electronic equipment, available from: http://e-stewards.org/certification-overview/.

23. Recycling Industry Operating Standard (RIOS), available from: www.isri.org/imis15_prod/ISRI/_Program_and_Services/Recycling_Industry_Operating_Standards__RIOS_/ISRI/_Program_and_Services/Recycling_Industry_Operating_Standards__RIOS_.aspx.

24. R2Solutions, responsible recycling practices for use in accredited certification programmes, available from: www.r2solutions.org/.

25. PAS 99 (publicly available specification) integrated management system requirements specification, available from: www.bsigroup.com/en-GB/pas-99-integrated-management/.

26. Recycler Qualification Office, recycling vendors qualification programme and electronics reuse and refurbishing programme, available from: www.rqp.ca .

Additional guidance on occupational safety and health:

27. International Labour Organization guidelines on occupational safety and health management systems (ILO-OSH 2001), available from: www.ilo.org/safework/info/standards-and-instruments/WCMS_107727/lang--en/index.htm.

28. OHSAS 18001 Standards for Occupational Health and Safety Management Systems is usually available from national standards institutions, e.g., the British Standards Institution:

www.bsigroup.com

The following site is an electronic tool kit which includes the standard and advice but has to be purchased for $395 from www.ohsas-18001-occupational-health-and-safety.com/ohsas-18001-kit.htm.

29. The Health and Safety Authority of Ireland has online advice on developing an OHS management system for a number of different occupations/industries. While waste management is not yet included in its directory, the site contains some useful general videos covering the elements of an OHS system (as per Irish legislation) and risk assessment. See the following links:
http://vimeo.com/19383449 about the online system
http://vimeo.com/19971075 on risk assessment
http://vimeo.com/19970831 on the safety statement.

30. The United Kingdom Health and Safety Executive has useful online guidance on occupational health and safety relating to the waste industry, including various specific areas of waste management, including: www.hse.gov.uk/waste/index.htm on waste management and recycling www.hse.gov.uk/waste/waste-electrical.htm on waste electrical and electronic equipment recycling.

31. The United States Department of Labor, Occupational Safety and Health Administration, 29 Code of Federal Regulation (CFR) 1910.120 , occupational safety and health standards on hazardous waste operations and emergency response that employers must follow to protect workers engaged in hazardous waste operations and emergency response work, available from: www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9765.

附錄 2-3　舊廢物品研究報告

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BASEL CONVENTION

Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Eleventh meeting
Geneva, 28 April–10 May 2013
Item 4 (a) (i) of the provisional agenda*

Matters related to the implementation of the Convention: strategic issues: follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention

Study on used and end-of-life goods

Note by the Secretariat

As referred to in document UNEP/CHW.11/3 on the follow-up to the Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention, the annex to the present note contains a study on used and end-of-life goods that was finalized and taken note of by the Open-ended Working Group at its eighth meeting.[1] The annex to the present note has not been formally edited.

* UNEP/CHW.11/1.

[1] Decision OEWG-8/7 on the follow-up to the Indonesian Swiss country-led initiative: providing further legal clarity.

Annex

Study on used and end-of-life goods

Executive Summary

In accordance with Decision BC-10/3, this study identifies options for dealing with the problem posed by the transboundary movement and disposal of used and end-of-life goods ("UELG"). These goods do not easily fit the paradigm of wastes to be permanently disposed of. The re-use or recycling of such goods can conserve resources and provide significant economic opportunity to both exporting and importing States. At the same time, export of such goods, especially when not accomplished for the purported purpose of re-use, carries risk to health and the environment, particularly in countries that lack the necessary capacity and infrastructure to manage them properly, including assuring environmentally sound management and disposal of any hazardous components. In addition, lack of clarity regarding the status of these goods under the Basel Convention, combined with divergent national approaches, have complicated efforts to effectively manage their transboundary movement.

A number of Parties to the Basel Convention have developed measures, strategies and policies to address this issue, and a considerable amount of guidance has been developed by public-private partnerships such as the Partnership for Action on Computing Equipment and the Mobile Phone Partnership Initiative. There is considerable agreement that goods are not wastes if destined to be re-used for the purpose they were intended, without the need for repair, refurbishment, or similar processing. However, a lesser degree of consensus has emerged regarding goods that are in need of such processing prior to re-use. There are differences as to whether and how much (if any) processing is allowed before a good is considered a waste, what characteristics should be demanded of the good in question, and what criteria should be applied to any refurbishment or other processing operation. Finally, most Parties consider that used and end-of-life goods, destined not for re-use but for recycling[1] or recovery operations[2], are wastes to be managed, if hazardous, in accordance with the Basel Convention.

This study also considers the relationship between trade and the environment as it relates to UELG, and concludes that carefully designed and targeted measures to regulate transboundary movement of such goods are not likely to violate international trade rules, if applied in the context of a widely accepted international agreement, such as the Basel Convention.

Drawing upon Party practice and the various guidance documents on the subject, this study offers several options for dealing with the problem posed by UELG, some of which could include take-back obligations.[3] The study considers direct re-use, re-use after some processing; and recycling/recovery of UELG. The Open ended Working Group is invited by the COP to report on the present study and its deliberations thereon to the Conference of the Parties at its eleventh meeting.

[1] For purposes of this study, the term "recycling" refers to the processing or transformation of used materials into new products. The term does not include re-use or direct re-use.

[2] For purposes of this study, the term "recovery operation" refers to processes by which materials which are no longer fit for their originally intended purpose are transformed into a usable state or by which materials are extracted in usable form. Cf, Basel Convention Technical guidelines on the environmentally sound recycling/reclamation of metals and metal compounds (R4), http://www.basel.int/DNNAdmin/AllNews/tabid/2290/ArticleType/ArticleView/ArticleID/189/Default.aspx. (Retrieved 14 May 2012.)

[3] Given the paucity of references on the topic, the options presented do not attempt to clarify the concept of "charitable donations," although it is possible that such donations could be subject to different criteria than those that apply to UELG that are sold.

Table of contents

Introduction

This study was prepared in response to Decision BC-10/3 of the Conference of Parties ("COP") to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (hereinafter, the "Basel Convention" or "Convention"). In that decision, adopted in furtherance of the "Indonesian-Swiss country-led initiative to improve the effectiveness of the Basel Convention", the COP noted that "a number of the provisions of the Convention are interpreted differently by parties and that the implementation and application of these provisions would benefit from additional legal clarity." The COP also "[r]ecogniz[ed] that there needs to be a clear distinction between wastes and non-wastes for some used equipment and second hand goods and that imports of used and near end-of-life goods that soon become waste are a matter of serious concern in some countries." The decision called for the preparation of "a study to identify options for dealing with the problem posed by used and end-of-life goods, which could include take-back obligations and clarification of the concept of 'charitable donations.'" As requested by the COP, this study was finalized in the light of the comments received from Parties on a first draft dated 21 May 2012.

This study is divided into four parts. The first part explains the methodology underlying its preparation. The second part identifies problems faced by Parties with respect to used and end-of-life goods (hereinafter, "UELG").[5] The third part of the study summarizes how Parties and signatories address these problems, as well as other work and initiatives to address UELG. In accordance with the instructions in Decision BC-10/3, the third part also considers the relationship between trade and the environment in the context of transboundary movement of wastes and transboundary movements involving UELG. The final part of this document presents some potential options for dealing with the problems presented by UELG.

The Open ended Working Group is invited by the COP to report on the present study and its deliberations thereon to the Conference of the Parties at its eleventh meeting.

Part I: Methodology

This study is largely based on a review of information contained in:

- Responses of Parties and other stakeholders to the "Questionnaire on options for dealing with the problem posed by used and end-of-life goods, including take-back obligations and the concept of "charitable donations," circulated by the Secretariat in February 2012 pursuant to COP Decision BC-10/3 (hereinafter, the "2012 Questionnaire").[6]
- Recent communications (from 2008-2011) from Parties to the Basel Convention Secretariat regarding the subject matter of the study;
- Compilation of communications from Parties and summary of national laws and regulations, prepared by the Secretariat in 2008 and 2009;
- Comments submitted by several Parties on a draft of this study, dated 21 May 2012[7];
- Liaising with focal points and competent authorities of several Parties, as a means of clarifying some points raised in the responses and comments mentioned above;
- Review of national and regional laws and other instruments;
- Guidelines and guidance (some still in draft) issued by the Partnership for Action on Computer Equipment ("PACE") and the Mobile Phone Partnership Initiative ("MPPI");

[5] This study generally uses the term "used goods" to refer to items that may be destined to be re-used without major transformation, whereas end-of-life goods may be subject to recycling or recovery operations and become part of a new product, but are not likely to be re-used without undergoing a major transformative process.

[6] The following Parties responded in time to the 2012 Questionnaire: Argentina, Brazil, Canada, Central African Republic, Chad, Colombia, the European Union and Member States, Ivory Coast, Japan, Lithuania, Malaysia, Montenegro, Morocco, Nicaragua, Paraguay, St. Lucia, Yemen, and Zambia. Responses were also received from the United States, BCRC Teheran, the Information Technology Industry Council, Phillips Medical, and PC Rebuilders and Recyclers, LLP. Unless otherwise indicated, responses to the 2012 Questionnaire, reproduced as Appendix 1 to this study, are the source for references to Parties' laws, regulations, views, and policies. A more detailed summary of those responses, as well as other information provided by Parties and stakeholders, is provided in Appendix 2.

[7] Comments were submitted by Canada, the Central African Republic, the European Union and its member States, Malaysia and the Philippines.

- Reports issued in connection with various initiatives, particularly those involving the Basel Convention, pertaining to the subject of the study, particularly regarding the distinction between waste and non-waste;
- Reports issued by the Organisation for Economic Development ("OECD"), the World Trade Organization ("WTO") and other international organizations; and
- Publications by non-governmental organizations and academicians[8].

In addition, the attention of the reader is drawn to the latest version of The Basel Convention Draft Technical Guidelines on Transboundary Movements of Electronic and Electrical Waste (e-waste), in particular the Distinction Between Waste and Non-waste (UNEP/CHW/OEWG.8/INF/9)[9].

Information regarding the laws, practices and policies of the Parties, as well as recommendations found in the guidance documents mentioned above, was compiled and analyzed for commonalities and differences. The study highlights common and regional approaches, and draws heavily on those approaches in the options presented in Part V.

Part II: Problems Posed by Used and End-of-life Goods

1. Background

Hazardous waste moved to the forefront of the global environmental agenda in the early 1980s, following the discovery in several developing countries of deposits of toxic wastes imported from abroad. In response to growing international concern about the hazards posed to human health and the environment by transboundary movement of hazardous wastes and their disposal, the Basel Convention was adopted by a conference of Plenipotentiaries in Basel, Switzerland on 22 March 1989.[10]

Although hazardous waste dumping and other unsafe final disposal practices may have precipitated development and adoption of the Convention, the instrument also applies to waste destined for certain recycling/recovery operations specified in Annex IVB, which bears the caption, "Operations which may lead to resource recovery, recycling, reclamation, direct re-use or alternative uses."

The Basel Convention's framework rests on three pillars:(i) a global control system for the transboundary movement of wastes; (ii) the environmentally sound management ("ESM") of wastes; and (iii) minimizing the generation of wastes. The extent to which UELG is subject to the global control system for transboundary movement of wastes, or to other potential mechanisms for the control of international trade in UELG, has implications for the environmentally sound management of those goods and their components, particularly in developing countries. In addition, the manner and degree to which the global control system is applied to the transboundary movement of used and end-of-life goods could affect the extent to which and how such goods are in fact re-used, recycled, or recovered.

This study applies to all UELG, and as such, used electrical and electronic equipment ("UEEE") are only one example of the waste streams covered by this study.

2. Identification of problems posed by used and end-of-life goods

Used goods, in particular UEEE, play an important role in the world's economy. Access to lower-priced information and communication technology equipment can contribute to higher living standards and development in developing countries, and to the achievement of United Nations Millennium Development Goals. Management of UEEE plays an important economic and social role in some developing countries. For example, in Accra, Ghana and Lagos, Nigeria alone, the refurbishing sector provides income to more than 30,000 people.[11] Re-use, refurbishment and recycling of UEEE if done under the appropriate conditions can also promote resource efficiency, reduce consumption of rare metals, and reduce greenhouse gas emissions, by avoiding energy-intensive primary production of electrical and electronic equipment ("EEE") and its component materials.

[8] Due to space limitations, few of these sources are cited in this document.

[9] This document was not yet available at the time of the finalization of this document.

[10] United Nations Treaty Series, Vol. 1673, p. 57 et seq. The Basel Convention entered into force on 5 May 1992.

[11] Basel Convention Secretariat, "Where are Weee in Africa,": http://www.basel.int/Implementation/TechnicalAssistance/EWaste/EwasteAfricaProject/Publications/tabid/2553/ Default.aspx. (Retrieved 11 May 2012.)

Despite these potential benefits, substantial concern has been raised in recent years about potential environmental and human health problems associated with the transboundary movement of UELG. Informal, unregulated, and improper recycling, recovery, and disposal practices associated with UEEE and its components have released large amounts of toxic chemicals, endangering workers, nearby communities, and the environment.[12]

Few of the respondents to the February 2012 Questionnaire circulated by the Basel Convention Secretariat mentioned specific environmental or health concerns in their responses to the question: "Has your country been faced with or identified problems posed by used and end-of-life goods, particularly transboundary movements of such goods?"[13] Rather, Parties have identified two types of practical problems associated with the transboundary movement of UELG: insufficient capacity and infrastructure, and difficulties associated with the definition, classification and regulation of UELG.

a. Capacity and infrastructure -- Several Parties (Andorra, Bosnia & Herzegovina, Bhutan, Central African Republic, Chad,[14] and Montenegro) noted difficulty in providing the requisite technological expertise, processing capacity, or legal/enforcement infrastructure necessary to assure that imported UELG is handled in a safe and environmentally sound manner. Andorra reported that due to its size and resources, the Party lacks the means to treat and recover all hazardous wastes and other wastes generated within it, and accordingly would probably not restrict the export of wastes that it cannot treat or recover itself. Similarly, Bhutan has stated: "We do not have required infrastructure and facilities for recovery. This is coupled with lack of technology and capacity in managing the hazardous wastes."[15] Presumably, this concern is less acute for items that will be directly re-used, although safeguards to ensure that direct re-use actually occurs should be put in place since in the absence of such direct re-use the Basel Convention requirements, in particular those pertaining to environmentally sound management ("ESM"), would apply. In addition, re-use might only be possible for a limited period of time: if the good is at or near its end of life, the issue of its disposal in compliance with ESM requirements will soon arise.

b. Regulatory issues -- Several Parties (Argentina, Canada, Colombia, the European Union and its member States - hereinafter referred to as "the EU"-, Japan, Lithuania, and Morocco) cited difficulty or divergences in differentiating (either on their own part or, in the case of Japan, on the part of trading partners) between used goods and waste.[16] Customs authorities have had difficulty identifying the intended disposition, useful life, and functionality of imports. National and international import statistics generally do not distinguish between the import of new and used EEE, thus making tracking of UEEE in the country of import difficult.[17] The EU cited difficulties associated with distinguishing between used goods and wastes in the context of charitable donations, and noted

[12] See, e.g., the Ghana e-waste Country Assessment, http://ewasteguide.info/files/Amoyaw-Osei_2011_GreenAd-Empa.pdf. (Retrieved 13 April 2012.) Advocates for re-use of exported UELG do not generally contest this proposition. (See, e.g., Response to 2012 Questionnaire from the Information Technology Industry Council (ITI) (acknowledging that it is "keenly aware of the problems posed by the mismanagement of end-of-life electronic goods," and "supports efforts under the Convention to ensure 'sham recycling' activities are identified and prohibited)."

[13] An exception was the Ivory Coast, who pointed to "Insalubrité, incapacités (financière, matérielle et institutionnelle de gestion de ces différents produits en fin de vie), pollution (du sol, de l'eau, de l'air….)". (Ellipsis in original.) In addition, Argentina reported unspecified problems with imported materials such as sludge treatment plants, used tires, and UEEE; and Brazil reported several cases of illegal transboundary movements of lead-acid automotive used batteries.

[14] Chad reported that it is supported by the Global Environment Facility (GEF) and the Basel Convention Regional Centre for Training and Technology Transfer For French speaking countries in Africa (based in Dakar, Senegal) in the management of PCBs and PCB transformers. However, Chad has no legislation governing the collection and transport for hazardous waste (PCBs).

[15] Basel Convention national reporting compilation, 2009, http://www.basel.int/Portals/4/Basel%20Convention/docs/natreporting/2009/compI/2009-question-3b.pdf

[16] At the Regional Workshop on Prevention of Illegal Transboundary Movement for Hazardous Waste in Asia held in Beijing in March 2007, participants "shared the perception that illegal traffic of hazardous waste, especially UEEE and waste EEE ("WEEE"), could partly be attributed to differences in interpretation and lack of mutual understanding among Asian (and other) countries regarding the concept of "reusable" products and/or "hazardous" waste and material. Participants agreed that exporting countries should respect the import controls of the countries of import regarding used/waste electrical and electronic equipment." Basel Convention Coordinating Center for Asia and the Pacific (Asia-Pacific Regional Centre for Hazardous Waste Management Training and Technology Transfer), Report of the Project on "the Import/Export Management of E-waste and Used EEE," (June 30, 2009) (hereinafter, the "BCCCAP Project Report"). See http://www.env.go.jp/en/recycle/asian_net/Project_N_Research/E-wasteProject/10.pdf Retrieved 19 April 2012.

[17] See Colombia response to 2012 Questionnaire and Basel Convention; See also "Where are Weee in Africa," note 9 supra.

that such donations had been used as a "cloak" for the export of waste. In a similar vein, Japan advised that some wastes "disguised as the second-hand items" were illegally exported and intercepted by the intended country of import, although it appears that differing national definitions and regulations regarding second-hands goods were also a factor. Malaysia cited illegal import and export of end-of-life cathode ray tubes and computer monitors. Nicaragua advised that too much equipment, products and materials are being imported, and that companies or importers tend to disappear, with the result that materials are illegally disposed of in landfills. Zambia voiced similar concerns.

Industry has also cited concerns about divergent regulatory policies. The Information Technology Industry Council (ITI) reported that at recent meetings of the PACE Working Group, uncertainty surrounding the ability to export used equipment for repair or environmentally sound recycling was identified by its members as a significant barrier to the expansion of voluntary programs in developing countries. Likewise, Phillips Medical indicated that "transboundary shipments of used products regularly meet with administrative/bureaucratic hurdles which impede our desire to create closed loop material streams such as the recovery of rare earth from fluorescent lamps, refurbishment of medical equipment, and parts harvesting of professional products."

Part III: Addressing problems associated with UELG

1. Approaches adopted by Parties

Parties have adopted a variety of measures, strategies, and policies to address the problems associated with UELG. A summary of these follows. More detail may be found in the Appendix 2 to this study.

a. Comprehensive programs -- The EU's legal framework for the treatment of waste, or "Waste Framework Directive,"[18] establishes a waste hierarchy. In order of priority are: prevention; preparing for re-use; recycling; other recovery,[19] notably energy recovery, and disposal. EU Directives require Member States to introduce legislation on waste collection, re-use, recycling and disposal of UELG. Among other things, Member States are required to: (i) promote the design and production of EEE with a view to encouraging re-use; (ii) set up separate collection systems and optimize collection and transport of WEEE for preparing for re-use, recycling and the confinement of hazardous substances; (iii) establish targets for the recovery and recycling of WEEE; and (iv) ensure that producers provide financing of the collection, treatment, recovery and environmentally sound disposal of WEEE.[20]

b. Criteria for re-use -- As is discussed in more detail in the accompanying draft report on the implementation of the Basel Convention as it relates to the interpretation of certain terminology, several Parties e.g. Argentina, Canada, China, Colombia, EU, Japan, Singapore, South Africa, as well as the Hong Kong Special Administrative Region of China ("HKSAR"), have developed or are developing measures to clarify when a UELG is to be considered and regulated as a (hazardous) waste, particularly in the context of EEE. Among the measures undertaken are:

- excluding from waste status items that are directly re-used, without intervening repair, refurbishment etc. between import and re-use;
- providing objective criteria to determine whether an item is sufficiently functional and marketable to be considered as intended and destined for re-use; for example:
    - Some Parties (e.g. China, Singapore) require that imported UEEE (and sometimes UEEE intended for export) be accompanied by documentation of functionality testing.

[18] Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008. In June 2012, the European Commission published a guidance document on the interpretation of key provisions of Directive 2009/98/EC on waste (http://ec.europa.eu/environment/waste/framework/pdf/guidance_doc.pdf).

[19] Re-use is distinct from recovery (defined as: operation the principal result of which is waste serving a useful purpose) and recycling (defined as: any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes).

[20] Directive 2011/…/EU of The European Parliament And Of The Council On Waste Electrical And Electronic Equipment (WEEE), (recast) Articles 4-6, 11-13.

- China requires that all imported UEEE must undergo inspection after arriving at a port of China and requires "3C certification" that the equipment is comparable to brand new EEE.[21]
- Many Parties and the HKSAR require that imported UEEE be shipped in sufficient individual protective packaging with legible labels or signs.

- providing objective criteria to determine when an item can be prepared for re-use in a safe and environmentally sound manner; and
- adopting domestic Harmonised System codes and export identification standards to differentiate UEEE from brand-new EEE.

c. Control as a waste and other import restrictions -- Some Parties (Colombia, Nicaragua, Norway[22] and Viet Nam) have decided to treat UELG as wastes. For example, in Colombia, actions to discard, re-use or deliver what is considered a waste must be controlled at all stages, even when delivered to a third party for processing or subsequent treatment. Colombia declared that "transboundary movements of used or second hand electrical and electronic equipment as well as WEEE should be subject to the control procedures of the Basel Convention, regardless of whether the exporting countries classified them as hazardous or whether [or not] they are intended for recycling or recovery operations." Colombia also advocated establishment of clear policies against the import of EEE for re-use or refurbishment, noting that if such imports are allowed, importers will be considered as producers and must comply with all obligations concerning the entry of EEE into the country.

Nicaragua favours prior consultation of environmental authorities before authorizing the export of a second-hand good, whether hazardous or non-hazardous, recognizing differences to capacity in handling, use, response and responsibility to return them to their origin. Indonesia has prohibited the import (but not export) of a list of "non-new capital goods, including refrigerators, washing machines, TV, phones, air conditioners, printed circuit, valve and thermion tube, cold cathode or photo cathode tube, etc. Importation into Indonesia of used EEE and e-waste for direct (individual) consumption by consumer is prohibited."[23] Viet Nam has reportedly banned the import of waste materials, toxic chemical substances and second-hand commodities, including electronic, cooling and home appliances, as well as the import of seven categories of second-hand electronic and communications products. The decree also prohibits the import of spare and component parts for the aforesaid products. Brazil has also prohibited the importation of "virtually all used consumer goods, including motor vehicles... [and] [t]he importation of used machinery, equipment, and cargo containers will only be granted if it is proven that the products are not produced in Brazil and cannot be substituted by a similar product currently produced in that country.[24] Brazil prohibits the importation of hazardous solid waste and solid wastes that present significant risk to health or the environment, even for treatment, reform, reuse, reuse or recovery.[25]

d. Take-back -- Schemes under which exporters take back waste and other material that is not being handled in accordance with applicable legal or contractual requirements are increasingly used as a tool to address and minimize problems associated with UELG.[26] Many of these schemes are voluntary programs undertaken by manufacturers of EEE and other equipment. In addition, some Parties (e.g., Colombia, EU, Philippines) have adopted some form of take-back measure either as part of their domestic program to control waste, or in order to minimize and control the transboundary

[21] BCCCAP Project Report, citing General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), China. December 31, 2002. Administrative Measure on Inspection and Supervision of Imported Used Mechanical and Electrical Products.

http://www.chinaccia.org.cn/zcfg/jdcp/jd-12.htm. 2009-05-27. (In Chinese)

[22] Norway would make an exception in the case of equipment returned under warranty to its producer.

[23] BCCCAP Project, citing H. Hamdani, "Indonesia Regulations and Policies on Export- Import Related Electronic Equipment. Regional Workshop on E-waste Identification toward the Prevention of Illegal Transboundary Movement for Hazardous Waste and Other Wastes in Asia."
http://www.bcrc.cn/en/meetings/File_reg2008/06-INDONESIA-presentation%20beijing%202008.pdf, 2009-05-27

[24] Response to Questionnaire, citing National Law nº 12.305 from 02/08/2010 – National Policy on Solid Waste – Article 49.

[25] Id., citing National Environmental Council (CONAMA) Resolutions Nr. 23 (December, 1996) and Nr. 235 (January 7, 1998). The legislation defines which wastes are forbidden from being imported and which are just controlled.

[26] The Basel Convention includes provisions on take-back and re-import, but these apply in case of illegal traffic (Article 9.2) or when transboundary movement of hazardous waste or other waste cannot be completed within the terms of the contract (Article 8).

movement of UELG. The EU scheme is part of its broader program of extended producer responsibility, a broad topic that is beyond the scope of this study. The Philippines has adopted "Interim guidelines for the importation of recyclable materials containing hazardous substances," which allow the import of electronic assemblies and scrap on the condition that residuals from the recycling of materials which contain hazardous substances without any acceptable method of disposal in the Philippines must be shipped back. With respect to WEEE generated internally, Colombia has issued a series of standards requiring manufacturers and importers to establish return and recovery systems. In Canada, a number of State and Provincial governments have adopted legislation that requires electronics take-back. In addition, manufacturers and distributors in these countries often have, on a voluntary basis, instituted programs where consumers can return discarded electronics. Some retail stores offer consumer electronics recycling programs, as well as locations to drop off used mobile phones, rechargeable batteries, and ink-jet cartridges.

e. Charitable donations -- Some Parties (EU, Japan) have suggested that charitable donations might be used to disguise the export of waste materials. No specific definitions of the term "charitable donations" were provided, although Brazil reports that the following supplies/ goods do not require import licenses:

> "Assets donated to hospitals, clinics and other non-profit entities for social assistance and charity, or institutions dedicated to scientific, educational or philanthropic purposes provided that the destination is intended for its own use or meet their institutional aim confirmed through its respective statutes, excluded from the ordinance vehicles such as automobiles."[27]

In addition, Colombia recommended that donation centres report the final destination and use of the units received, and that the WEEE generated by refurbishment operations at these centres should be treated and recycled properly. In Colombia's view, a donation centre becomes a producer if it introduces used EEE into the market. The recipient of the equipment should be considered as a consumer of an EEE, with the attendant obligations and responsibilities. Finally, recent guidelines issued by PACE set forth a list of principles for corporate donors of functional used computing equipment.[28]

f. Particular items -- Some Parties have developed lists of goods or categories of goods as a means of, or factor for, determining whether and how UELG are subject to regulation. For example, and as previously mentioned, Indonesia prohibits import of listed "non-new capital goods," including refrigerators, washing machines, TV, phones, air conditioners, printed circuit, valve and thermion tube, cold cathode or photo cathode tube, etc.[29] Importation of used EEE and e-waste for direct (individual) consumption by consumer is prohibited".[30]

The EU recently published a recast of its Directive on WEEE.[31] The recast Directive includes several detailed lists of categories of EEE and items within those categories. Among its requirements related to WEEE management, the recast Directive sets minimum targets for the re-use of various categories of EEE. It would also require Member States to ensure that shipments of used EEE suspected to be WEEE are carried out in accordance with detailed shipping requirements.

2. Other initiatives to address UELG

A number of initiatives have sprouted in recent years to address issues associated with the transboundary movement of UELG. These include bilateral, regional and multilateral initiatives, projects within the construct of the Basel Convention and other international forums, and several

[27] Ordinance of the Brazilian Foreign Trade Department of the Ministry of Development - DECEX (Portaria nº 370, November, 1994), Nicaragua also provided information on its regulation of the donation of medications.

[28] Appendix 10, PACE Guidance Document on the Environmentally Sound Management of Used and End-of-Life Computing Equipment" (discussed in more detail in section 2.c., below). These principles call upon donors to: provide a useful product appropriate to the conditions of the recipient country and community; ensure and verify availability of technical support; test, certify and label functionality: support the recipient with training or training programs; ensure that the recipient community consents in writing to receiving the material in accordance with contractual terms and conditions; and export in accordance with applicable national and international controls. The PACE document does not define the term "charitable donation."

[29] BCCCAP Project, citing Minister of Industry and Trade, Indonesia, Decree No. 756/MPP/KEP/12/2003 on Import of Non-new Capital Goods and Decree No. 610/MPP/Keep/10/2004 Regarding Amendment of No. 756/MPP/Kep/12/2003.

[30] Id., citing H. Hamdani, note 22, supra.

[31] Directive 2011/…/EU of the European Parliament and of The Council on waste electrical and electronic equipment (WEEE) (Recast).

public-private partnerships, operating in cooperation with Basel Convention Parties. These initiatives are described briefly below.

a. Bilateral, regional and multilateral Initiatives

(i) Asia-Pacific e-waste partnership: The Government of Japan in collaboration with the Secretariat of the Basel Convention launched the Basel Convention Partnership on the Environmentally Sound Management of E-waste for Asia-Pacific Region in November 2005. This programme focuses on enhancement of the capacity of Parties to manage e-waste in an environmentally sound way. The Partnership's strategic objectives are the:

- assessment of the current situation on e-waste;
- prevention and minimization of e-waste;
- introduction of the environmentally sound management of e-waste; and
- promotion of information and training for all sectors.

(ii) MERCOSUR: The countries of the Southern Common Market (MERCOSUR) (Brazil, Argentina, Uruguay and Paraguay) defined WEEE as a "universal generation waste," under the Agreement, "Environmental Management of Special Wastes and the Principle of Extended Producer Responsibility," which was signed during the Fourth Meeting of Ministers of Environment of MERCOSUR on 29 March 2006 and awaits approval by the Common Market Council. The MERCOSUR countries agreed to "incorporate patterns of sustainable consumption and production in order to minimize the amount and hazardousness of waste generated".

***(iii) The North American Commission for Environmental Cooperation (CEC)*:** Through the CEC, Canada and Mexico are working to enhance the capacity of small and medium-sized enterprises that refurbish and recycle UEEE to implement environmentally sound management practices, estimate the amount of transboundary movements of used computers and monitors, and cooperate in enforcement against illegal trade in UEEE.

b. Initiatives under the auspices of the Basel Convention

(i) Basel Convention "Draft technical guidelines on transboundary movements of electronic and electrical waste (e-waste), in particular regarding the distinction between waste and non-waste

The draft technical guidelines on transboundary movements of electronic and electrical waste (e-waste), in particular regarding the distinction between waste and non-waste (hereinafter draft E-Waste Guidelines), developed through the work of the Basel Convention Open-ended Working Group (OEWG) and drawing on outputs of PACE, MPPI and others, provide, for purposes relevant to this study, guidance on: the distinction between waste and non-waste when used equipment is moved across borders; the distinction between hazardous waste and non-hazardous waste; transboundary movements of used equipment and e-waste; and enforcement of the control provisions of the Convention.

The latest version of the draft E-Waste Guidelines is contained in document UNEP/CHW/OEWG.8/INF/9, not yet available at the time of the finalization of this document. The reader is invited to consider the latest version of the draft guidelines in conjunction with this study.

(ii) Basel Convention Regional Centre for Training and Technology Transfer for the Asia and the Pacific region - project on "the import/export management of e-waste and used EEE"[32]

The report on this project provides a detailed and useful review of approaches to controlling the import and export of used EEE and WEEE in 10 Asian countries, namely: Cambodia, China (including HKSAR), Indonesia, Japan, Malaysia, the Philippines, Republic of Korea, Singapore, Thailand and Viet Nam.

(iii) Basel and Stockholm Convention Regional Centre for Training and Technology Transfer in Tehran (BCRC & SCRC- Tehran)

In response to requests from organizations and companies working on waste management for consultancy and training services, the Centre has organized workshops on the transboundary movement of waste, including used tyres, WEEE, PCBs and wastes contaminated with PCBs, and

32 BCCCAP Project Report, see footnote 15

used lead acid batteries. The Centre has scheduled programmes for training and transfer of technologies on waste management within the southwest Asian region. The BCRC-Tehran offers an executive training programme on ESM of wastes from the generation to disposal, including a first regional technical workshop in January 2012. BCRC-Tehran favours a strong regulatory scheme to encourage and require ESM of waste, as well as take-back systems for recyclable waste such as e-waste and used tyres.

(iv) "E-waste Africa Project" coordinated by the Secretariat of the Basel Convention and implemented by the Basel Convention Coordinating Centre for Training and Technology Transfer for the African Region (BCCC-Nigeria), the Basel Convention Regional Centre for Training and Technology Transfer for French-speaking countries in Africa (BCRC-Senegal)

The goal of the E-waste Africa project was to enhance the capacity of West African and other African countries to tackle the growing problem of e-waste and thereby protect the health of citizens, particularly children, while providing economic opportunities. Specifically, the project improved the level of information available on flows of EEE and e-waste imported into West African countries; assessed the baseline situation in terms of amounts of EEE imports, EEE in use and e-waste in partner countries, as well as environmental impacts of the e-waste sector; produced studies on the social-economic aspects of the increasing volumes of used EEE and e-waste; and strengthened national capacities to monitor and control transboundary movements of e-waste and to prevent illegal traffic. At the Pan-African Forum on E-waste held on 14-16 March 2012 in Nairobi, Kenya, participating African States called for developing and adopting a separate legal instrument specifically supporting e-waste management at the national level and for harmonizing key elements in national legislation on a regional level including, *inter alia*, e-waste, producer, environmentally sound management and extended producer responsibility, which should be in line with definitions developed under the auspices of the Basel Convention, including the MPPI and PACE.

(v) Other BCRCs

Other BCRCs are involved in similar endeavours. For example, PC Rebuilders and Recyclers, LLC reports that it is working with the BCRC in El Salvador to create a micro-financed computer refurbishment programme that will include and support formal material recovery.

c. Public/private partnership initiatives

(i) The Partnership for Action on Computing Equipment ("PACE")

In March 2011, PACE[33] approved a "Guidance Document on the Environmentally Sound Management of Used and End-of-Life Computing Equipment" (hereinafter, the "PACE ESM Guidance").[34] Citing the Basel Ministerial Declaration on Environmentally Sound Management[35], the document begins from the premise that "used computing equipment should be diverted from disposal practices, such as landfilling and incineration, by a robust collection program, to the more environmentally sound practices of re-use, refurbishment, material recovery and recycling."[36] The objective of the document is to provide guidance for the environmentally sound management of used and end-of-life computing equipment with an emphasis on re-use and recycling. The document aims to promote development of robust material recovery and recycling infrastructure, including:

- collection of used computing equipment;
- evaluation;
- testing for functionality;
- refurbishment/re-use if appropriate;
- preparing/dismantling of non-reusable computing equipment or parts;

[33] PACE is a multi-stakeholder public-private partnership that provides a forum for 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.

[34] UNEP/CHW.10/20. Sections 1, 2, 4 and 5 of the PACE guidance document were adopted by COP Decision BC-10/20. Section 3 on transboundary movement was not adopted. The PACE working group has decided to wait for the final draft of the Basel Convention Technical Guidance on e-waste before finalizing section 3.

[35] Adopted by decision V/1 of the fifth meeting of the Conference of the Parties in 1999.

[36] PACE ESM Guidance,para. 5.2.1.3.

- separation into material streams;
- final recovery of marketable raw materials; and
- disposal of non-recyclable fractions and processing residues.

The PACE ESM Guidance aims to help ensure that computing equipment and derived materials are managed in environmentally sound management facilities that are licensed and permitted to manage these materials. The document includes recommendations on: ESM criteria, transboundary movement[37], testing, refurbishment and repair, and material recovery and recycling. These recommendations include *inter alia*:

- *country-specific recommendations* for the environmentally sound management of used computing equipment, including review of measures in place to implement obligations under the Basel Convention and other applicable instruments; taking measures to establish an appropriate infrastructure to ensure that end-of-life equipment is collected and recycled in environmentally sound facilities; and the tailoring of Environmental Management Systems to small and medium enterprises, including the provision for information and know-how sharing;
- *facility-specific recommendations*, including the adoption of measures to meet ESM criteria for material recovery and recycling of end-of-life computing equipment and application of criteria (elaborated in the guidance) to determine and demonstrate functionality of used equipment; certification of facility conformance with an accredited comprehensive environmental management system and electronics recycling standard;
- a *voluntary notification procedure* or "decision tree procedure" to ensure that such movements are being monitored, and the importing country is given an opportunity to react to such movements;
- detailed recommendations for *testing, refurbishment and repair***;** and
- recommendations on the *marketing and redeployment* of refurbished/repaired computing equipment.

The Guidance's recommendations on refurbishment are based on the earlier PACE Project 1.1 Technical Guideline on Environmentally Sound Testing, Refurbishment and Repair of Used Computing Equipment.[38] Summarized broadly, the Project 1.1Guideline: (i) sets out a list of ESM criteria that are relevant to the refurbishment or repair of used computing equipment; (ii) provides guidance for refurbishment and repair facilities to meet the ESM criteria, including on: the sorting of refurbishable and non-refurbishable equipment; data security and destruction; disassembly; functionality testing; and labelling/documentation, packaging, storage and handling of refurbished and repaired equipment. The guideline also provides guidance for the marketing, donation and redeployment of refurbished and repaired computing equipment and components.

For reference purposes, it may be noted that section 3 of the Guidance on "Transboundary movement of used and end-of-life computing equipment," which has not adopted by COP-10 but which should be taken into account in the further development of the draft E-Waste Guidelines, indicates that the following shipments are normally considered outside the scope of these procedures and the Convention unless the computing equipment being shipped is defined as or considered to be hazardous waste under paragraph 1 (b) of Article 1 of the Convention or is restricted under applicable national law such as by a prohibition on import of such used goods by the States concerned:

- collected computing equipment that has been tested and labelled or documented and declared as being fully functional[39] and intended for direct reuse[40] in accordance with appendix 7;

[37] The recommendations on transboundary movement are not yet approved. See note 36, supra.

[38] PACE Project 1.1,"Guideline On Environmentally Sound Testing, Refurbishment & Repair Of Used Computing Equipment", (17 February, 2011). As noted on the Basel Convention website, this guideline "will be evaluated in a facility type of the environment and subsequently revised taking into consideration results of these evaluations." http://archive.basel.int/industry/compartnership/index.html. (Retrieved 19 May 2012.)

[39] 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 they were designed to perform.

- shipments by individual customers of their own defective computing equipment under warranty or subject to a law allowing for a right of the return of the equipment for repair or refurbishment and where the same type or similar product is intended to be returned to the customer. This does not include equipment from take-back programmes;
- batches of defective computing equipment or components, under warranty or subject to a law allowing for a right of return of the equipment, that has been collected from individual customers or consolidated by manufacturers, original component suppliers or their contractual agents and sent back to the manufacturer, original component suppliers or their contractual agents, and for which the same type or similar products have been or will be returned to the customer;
- shipments of used computing equipment under a documented leasing programme, where such equipment is removed from service, documented and declared, using appendix 7, to be in working condition and returned to the computing equipment owner.

(ii) Mobile Phone Partnerships Initiative

The increasingly ubiquitous[41] mobile phone accounts for a small but significant portion of UELG. For the better part of a decade, the Basel Convention Mobile Phone Working Group ("MPWG"), established under the Mobile Phone Partnership Initiative (MPPI), worked to promote the environmentally sound management of end-of-life mobile phones. In its work programme, the MPWG took into consideration a number of waste management principles including:

- prevention and minimization of waste in production by implementing no-waste or low-waste technologies;
- reduction of hazardous substances in processes and products;
- reduction of waste requiring final disposal through environmentally sound re-use, recovery and recycling
- environmentally sound final disposal of wastes that cannot be recovered or recycled.[42]

The MPPI completed its work with the publication of a guidance document on the environmentally sound management of used and end-of-life mobile phones with an emphasis on re-use and recycling. The document includes guidelines produced by four MPPI projects:

- *"Refurbishment and re-use of used mobile phones,"* intended to encourage companies that refurbish used mobile phones to implement environmentally sound practices and facilitate a process whereby products re-entering the market comply with applicable technical performance standards and regulatory requirements.
- *"Collection and transboundary movement of used mobile phones,"* providing advice on programmes, legislation and regulations for effective collection of used and end-of-life mobile phones;
- *"Recovery and recycling of end-of-life mobile phones,"* addressing environmentally sound processing of mobile phones for material recovery and recycling: and
- *"Awareness-raising on design considerations and training,"* seeking to help manufacturers promote design improvements that would help ensure that end-of-life mobile phones are managed in an environmentally sound manner.[43]

Of most relevance to this study are the sections in the MPPI Guidance on transboundary movement and refurbishment of mobile phones. The recommendations of the document in this regard include:

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.

[40] Glossary of terms, appendix 1 to the guidance

[41] Global mobile phone subscriptions are estimated at 5.9 billion, as of February 2012. http://mobithinking.com/mobile-marketing-tools/latest-mobile-stats (Retrieved 16 April 2012.)

[42] MPPI, "Guidance document on the environmentally sound management of used and end-of-life mobile phones," UNEP/CHW/10/Inf27/rev.1, para. 31. The document was adopted with revisions by COP Decision BC 10/21, and is available on the Basel Convention website.

[43] Id., para. 5.

- All used mobile phones that have been collected should be evaluated/tested and labelled to determine to what extent they are suitable for re-use with or without repair, refurbishment or upgrading prior to any transboundary movement.
- Used mobile phones that have been collected but have not been evaluated and/or tested and labelled as suitable for re-use are subject to Basel Convention procedures, unless it can be demonstrated they are not hazardous using Annex I and the Annex III characteristics.
- End-of-life mobile phones destined for material recovery and recycling or final disposal are subject to Basel Convention controls if they contain Annex I constituents unless it can be demonstrated that the phone is not hazardous using the characteristics listed in Annex III. Even if neither the importing nor exporting country considers a shipment of mobile phones destined for repair or refurbishment to be waste, a voluntary notification (detailed in Appendix 4A of the Guidance or "decision tree" procedure) should apply to ensure that such movements are being monitored, and the importing country is given an opportunity to react.
- In situations where hazardous wastes are to be sent back to the original exporting country or to a third country, the contract between the exporter and importer specifies details of the return of the hazardous waste, return dates and financial responsibilities.
- Importing countries should take measures to establish an appropriate infrastructure to ensure that mobile phones which reach the end of their lives are collected and recycled in environmentally sound facilities, be those located within or outside the country.[44]

The MPPI Guidance considers the following shipments to be outside the scope of the Basel Convention:

- collected mobile phones that have been tested and labelled as being suitable for re-use without further repair or refurbishment;
- shipments by individual customers of their own mobile phones for repair or refurbishment (e.g. under warranty) and intended to be returned to them; and
- defective batches of mobile phones sent back to the producer (e.g., under warranty).[45]

The MPPI Guidance's recommendations on refurbishment of mobile phones are too numerous to repeat here, but feature the following elements:

- sorting phones that can be re-used from those that are suitable only for material recovery;
- evaluating and assessing used mobile phones to determine to what extent they are suitable for re-use with or without repair or refurbishment;
- limiting sales to mobile phones that are tested for functionality, unless it is to a properly authorized recycling vendor or outsource repair centre;
- storing and handling used mobile devices at refurbishment facilities in a manner that protects the mobile phones and reduces the potential for releases of toxic substances into the environment and for injuries to workers;
- using only benign cleaning solutions to clean used mobile phones; otherwise, refurbishers should use cleaning solutions in an environmentally sound, efficient and safe manner; and
- managing end-of-life batteries and any associated circuit boards or electronic assemblies containing lead based solders in an ESM and in accordance with the Basel Convention when destined for transboundary movement.[46]

Additional recommendations are included on:

- the management of components removed from mobile phones during the refurbishment process;

[44] Id., para. 66.

[45] Id., para. 65.

[46] Id., para. 72.

- administrative measures and personnel training;
- inspections and monitoring; and
- regulatory, operational, and import-export requirements.[47]

As with the draft E-waste Guidelines and the PACE ESM Guidelines, the MPPI document includes a similar flow chart, or "decision tree," to help guide the determination of whether a used mobile phone is a hazardous waste subject to Basel Convention controls and procedures.

(iii) "Solving the e-waste Problem Initiative" (StEP)

An initiative of various United Nations organizations with participation of industry, governments, international organizations, non-governmental organizations (NGOs) and academia, SteP aims to initiate and facilitate approaches towards the sustainable handling of e-waste. SteP has established five Task Forces charged with the development of "feasible, just and environmentally safe solutions for the e-waste problem through analysis, planning and pilot-projects."[48] Among those task forces is the Task Force on Re-use, whose goal is to define globally consistent practices, principles, and standards for EEE products that are economically, socially, and environmentally appropriate for: "a) Changing consumer behaviour to get acceptance for re-use and early product take back (avoiding long storage at consumer site); b) Extending the usage of EEE products and components; and c) Reducing the flow of irresponsible re-use between donor and development countries ('sham re-use')."[49]

d. Private sector and other members of the PACE Working Group

Elements of the private sector are major participants in PACE, MPPI and other public-private partnerships, and many private companies operate voluntary take-back and other programs associated with the re-use of UELG.

PC Rebuilders & Recyclers, LLC tests as per the PACE guidelines all equipment that is exported to assure it is refurbishable equipment. This company also has a certified third party witness the loading process so that there is no question about the veracity of the Bill of Lading (BOL).

It might be worth noting that certain large medical devices are exempted from the provisions of the EU Recast Directive. In its response to the 2012 Questionnaire, Philips Medical provided information on refurbishment of such devices. Phillips asserted that medical device refurbishment and repair is an effective means of reducing e-waste while ensuring greater global access to medical device technology. Phillips explained that its refurbishing programme relies on transboundary movement of used professional equipment to its refurbishing locations. Medical devices can have a very long service life, far exceeding the warranty period. Highly specialized or intricate repairs may require that the device be returned to the manufacturer or a regional authorized service centre in another country.

According to Philips Medical, it is critical to business to return systems to the manufacturer or authorized contractor for parts harvesting and repair, which are then used in service operations. To keep the service expenses for medical devices at affordable levels, the return of defective parts for repair is a necessity. The repair of service parts can only take place in central, specialized repair centres, requiring transboundary movements. Return of used parts also significantly expands the lifetime of installed medical devices in addition to the asset value of the equipment. Return of used equipment to the manufacturer or to a test house would be necessary after an "adverse event" in which a patient or user was harmed, in order to complete root cause analysis, meeting regulatory compliance or quality assurance monitoring of devices required by the EU Medical Device Directives.

The United States released a National Strategy that contains the federal government's plan to enhance the management of EEE throughout the product lifecycle. The Strategy contains four goals: (1) building incentives for design of greener electronics and enhanced domestic research; (2) ensuring that the U.S. federal government leads by example; (3) increasing the safe and effective management and handling of used electronics domestically; and (4) reducing harm from U.S. exports of e-waste and improving safe handling of used electronics in developing countries. The U.S. has also adopted a regulation applying notice and consent requirement to the transboundary movement of used and end-of-life cathode ray tubes.

[47] Id.

[48] Information is from SteP's website, http://www.step-initiative.org/index.php/Home.html.

[49] http://www.step-initiative.org/index.php/Reuse.html. (Retrieved 11 May 2012.)

Part IV: Relationship between Trade and the Environment as it Relates to Transboundary Movement of Used and End-of Life-Goods

The Basel Convention regulates transboundary movements of hazardous wastes. As transboundary movement is also the *sine qua non* of international trade, questions have been raised about the relationship between the Basel Convention and international trade agreements.[50] In particular, control measures that target commerce in UELG might be of potential concern from a trade perspective.

Space does not permit extensive discussion of this subject, which has been the topic of numerous papers published by the OECD, World Trade Organization ("WTO") and other international organizations, as well as numerous governments, NGOs and scholars. However, several key points may be worthy of consideration, at least from a legal perspective:

- No measure necessary to comply with an obligation contained in a widely-supported multilateral environmental agreement has ever been challenged before the WTO (or any other trade organization).
- The GATT and many other trade agreements contain an exception whereby any contracting party may adopt or enforce measures "necessary to protect human, animal or plant life or health", subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade[51].
- In the only WTO dispute involving UELG (specifically "retreaded tyres"), the WTO Appellate Body ruled that a prohibition on the importation of used tyres could be considered "necessary to protect human, animal or plant life or health"[52].
- Given that the Basel Convention, like the GATT, is also a reflection of the views of the international community, and in light of the outcome of several WTO dispute settlement proceedings, it is not clear that a trade dispute panel would presume to characterize a measure required by a widely accepted international agreement such as the Basel Convention as "unnecessary," or as "a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail," within the meaning of GATT Article XX(b), especially if both parties to the dispute were also Parties to the Basel Convention.[53]

That said, most Parties to the Basel Convention are also members of the WTO or party to bilateral or regional agreements that impose disciplines on the regulation of trade, and presumably support international trade law's policy of discouraging unnecessary trade barriers. From a legal perspective, well-targeted restrictions on the import of UELG might not be deemed to discrimination against a "like product" (e.g., a new good from another country that serves the same function)[54] in violation of "most favoured nation" clauses in the GATT and other trade agreements. However, unless supported by sound reasoning, application of measures to the transboundary movement of

[50] See, e.g., Appasamy, Paul, Madras School of Economics, Chennai, "International Conventions On Hazardous Chemicals," http://www.mse.ac.in/trade/pdf/Compendium%20Part%20B/5.%20PPA-chem-conven%282.4.07%29.pdf (Retrieved 15 March 2012.)

[51] GATT Art. XX(b). While Art. XX(b) does not explicitly mention the environment, it has been so-interpreted. See, e.g., North American Free Trade Agreement (NAFTA), 32 I.L.M. 289, 605(1993), Art. 2101 ("The Parties understand that the measures referred to in GATT Article XX(b) include environmental measures necessary to protect human, animal or plant life or health, ..."); Canada-Colombia Free Trade Agreement (2002), Article 2201(1), available at http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/colombia-colombie/can-colombia-toc-tdm-can-colombie.aspx?view=d. (Retrieved 19 May 2012.)

[52] Report of the Appellate Body, BRAZIL – MEASURES AFFECTING IMPORTS OF RETREADED TYRES AB-2007-4, para. 212. The Appellate Body also ruled, however, that the import ban was "applied in a manner that constitutes arbitrary or unjustifiable discrimination," and was therefore not eligible for the GATT Article XX(b) exemption. Id., para. 233.

[53] See, OECD Joint Committee on Trade and Environment, "Trade Measures In Multilateral Environmental Agreements: Synthesis Report Of Three Case Studies [including the Basel Convention]," COM/ENV/TD(98)127/FINAL (15 Feb. 1999).

[54] Article 1.1 of GATT 1947 provides, in part: "any advantage, favor, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties."

UELG in a manner that discriminates between countries might be viewed as "arbitrary and unjustifiable discrimination," which would defeat invocation of the GATT's environmental exception.[55] In considering the proper approach to transboundary movement of UELG, Parties may wish to take into account a number of considerations suggested by the OECD more than a decade ago:

- The use of trade measures should be carefully designed and targeted to the environmental objective;
- Potential difficulties such as illegal trade and inadequate technical and institutional capacity in some countries should be taken into account from the beginning; and
- Trade measures which treat classes of countries in different ways should clearly be based on environment-related criteria.[56]

Part V: Options for dealing with the problem posed by used and end-of-life goods

Among the "Guiding principles" of the "Strategic framework for the implementation of the Basel Convention for 2012–2021"[57] is the recognition of a "waste management hierarchy (prevention, minimization, re-use, recycling, other recovery including energy recovery, and final disposal)" that "encourage[s] treatment options that deliver the best overall environmental outcome, taking into account life-cycle thinking." The Strategic framework encourages the use of waste management policy tools, including "recognition of wastes as a resource, where appropriate." In addition, Objective 2.5 of the Strategic framework is: "To enhance and promote the sustainable use of resources by improving the management of hazardous and other wastes and to encourage the recognition of wastes as a resource, where appropriate."

Consistent with the Strategic framework, the options presented below, with the exception of Option 1, are suggested as potential means of dealing with UELG in ways that would recognize the value of re-use, while ensuring that the transboundary movement of goods destined for re-use (and perhaps certain recycling or recovery operations) is consistent with the Convention's provisions on environmentally sound management. The following options draw heavily on communications from Parties and the other initiatives described above. In keeping with the general direction of national regulation and practice, the options draw a distinction between **re-use** (including re-use following refurbishment or repair and return of defective goods to the manufacturer, as under warranty) and **recycling** or **recovery** operations, especially as many of the latter are clearly "disposal operations" identified in Annex IV B to the Convention. It is important to recall that under the first two options, the definition of waste would presumably continue to include materials that the importing or exporting Party requires to be disposed of, and each Party retains the right to classify additional materials as hazardous waste, pursuant to Article 1.1(b) of the Convention. These options are in addition to voluntary approaches based on the supposition that the material involved is not a waste.

In considering these options, it should be noted that **used goods** and **end-of-life goods** could be treated differently.[58] By definition, "end-of-life" goods are not exported with the intent of meaningful re-use, at least not for the purpose for which they were originally intended.[59] Thus, end-of-life goods would not seem suitable for re-use, and would not be addressed by Option 2, although they would presumably be covered under Options 1 and 3, and could be included in Option 4.

These options are not intended to be mutually exclusive; a combination of approaches could be considered, particularly among the options involving revision to the Convention or its Annexes, and those that would rely on the issuance of guidance or guidelines. The issuance of guidance or guidelines can provide more flexibility than amendment of the Convention or even an Annex, and may

[55] See discussion of Brazil Tyres, supra. It possible, however, that the analysis of "arbitrary or unjustifiable discrimination" would be different if (unlike the case in Brazil Tyres), the measure at issue was mandated by a widely supported international instrument such as the Basel Convention.

[56] OECD, Trade Measures in the Basel Convention and the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1998), http://www.oecd.org/dataoecd/5/55/36789048.pdf. (Retrieved 11 Apr. 2012.))

[57] Adopted by the Conference of Parties in Decision BC-10/2.

[58] The EU considers 'end-of-life goods' to be a synonym for 'waste' whereas 'used goods' may be waste or not depending on the question whether the definition of waste applies. EU comment letter (22 June 2012).

[59] For example, the PACE ESM Guidance defines "end-of-life computing equipment: as "equipment that is no longer suitable for use, and which is intended for dismantling and recovery of spare parts or is destined for material recovery and recycling or final disposal. It also includes off-specification or new computing equipment which has been sent for material recovery and recycling, or final disposal." The glossary of the MPPI Guidance defines "end-of-life" mobile phones in identical terms.

be accomplished more quickly and easily, thus potentially expediting harmonization of national approaches. However, guidance and guidelines cannot be used to achieve an informal amendment of the Convention or an Annex, and thus cannot alter any inherent ambiguities therein.

Table 1 below briefly summarizes the options, along with their "pros and cons."

Option 1: Treat UELG as waste, subject to the Basel Convention if hazardous

It should first be recalled that each Party has the right to determine that a material is a hazardous waste, so UELG already cannot be shipped to or from countries that have made that determination, except in accordance with the Basel Convention requirements, including prior notice and consent.[60] Should the Parties so decide, the Basel Convention requirements would apply (or be interpreted to apply, in the case of guidance), to all transboundary movement of UELG among Parties, and if the Ban Amendment enters into force, such shipments could not be made from Parties included in Annex VII (that have ratified the amendment) to Parties not included in Annex VII.

This approach, though not favoured by a majority of Parties and stakeholders, could most easily be adopted through guidance. If a binding measure were desired, it might be appropriate to add a category to Annex IVB regarding re-use. If implemented, this approach could reduce the problems faced by developing countries in managing UELG. At the same time, it could also deprive those countries and their citizens of equipment needed for sustainable development, and could exacerbate resource demands associated with the purchase of new equipment.

Option 2: Define used goods[61] destined for re-use, or some subset thereof, as non-waste, subject to specified conditions or criteria

As discussed in the accompanying draft report on the implementation of the Basel Convention as it relates to the interpretation of certain terminology[62], the Convention's definition of "waste" (or its predicate, "disposal") could be clarified – or amended -- to exclude used goods destined for re-use or some subset thereof. This could be limited or expanded as follows:

- used goods destined for direct re-use only;
- used goods destined for warranty repair and return to the consumer;
- particular types of used goods, such as large medical equipment;
- used goods donated by charitable organizations.[63]

Under this approach, the Convention would not apply to transboundary movement of excluded used goods. That might raise questions as to whether conditions could be attached to such movement, but it might be possible to articulate the exclusion so as to apply only to used goods that meet specified criteria,[64] both with regard to essential characteristics and to the operations for which they are destined.[65] In addition, the exclusion could be conditioned on appropriate assurances on the part of

[60] Under Article 4.1 of the Convention, hazardous waste may not be exported to Parties who have prohibited it.

[61] As noted above, this Option would not apply to "end-of-life" goods.

[62] UNEP/CHW/OEWG.8/INF/13

[63] From a technical standpoint, the potential health and environmental problems associated with charitable donations of used goods are presumably much the same as for sale of used goods, although it might stand to reason that charitable donations might be, on average, of lower quality than goods for sale. On the other hand, some Parties may wish to encourage charitable donations, or certain categories of such donations. What might be needed is not so much a definition of "charitable donation," but criteria according to which used goods would not be considered to be wastes when they are donated. Such criteria could relate to the charitable organization involved, as well as the characteristics of the goods. End-of-life goods presumably would not be eligible for this exclusion..

[64] It seems unlikely that true "end-of-life" goods could meet these criteria, particularly those pertaining to the age of the product. It is arguable that end-of-life goods, by definition, are not susceptible to meaningful re-use, at least not for the purpose for which they were originally intended. For example, PACE defines "end-of-life computing equipment": as "equipment that is no longer suitable for use, and which is intended for dismantling and recovery of spare parts or is destined for material recovery and recycling or final disposal. It also includes off-specification or new computing equipment which has been sent for material recovery and recycling, or final disposal." The MPPI glossary defines "end-of-life" mobile phones in identical terms.

[65] The United States Environmental Protection Agency (EPA) has followed a similar approach, whereby the status of used cathode ray tubes (CRTs) as hazardous waste depends upon the management practices to which they are subject. By regulation, used CRTs, which otherwise would be hazardous waste, are not regulated as such if handled domestically and if specified domestic management practices are followed. Moreover, exporters of CRTs for recycling must notify EPA and receive written consent from the receiving county. See 71 Federal Register

the exporter to "take-back" the goods if they are not in fact re-used, or perhaps if the goods include hazardous components that must be removed during refurbishment or repair operations.

Before establishing criteria, several threshold issues would need to be resolved. First, what type of future use would serve to exclude the material from status as a waste? Most Parties and stakeholders appear to support the notion that materials exported for re-use upon arrival in the importing country, without the need for refurbishment, repair or other servicing, should qualify. Industry strongly maintains that goods returned to the manufacturer for repair under warranty are not wastes. More controversial is whether goods that are in need of repair prior to re-use should qualify, and if so, what extent of repairs would be acceptable.

These categorical decisions could be informed by the criteria to which each category would be subject. Appendix 3, drawing on criteria developed by Parties or included in guidance/guidelines issued by PACE, MPPI, and the Basel Convention, indicates what some of those criteria might be.

Option 2 could be implemented through guidance, COP decision, amendment to the Convention, or amendment to Annex IV B or Annex IX. If a binding approach is desired, amendment of Annex IV B might be the most efficient. Assuming agreement that the term "waste" does not capture materials destined for re-use without the need for repair or refurbishment, the caption of Annex IV B could be modified to omit mention of goods destined for direct re-use. Or, if the caption is to be maintained, (perhaps without the modifier "direct"), a new "operation" could be added to the "R" list – e.g., any operation for used goods that does not meet specified criteria. One drawback to this approach is that it will probably be desirable to include criteria pertaining to the nature of the used goods themselves, not just the operation to which it will be subject. Similarly, if the criteria for exclusion are to include a take-back obligation, it might be argued that an amendment is required, as the Convention's take-back provisions apply only to illegal traffic (article 9.2) and transboundary movement of hazardous waste or other waste that cannot be completed within the terms of the contract (Article 8). However, it might be agreed that a good cannot be considered to be intended for re-use unless (i) all relevant criteria are met (e.g., no removal of hazardous components during repair or refurbishment operations), and (ii) the exporter is willing to make a take-back commitment. Alternatively, it might be considered that if the good is not going to be re-used, and if it is hazardous with reference to Annexes I and III, then the export can be characterized as "illegal traffic," triggering the take-back obligation in article 9.2.[66]

Option 3: Exclude UELG destined for certain recycling or other recovery operations from the definition waste, subject to specified conditions or criteria

By definition, an end-of-life good is not destined to be re-used for its original purpose. Nonetheless, such goods may still have value for other purposes: for example, as feedstocks for industrial processes, recycling operations (involving a transformation of the item and incorporation into a new product), or as a source of valuable resources. Many such operations are specifically included in Annex IV B, so this Option could require a modification to that Annex. As is the case for Option 2, criteria for the recycling/recovery operation could be specified, so that only materials destined for operations meeting those criteria (for example, criteria on preventing the exposure of human health and the environment to the hazards of the UELG) would be excluded from regulation as wastes. If this option is selected, the Parties may wish to consider developing technical guidelines to elaborate the specified criteria.

Option 4: Define UELG in accordance with national law

This Option would be to clarify under the Convention, for instance through the adoption of a decision, that the status of UELG is to be defined in accordance with national laws. This Option would confirm that Parties who wish to receive imports of UELG (or specified categories thereof) may do so, while perhaps encouraging others to define UELG (or specified categories thereof) as hazardous wastes under their national legal framework and to adopt associated import restrictions/prohibitions, subject to required notifications under Articles 3, 4(1), and 13(2). This Option would not require any amendment to the Convention, which already allows Parties to designate additional categories of hazardous waste; and which many Parties interpret to allow imports and exports of UELG for various purposes and under various conditions. Guidance may be useful in order to assist Parties in determining how to regulate imports and exports of UELG.

42928 (28 July 2006) and EPA Fact Sheet, http://www.epa.gov/wastes/hazard/recycling/electron/crt-fs06.pdf. (Retrieved 15 May 2012.)

[66] This raises the issue of whether transboundary movement of a "waste" occurs if the material is disposed of upon arrival in the importing country, even if the exporter does not intend such disposal. See discussion in accompanying report on pages 12-13.

Table 1 – Summary of UELG Options, with Pros and Cons

OPTION	Pros	Cons	Comments
1. Treat UELG as waste, subject to the Basel Convention if hazardous.	-Would provide certainty, especially if implemented through amendment of Convention or Annexes. -Desirable for Parties who wish to halt trade in UELG.	--Inconsistent with views and practices of many Parties. --Inconsistent with Strategic Framework regarding "waste as a resource."	Could be accomplished through Terminology Options 1, 2, or 4.
2. Define used goods destined for re-use, or some subset thereof, as non-waste, subject to specified conditions and/or criteria. Under this approach, the Convention would not apply to transboundary movement of excluded used goods.	-Could be tailored to specified categories, such as: -- direct re-use; -- warranty repair and return to the consumer; --particular types of used goods, such as large medical equipment; --used goods donated by charitable organizations . - Could be conditioned on appropriate assurances by the exporter to "take-back" goods that are not re-used or that include hazardous components that must be removed during refurbishment of repair operations.	--Legal issue may be raised as to whether conditions could be attached to movement of non-waste --Counter: The exclusion could be articulated so as to apply only to used goods/operations that meet specified criteria.	-Could be accomplished through Terminology Options 1 or 2. -Inclusion of "takeback" provision probably would require amendment to the Convention or Annex IV B.
3. Exclude UELG destined for certain recycling, or other recovery operations from the definition of waste, subject to specified conditions or criteria.	-Promotes use of waste as a resource.	Could be viewed as departure from longstanding application of Convention to recycling and recovery operations.	Could be accomplished through Terminology Option 1 or 2a
4. Define UELG in accordance with national law.	-Allows each Party to determine policy on imports and exports of UELG. -No requirement for amendments, although guidance might be useful.	-Parties already have this prerogative.	Similar to Option 4 in the Terminology report.

APPENDIX 1

BASEL CONVENTION

Questionnaire on options for dealing with the problem posed by used and end-of-life goods, including take-back obligations and the concept of "charitable donations"

Introduction

The Conference of the Parties to the Basel Convention, at its tenth meeting, adopted decision BC-10/3 on the Indonesian-Swiss Country-led Initiative to improve the effectiveness of the Basel Convention.

Section C of this decision requests the Secretariat, assisted by legal and technical experts as appropriate and taking into account other initiatives such as the "Partnership for Action on Computing Equipment" (PACE), to prepare a study to identify options for dealing with the problem posed by used and end-of-life goods, which could include take-back obligations and clarification of the concept of "charitable donations".

The present questionnaire aims to collect the views of such legal and technical experts within stakeholders, to provide information towards the preparation of the above-mentioned study. A separate questionnaire has been developed and circulated to collect the views of experts within Parties and signatories in this regard.

The Secretariat would be most grateful to you for completing and returning this questionnaire to: Ms. Yvonne Ewang-Sanvincenti (yvonne.ewang@unep.org) no later than **15 March 2012**.

We thank you in advance for your kind cooperation.

The Secretariat of the Basel Convention

Please complete the following information:

Stakeholder:

Date when form completed (DD/MM/YY): -- / -- / ----

Name of the person who completed the questionnaire:

Title:

Address:

Telephone no: **Fax no:**

E-mail:

For further information and clarification, please contact:

yvonne.ewang@unep.org

Secretariat of the Basel Convention

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1219 Châtelaine, Geneva

Switzerland

Tel: +41 22 917-8218

Fax: +41 22 797-3454

Options for dealing with the problem posed by used and end-of-life goods

1. Has your organization been faced with, identified or helped to identify problems posed by used and end-of-life goods, particularly transboundary movements of such goods?
☐ No ☐ Yes If yes, please specify the problem(s):

……..……..……..……..……..……..…
……..……..……..……..……..……..……
……..……..……..……..……

2. Please provide details of any measures, initiatives or other options that have been developed/implemented by your organization to address this problem, including take-back obligations:

……..……..……..……..……..……..…
……..……..……..……..……..……..……
……..……..……..……..……

3. Has your organization defined, interpreted, or contributed to the development of a definition or interpretation of "charitable donations"?
☐ No ☐ Yes
If yes, please specify and provide any related texts (in English) and clarify how such definition or interpretation is used/implemented:

……..……..……..……..……..……..…
……..……..……..……..……..……..……
……..……..……..……..……

4. Have any of the measures developed/implemented by your organization to address these problems been linked with the implementation of obligations under the Basel Convention?
☐ No ☐ Yes If yes, please provide details:

……..……..……..……..……..……..……
……..……..……..……..……..…
……..……..……..……..……..

5. Does your organization participate in or contribute to any bilateral, regional, multilateral efforts, initiatives or agreements to harmonise approach(es) for dealing with problems faced from used and end-of-life goods? ☐ No ☐ Yes
If yes, please provide details, in particular as may relate to take-back obligations and/or "charitable donations"?

……..……..……..……..……..……..……
……..……..……..……..……..……..……
……..……..……..……..……

III. Other Relevant Information

6. Is there any other information you would like to provide concerning the options for dealing with the problem posed by used and end-of-life goods or concerning clarification of the concept of "charitable donations" that could be of relevance to the preparation of the study?

……..……..……..……..……..……..…
……..……..……..……..……..……..……
……..……..……..……..……

Thank you for completing the questionnaire!

APPENDIX 2

Summary of data[i]

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Andorra*	Due to the size and the resources of the Principality of Andorra, the authorities will not be able to possess, according to reasonable criteria, the means to treat and recover all the hazardous wastes and other wastes the country generates. Therefore, and basing its exports on the principles of the Basel Convention (proximity, ecological sound management, reduction), Andorra will probably not restrict the export of wastes that it cannot treat or recover itself.		Article 3 of the Agreement between Andorra and Spain (17-10-06) concerning the transboundary movements of wastes defines which wastes are subject to the agreement. These wastes are: Wastes included in Annex II of the European Council Regulation 259/93/CEE, of 01/02/1993 amended by the Decision of the European Commission 99/816/CE, dated 24/11/1999; Wastes included in Annex III of the European Council Regulation 259/93/CEE, of 01/02/1993 amended by the Decision of the European 99/816/CE, dated 24/11/1999. Article 4 states that, on the Spanish side, all imports of waste will be realized in complete conformity with the European Union rules defined in the Regulation 259/93/CEE.	
Argentina	Lately, there have been problems associated with imported materials such as sludge treatment plant, used tires, used electrical and electronic equipment, etc. Argentina has encountered a problem differentiating between something used and waste. .	Accordingly, the national environmental agency has developed strategies to determine when something is a waste or not. In the case of electrical and electronic equipment, the government is studying the issue and will probably set a regulation that defines EEE, used EEE, and waste EEE. While the issue is complex, the rule would give some flexibility to the management sector whose activities include used EEE and their collection, transport and storage, prior to a recovery, treatment and subsequent disposal where will be waste. The national environmental agency has ruled in particular cases that the assets used are waste,	As regards EEE, in the framework of the "Program of Support for Deepening Economic Integration Process and Sustainable Development of MERCOSUR (MERCOSUR ECONORMAS)", developed by Resolution Group Common Market-GMC 41/2009, an activity carried out within the Regional Indicative Programme (RIP) 2007-2013 for cooperation of the European Union and MERCOSUR (Argentina, Brazil, Paraguay and Uruguay), Argentina has selected the	(See previous entry. Specific mechanism not identified.)

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		hazardous when they possess hazardous characteristics, except for certain materials which can be ascertained that were remanufactured for use for the same purpose for which they were designed or produced and having the same characteristics of use when they were produced. When classifying goods that have been used (electrical and electronic equipment-EEE) and disposed of, which have hazardous characteristics and intended to be imported for sale or use in the country and the national environmental agency has classified as hazardous waste. Argentina requires special consideration for the following waste(s) when subjected to transboundary movement: Those products that are made by recycling of wastes or which use recycled wastes as raw materials (e.g. carpets made by recycled rubber), require special consideration. (2009 Compendium)	Electrical Products Industry-Electrical and Electronic Used Products and Wastes Recyclers to work in the area of Good Practice for Sustainable Consumption and Production, thinking specially in the informal sector. Besides, the countries of the MERCOSUR defined EEE waste (WEEE) as an universal generation waste, under the Agreement "Environmental Management of Special Wastes and the Principle Extended Producer Responsibility", which was signed during the "Fourth Meeting of Ministers of Environment of MERCOSUR" on March 29, 2006 and awaits approval by the Common Market Council (CMC). The MERCOSUR countries agreed to "incorporate patterns of sustainable consumption and production in order to minimize the amount and hazardousness of waste generated". The universal waste regulated are included in Annex I of the Agreement mentioned, and highlight: batteries, electrical appliances electronics; lamps (mercury lamps and fluorescent tubes), used tires, cell phone, among others. The objective of the Agreement is to adopt policies and strategies to ensure proper management of waste in order to protect the health of the population and the environment.	

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Bhutan	We do not have required infrastructure and facilities for recovery. This is coupled with lack of technology and capacity in managing the hazardous wastes			
Brazil	There have been several cases of illegal transboundary movements of lead-acid automotive used batteries in Brazil.	The Brazilian Biosafety Law, Law number 11,105/2005, provides penalties for illegal transboundary movements which are enforced by competent national authorities. Violators are subjected to penalties and administrative sanctions established in the legislation. The importation of used machinery, equipment, and cargo containers will only be granted if it is proven that the products are not produced in Brazil and cannot be substituted by a similar product currently produced in Brazil. Notable exceptions to this requirement are: factory's production lines related to specific projects; and parts as well as equipment used for maintenance and repair of telecommunication and informatics goods; Non-automatic license required for imports of all used goods, with the exception of packaging material used in temporary importation or re-importation; Granting of non-automatic licenses prohibited, except for imports by the State or educational and scientific institutions. National Law nº 12.305 from 02/08/2010 – National Policy on Solid Waste – Article49. Prohibits the importation of hazardous solid waste and solid wastes that present significant risk to the environment, the public health and the animal and plant health, even for treatment, reform, reuse, reuse or recovery. National Environmental Council (CONAMA) Resolutions Nr. 23 (December, 1996) and Nr.		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		235 (January 7, 1998). The legislation defines which wastes are forbidden from being imported and which are just controlled by IBAMA.		
Bosnia	No capacity within the country for recycling, recovery or reuse of hazardous waste 2(f)			
Canada		Updating national waste law to include non-hazardous wastes and to clarify requirements for certain used electronics based on transboundary movement guidance from MPPI and PACE (ongoing). Contributing to the development of a federal e-waste strategy, which establishes ESM requirements for service providers that manage federal surplus electrical and electronic equipment. Supporting Canadian industry-driven ESM standards for recycling and refurbishing used and waste electronics. Enforcement activity related to preventing illegal transboundary movement of hazardous wastes, including e-waste.	Work under the Basel Convention, specifically related to the activities of the former MPPI, current PACE, and this inter-sessional working group on e-waste. Work under NAFTA CEC to gather information, promote ESM, and share intelligence on enforcement issues pertaining to the management of e-waste and other hazardous wastes	
Cambodia		The importation of the household waste and hazardous waste from abroad to the Kingdom of Cambodia shall be strictly prohibited.[ii] .	Work under the Basel Convention, specifically related to the activities of the former MPPI, current PACE, and this inter-sessional working group on e-waste. Work under NAFTA CEC to gather information, promote ESM, and share intelligence on enforcement issues pertaining to the management of e-waste and other hazardous wastes	

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Chad	In the case of management of PCBs and PCB transformers, we are supported by the GEF and the Centre of Dakar of the Basel Convention for the francophone countries of Africa. Chad has no legislation governing the collection and transport for hazardous waste (PCBs).	Remedies under consideration.		
CAR	Insalubrité, incapacités (financière, matérielle et institutionnelle de gestion de ces différents produits en fin de vie), pollution (du sol, de l'eau, de l'air….).	Le Code d'hygiène et le Code de l'Environnement et leurs Décrets d'application ont de difficultés d'application à cause de personnel qualifié insuffisant, néanmoins certaines terminologies évoquées dans le présent questionnaire n'ont pas été pris en compte.		
China[iii]		The export of hazardous waste for recovery must comply with the notice and consent requirements of the Basel Convention (No. 47 ORDER of SEPA). Furthermore, each shipment of hazardous waste should be accompanied by a movement document from the point at which the movement begins to the point of recovery. Import of solid waste which cannot be used as a raw material or in an ESM is prohibited.[iv]In China, all imported UEEE requires 3C certification (which indicates that is comparable to brand new EEE). In addition the UEEE which are of higher value and environmental risk requires pre-inspection before shipping. Criteria for pre-inspection include the following: (i) Examine whether the goods are approved by the Chinese government; (ii) Examine whether the number, specification, and quality of condition are the same as those listed in contract; (iii) Assessment of security, sanitation and environment requirements. All UEEE require inspection after arriving at the	None	

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		port of China. Criteria for inspection after arriving China include the following: (i) Opening-box inspection: Examine name, brand, specification, number, quality and packaging conditions; (ii) Security inspection: Comply with compulsion standard related to EEE; (iii) Environmental inspection: Comply with compulsion requirement related to environmental protection		
Colombia (entry is based on an informal translation from the Spanish communication .)	Customs authorities have identified imports of used electrical and electronic equipment (e.g. cell) where the object of import was not clear, and was not easy to establish the useful life of the product. Nor was it clear whether devices that no longer have functionality (waste) are imported along with used equipment. Problems are expected with the control of the import of goods used or retrofitted from 2012, with the entry into force of the new free trade agreements. Also exported are parts or pieces recovered from electrical and electronic equipment (e.g., printed circuit boards) and different types of scrap metal, without knowing the fate of the same. These parts or equipment are not classified as "waste" in the customs tariff; much less as hazardous waste.	- Colombian regulations provide specific rules for liquid discharges and atmospheric emissions. Associated actions to discard, refuse or deliver what is considered a waste must be controlled at all stages, even when delivered to a third party for a process or subsequent treatment. -- Recommends Establish clear policies against the importation of EEE for the reuse or refurbishment. If allowed, importers must comply with all the obligations applicable to producers arising from this condition with respect to the EEE that entered the country. -- However it has issued rules relating to control transboundary movements of WEEE (hazardous and non hazardous) or used equipment. The only tool you have is now the Basel Convention but it is difficult to apply because many countries do not consider WEEE to be hazardous waste or do not control its movement. It is considered that transboundary movements of electrical and electronic equipment used or second hand and WEEE should be subject to the control procedures of the Basel Convention, regardless of whether the countries classified as hazardous or not and are intended for recycling	Colombia participated during the year 2011 with other countries in the region, in the elaboration of the so-called non-binding document "guidelines for the management of waste from electrical and electronic equipment (WEEE) in Latin America: results of a regional public-private working group". The guidelines were developed within the framework of the RELAC platform with the support of the International Development Research Center, IDRC. WEEE require specific handling differentiated Solid Waste (MSW) and hazardous waste, the waste identified as special management because of its potential use and recovery of toxic compounds contain at a minimum rate, and its accelerated growth determined by the rapid replacement technology. The concept of WEEE is based on the idea of abandonment or disposal by its holder. It is established that the characteristics that make that an EEE is regarded as WEEE, in order of priority, are as follows: when you can not be used for the purpose it was created, for	With respect to WEEE generated internally, the Ministry of Environment has issued a series of standards related to used computers, light bulbs and batteries, under the principle of Extended Producer Responsibility, imposing on producers (manufacturers and importers) obligations to establish return and recovery systems . Latin Am Guidance: Facing the Extended Producer Responsibility: It is recommended that the governments of the region incorporated into national policy frameworks the principle of the SPR, to be applied in the management of WEEE generated within its territory.

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		or recovery operations. Latin Am Guidance: WEEE require a specific management of urban solid waste (RSU) and hazardous waste, to be identified as a waste of special handling, because of their potential for development and recovery, to contain toxic compounds in a minimum proportion, and by its rapid growth determined by the rapid technological replacement. Suggests implementation of a system of management of WEEE, especially the following: product life cycle (from design through his recovery and disposal); stages of WEEE management (collection, transport , storage, disassembly, refurbishment, recycling and disposal), design and implementation and in some cases, administration and monitoring of the system, administrative tools, economic and informative. Establish clear policies against the import of EEE for reuse or refurbishment. If such imports are allowed, importers will be considered as producers and must comply with all obligations concerning the entry of EEE into the country. It is recommended to maintain the definition of "hazardous waste" based on hazard characteristics that are inherent to the residue. Likewise, it is suggested to submit to the control system of notification of the Basel Convention means equipment used or second hand and WEEE.	replacement technological obsolescence or, when the holder makes the decision discarding it or leave it. Is set to consider WEEE as waste, not merely that the management post-consumer oriented treatment promotes their ability to benefit and recovery as raw materials or production inputs. Facing the Extended Producer Responsibility: It is recommended that the governments of the region incorporated into national policy frameworks the principle of the SPR, to be applied in the management of WEEE generated within its territory. It is suggested that the implementation of a system of management of WEEE are considered, especially the following: product life cycle (from design through his recovery and disposal); stages of WEEE management (collection, transport, storage, disassembly, refurbishment, recycling and disposal), design and implementation and in some cases, administration and monitoring of the system, administrative tools, economic and informative.	
Costa Rica			Central American Agreement on the Transboundary Movement of Hazardous wastes	

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
EU	In the case of waste shipments, enforcement and control authorities often face problems to distinguish between waste (end-of-life goods) and non-waste (e.g. used goods), for example regarding electrical and electronic waste and under the cloak of being charity donations. Enforcement and control authorities should have easy and fast-to -use criteria or means to differentiate between waste and non-waste.	Enforcement and control authorities should have easy and fast-to -use criteria or means to differentiate between waste and non-waste. EU directives now require Member States to introduce legislation on waste collection, reuse, recycling and disposal of these waste streams. Several EU countries are already managing to recycle over 50% of packaging waste. http://ec.europa.eu/environment/waste/index.htm (accessed 6 Apr. 2012) Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 SUMMARY --establishes a legal framework for the treatment of waste Waste hierarchy in order of priority: - prevention *; - preparing for reuse; - recycling *; - other recovery *, notably - energy recovery; - disposal. -- repeals directives 75/439/EEC, 91/689/EEC and 2006/12/EC. Recovery: any operation the principal result of which is waste serving a useful purpose. Recycling: any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. The Waste Shipment Correspondents of the EU Member States have agreed on a number of non-legally binding guidelines addressing these issues by clarifying the distinction between waste and non-waste for the specific waste streams of WEEE and waste vehicles (ELVs).[v]	The EU and its Member States support the efforts of IMPEL-TFS aiming to promote the exchange of knowledge, best practices and experience with the enforcement of Regulation (EC) No 1013/2006 on shipments of waste. We also take part in the work of the OECD. Experiences gained by the inspection campaigns organized by the EUROPOL (Project AUGIAS) and the World Customs Organization (Operation DEMETER) are also beneficial. On the level of the Basel Convention, the EU and its Member States support the development of technical guidelines on transboundary movements of e-waste, in particular regarding the distinction between waste and non-waste. On export of items being part of charitable donations there is no specific EU initiatives or legislation.	The Basel Convention and implementing EU legislation (Regulation (EC) no 1013/2006) explicitly provide that take-back obligations apply specifically to waste. 2008/98:Art. 8 – EPR 1. In order to strengthen the re-use and the prevention, recycling and other recovery of waste, Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility.

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		Elements of the Correspondents' guidelines on WEEE will become legally binding as part of EU legislation in the recast of the new WEEE Directive, whereby the burden of proof on functionality of used equipment is incumbent upon exporters of waste.		
		Le Code d'hygiène et le Code de l'Environnement et leurs Décrets d'application ont de difficultés d'application à cause de personnel qualifié insuffisant, néanmoins certaines terminologies évoquées dans le présent questionnaire n'ont pas été pris en compte		
HKSAR		Hong Kong has developed a list of criteria to distinguish waste EEE from second-hand EEE. These criteria are summarized in Annex I to the accompanying Report. In addition to the Basel Convention requirements, the export of any waste for a purpose other than re-use, recovery, reprocessing or recycling (e.g. for final disposal including landfilling and incineration) of the waste is subject to control by the same procedure as that of the control of export of hazardous waste. (SBC Compilation (2009) 3(c),(f) Under the WDO, contaminated wastes are also controlled as hazardous wastes. For the purpose of control on import and export of wastes, a waste is "contaminated" if it is contaminated by a substance to an extent which significantly increases the risk of human health, property or the environment associated with the waste; or - Prevents the reprocessing, recycling, recovery or re-use of the waste in an ESM.[vi]		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Indonesia		The non-new capital goods listed in its annex are prohibited for import in Indonesia, including refrigerators, washing machines, TV, phones, air conditioners, printed circuit, valve and thermion tube, cold cathode or photo cathode tube, etc.[vii] Importation of used EEE and e-waste for direct (individual) consumption by consumer is prohibited.[viii]		
Japan	Some wastes disguised as the second-hands item have been illegally exported in the past and intercepted by the destined country. One of the reasons was the difference on the definition and regulation on the second-hands goods.	Japan started to use domestic HS codes to differentiate UEEE from brand-new EEE. In addition, Japan developed the identification standards for export of second-hand CRT TVs (2009).	As reference, Japan has various kinds of international cooperation with other countries. One of the international cooperations is technical cooperation projects, including human resource development, provisions of machineries, equipments and materials for the development of recipient countries under the framework of economic cooperation.	
Lithuania	The most common problem in this regard is transboundary shipment of end-of-life vehicles. There have been many cases when it is not clear whether certain vehicles should be treated as used vehicles or end-of-life vehicles and such lack of clarity causes problems with the procedure of transboundary waste shipment.	An act of law is currently being prepared in accordance with the guidelines of EU correspondents on distinction between waste vehicles and used vehicles.		
Malaysia	Illegal import and export of end of life CRTs and Computer Monitors.	In Malaysia,. The criteria for UEEE are as follows: - the date of manufacture should not be more than 3 years (for the purpose of importation); - still functioning and have certificate of inspection from competent authority or testing body and destined for direct re-use, and not for recycling or recovery or final disposal; - no physical damage that impairs its function		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Mexico*		Mexico restricts the import of hazardous wastes and other wastes for recovery. Import of hazardous waste will be only allowed with the purpose of reusing or recycle hazardous wastes, and in no case may import be authorized of hazardous wastes that are or are constituted by persistent organic compounds.[ix]The Secretariat will be able to impose limitations to the import of remainders when disincentive or constitutes an obstacle for the reusability or recycling of the remainders generated in national territory." Also, in accordance with Article 50 of the LGPGIR determines that the following activities of hazardous wastes handling requires authorization of the Secretariat: I. The benefit of services of handling of hazardous wastes, II. The use of hazardous wastes in productive processes, in accordance with the arranged thing in Article 63 of the Law, III.… . IV. The accomplishment of anyone of the activities related to the handling of originating hazardous wastes of third part.		
Morocco	Divergence between the national classification of certain wastes with certain importing countries (in Europe). Certain end-of-life products are considered as dangerous wastes and are therefore subject tona notification, while the country of import considers it a raw material.		None	
Montenegro		Follows instructions from BC and EU Regulation as well as national conditions. MNE restricted import of used goods only for direct re use while import of end-of-life goods is practice impossible because in MNE there are no recycling facilities		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Nicaragua	No data are available, but too much equipment, products and materials is being imported. Companies or importers tend to disappear and, and the materials are illegally disposed of in landfills.	Regulations being contemplated for several sectors. Nicaragua believes that all countries' Environmental Authorities must ensure prior consultation with their counterparts before authorizing the export of a second-hand good, whether hazardous or non-hazardous, given the ability of handling, use, response and responsibility to return them to their origin.	Central American Regional Agreement to Ban Import of Hazardous Waste, signed by the Presidents of Central America in 1992.	
Norway		Norway considers used equipment destined for repair or refurbishment, except for the situation in paragraph 27 letter b, to be waste and hence procedures for transboundary movement of waste shall apply.		
Philippines		Philippines "Interim guidelines for the importation of recyclable materials containing hazardous substances" allow the import of electronic assemblies and scrap on the condition that residuals from recycling of materials which contain hazardous substances without any acceptable method of disposal in the Philippines must be shipped back.[x] . Used goods such as mobile phones under warranty intended for repair returned back to the consumers are allowed for importation and not subject to the Basel Convention. However, those intended for disassembly and major repair or refurbishment shall be required to undergo the notification process.		See "measures"
Serbia		Principle of waste management hierarchy Waste management hierarchy means the hierarchy of waste management priorities: - waste prevention, the reduction of resource consumption and the reduction of quantities and/or hazardous characteristics of the waste created; - reuse of the same product for the original or other purpose; - recycling, that is treatment of waste for the		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		purpose of obtaining raw materials for the production of the original or other product; - Recovery, that is the use of waste value (composting, incineration with energy recovery, etc.); - Disposal of waste through depositing or incineration without energy recovery, if there is no other appropriate solution. [2009]		
Singapore		Import/export of UEEE are allowed if there are documents to support appliances are in working condition and suitable for reuse. Export of UEEE that are not suitable for re-use are prohibited. Import of UEEE for the purpose of dismantling and re-export of the dismantled components are prohibited.[xi]		
South Africa*		South Africa would only import hazardous waste for recovery if the importing company could provide proof that they had a technology which would recover the waste in an ESM which is protective of human health and that the technology meets the permit/licensing requirements of the country. (3(f))Should a South African company wish to export waste to another country for recovery, the exporting company would need to explain why the waste cannot be recovered in South Africa. In addition the Department would require a copy of the environmental permits required for the technology being used to recover the waste in the country of import as well as a copy of the recovery companies ISO 14001 which would demonstrate that they are able to manage the waste in an ESM.		
Thailand		Import of UEEE in Thailand is allowed only for activities of reuse, repair/ refurnish as its original purposes, disassembly and recycle/ recovery with different conditions from Parties. Items of UEEE require import permits from Ministry of Industry.[xii]		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Togo			Notifications et consentement sur certains déchets (huiles usées 1717 m3 and batteries uses 34,480 tonnes) et sur les opérations de recyclage. (w/Ghana)	
Venezuala*		Insofar as materials with hazardous characteristics that, after serving a specific purpose, still have useful physical and chemical characteristics and can therefore be recovered, reused, recycled, regenerated or otherwise used to good effect for that same or another purpose, they are considered by Venezuela's domestic legislation (Decree 2635, article 3), as recoverable hazardous material and are exempt from the Constitutional ban on imports if and only if the country has environmentally safe technology available to recover it. 3(f)		
Vietnam[xiii]		In January 2006, Vietnam promulgated Implementation Rules for the Law on Trade (No.12/2006/ND CP) and ban import of waste materials, toxic chemical substances and second-hand commodities, including electronic, cooling and home appliances [15]. In 2006, the Vietnamese Ministry of Post and Telecommunications issued a decree, banning the import of seven categories of second-hand hand electronic and communications products, including computers, CD duplicators and copiers, data processors, calculators, ticket issuing equipments, automatic data processing devices and other intelligence devices, transmitting devices for wireless telephones, telegrams and audiovisuals, cameras and voice recorders. The decree also prohibits the import of spare and component parts for the aforesaid products.		

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
Yemen	In 2010 is set to expired goods were returned to the Country of Origin.			Pesticides were exported expired during the years 1996, 2002, 2004 to dispose of expired pesticides, with the use of procedures of the Basel Convention on transboundary movement, have been exported expired pesticides to Britain for disposal.
Zambia	"Imports of second hand goods into the country that seem not to be functional or of poor quality."	"We are in the process of enacting the extended producer responsibility regulations"	African Institute framework".	
United States	While accurate data on the amount of e-waste exported from the United States are not available, the U.S. government is concerned that these exports may be mismanaged abroad, causing serious public health and environmental hazards and representing a lost opportunity to recover valuable resources.	The National Strategy for Electronics Stewardship report details the federal government's plan to enhance the management of electronics throughout the product lifecycle — from the design to the eventual recycling or disposal. The Task Force recognized that global markets play an important role in reuse, remanufacturing, and recycling of UEEE, creating environmental, economic, and social benefits, including bridging the digital divide by providing access to information technology products to people who would otherwise be unable to afford them. The proximity to markets where electronics are manufactured and where raw materials are available affects where recycling and other processing of UEEE takes place, as do available technologies, environmental standards, and labor rates. For example, there is high demand in Asia for used electronic components for remanufacturing electronics. The Task Force, however, had serious concerns about unsafe handling of UEEE, especially discarded electronics or e-waste, in some countries that result in harm to	Not any specific but we are members of the OEWG, PACE, working in the North American region through the Commission for Environmental Cooperation (CEC) to enhance the capacity of SMEs that refurbish and recycle UEEE to implement environmentally sound management practices, estimate the amount of transboundary movements of used computers and monitors within and from North America, and undertake enforcement cooperation regarding illegal trade in used electronics.	.At the State level, a number of U.S. States have adopted legislation that requires electronics take-back. Furthermore, the U.S. government is working with a diverse group of stakeholders, including state governments, industry and the public, to develop solutions to the problem of used electronics. In addition, NGOs are also very much involved in promoting environmentally sound management of electronics, including raising awareness of the harm caused by unsafe management and providing technical

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
		human health and the environment. The Task Force set forth recommendations, now being implemented, to reduce harm from U.S. exports of e-waste and improve safe handling of used electronics domestically and internationally. On the Federal level, we have adopted a regulation that governs the transboundary movement of used and end-of-life cathode ray tubes		assistance. Many manufacturers of electronics as well as electronics retail chains have joined the charge to find innovative ways of ensuring the safe management of discarded electronics. The manufacturers often have programs where consumers can ship back discarded electronics. Some retail stores offer consumer electronics recycling programs their stores, as well as locations to drop off old cell phones, rechargeable batteries, and ink-jet cartridges. Many U.S. companies have also instituted take-back programs.
PC Rebuilders and Recyclers	Differentiation between used goods that are refurbishable in the receiving country verses equipment that is just being sent for material recovery. I suspect that is a fine line.	We test as per the PACE guidelines all equipment that is exported to assure it is refurbishable equipment. We also have a certified third party witness the loading process so that there is no question about the veracity of the Bill of Lading (BOL).		We are working with the BCRC in El Salvador to create a micro financed computer refurbishment program that will include and support formal material recovery. Take-back obligations are impractical and have a higher negative environmental impact. The greater negative impact is due to the large take back system

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
				that would be required to create. In addition any take back program would have to be operational for a very long time.
IPMI	Reuse, repair, refurbishment and upgrading of used mobile phones are not operations specified in Annex IVA or IVB. Ltr of 25 Feb 2008, commenting on MPPI Chairman's paper Project 2.1			
ITI		On behalf of our member companies, ITI has worked to develop practical approaches to the collection and ESM of UELG in a variety of venues, including PACE, the Basel COP, the multi-stakeholder group convened by the U.S. Environmental Protection Agency to develop the Responsible Recycling (R2) Guidelines. Where appropriate, ITI advocates legislation in the U.S. and elsewhere aimed at promoting practical improvements to the collection and management of e-waste, including additional restrictions on the export of e-wastes that qualify as hazardous from developed to developing (non-OECD) countries. Various ITI member companies have supported other international initiatives aimed at improving the collection and environmentally sound management of e-waste, such as the recent Regional Forum on E-waste in Africa, work under the Mobile Phone Partnership Initiative (MPPI) and StEP.		Member companies have long standing voluntary take-back programs that encourage the return of used equipment to manufacturers for proper disposition.
Philips	Transboundary shipments of used products regularly meet with administrative/bureaucratic hurdles which impede our desire to create closed loop material streams such as the recovery of	Philips Healthcare has B2B product take back programs where legislated. Our focus is on refurbishing used product whenever possible and harvesting parts to promote recycling and extend the product lifetime of the installed products. If refurbishing or part harvesting is not feasible,	Philips participates in lobbying proposed legislation regarding take back obligations directly and through industrial groups. Philips also participates in standards development such as IEC that relate to aspects of the	Used medical devices are refurbished by Philips using the highest possible international standards and sold under full warranty equal to

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
	rare earth from fluorescent lamps, refurbishment of medical equipment, and parts harvesting of professional products.	used products are properly recycling. The Philips EcoDesign program promotes improved design for recycling.	take back obligation such as standardizing product information made available to recyclers.	new. Philips refurbishing program provides reliable and cost effective refurbished medical devices, allowing more patient access to up-to-date technology. This program relies on transboundary movement of used professional equipment to Philips' refurbishing locations. Defining used professional electronic equipment destined for refurbishing or repairs as "e-waste" will stop legitimate transboundary movement of this equipment, prematurely diverting valuable equipment to waste recycling channels. Medical devices can have a very long service life, to well in excess of ten years and, therefore, far exceeding the warranty period. Highly specialized or intricate repairs may require that the device be returned to the manufacturer or a regional authorized service center in another country. Also, it is critical to business to return

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
				systems to the manufacturer or authorized contractor for parts harvesting and repair, which are then used in service operations. To keep the service expenses for medical devices to affordable levels, the return of defective parts for repair is a necessity. The repair of service parts can only take place in central, specialized repair centers, requiring transboundary movements. Used parts must move cross boarder for repair or reuse. Additionally, we strive to reuse parts and components to implement our cradle-to-cradle ambitions, thereby increasing global collection of used parts and components and managing them at the highest residual value in centralized repair and remanufacturing centers. Return of used parts also significantly expands the lifetime of installed medical devices in addition to the asset value of the equipment.

	Identification of Problem Posed By Used and End-of-life Goods	Measures to Address the Problem	Bilateral, etc. initiatives	Take-back
				Medical device refurbishment and repair is an effective means of reducing e-waste while ensuring greater global access to medical device technology. Return of used equipment to the manufacturer or to a test house would be necessary after an "adverse event" in which a patient or user was harmed to complete root cause analysis, meeting regulatory compliance or quality assurance monitoring of devices required by the EU Medical Device Directives. At the moment, the Basel convention seems to be drafted from the assumption that any transboundary shipment of waste is intended to avoid/reduce environmental responsibilities while our intention is the opposite.

APPENDIX 3

Potential criteria for exclusion from regulation as a hazardous waste

1. Recognize exclusion for warranty repair work.
    - Protective packaging for shipping and handling, consistent with that provided for new products
    - Documentation of warranty contract and intent to return to customer
    - Limitation on warranty period
    - ESM certification of warranty repair facility
    - Provision for take-back of any hazardous components removed from item

2. Recognize exclusion for direct re-use
    - Protective packaging[67] for shipping and handling
    - Legible labeling and signage
    - Full functionality[68] (perhaps comparable to new) and conformance with applicable technical, performance and safety specifications
    - Documentation of:
        - functionality (perhaps comparable to new)
        - applicable technical, performance and safety specifications
        - age, quality, and condition of good
            - maximum age specifications (e.g., 3-5 years for used computing equipment)
            - limitations on wear, damage, defects
        - marketability
        - intended destination or distribution chain
        - legal status in countries of export, import and transit
    - Use only for original purpose
    - Could allow minor repairs/refurbishment
    - Prohibition counterfeit products
    - Could prohibit specified items
    - Assurance of take-back for items not directly reused

3. Recognize exclusion for re-use (subject to repair/refurbishment)
    - Protective packaging for shipping and handling
    - Legible labeling and signage
    - Full functionality (perhaps comparable to new) and conformance with applicable technical, performance and safety specifications
    - Documentation of:
        - functionality (taking into account intended repair/refurbishment operation)
        - applicable technical, performance and safety specifications
        - age, quality, and condition of good
        - maximum age specifications (e.g., 3-5 years for used computing equipment)
        - minimum remaining useful life
        - limitations on wear, damage, defects
        - marketability
        - intended destination or distribution chain
        - contracts for repair/refurbishment and intended distribution chain
        - description of intended repairs/refurbishment
        - legal status in countries of export, import and transit
    - Use only for original purpose (?)
    - Limitation on extent or nature of repairs/refurbishment; e.g., could prohibit major reassembly, etc.
    - Environmental considerations
        - environmental assessment of repair/refurbishment operation
        - comparison of environmental impact to use of primary products
        - ESM certification of repair/refurbishment facility
    - Could prohibit specified items, categories, or operations
    - Provision for take-back of hazardous components and items not reused

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[67] See PACE ESM Guidance, Appendix III for more detail.

[68] See, e.g.European Union, Malaysia, PACE ESM Guidelines, Appendix V (functionality tests for computing equipment).

- Prohibit counterfeit products

4. Recognize exclusion for certain recycling/recovery operations

Recognize exclusion for re-use (subject to repair/refurbishment)

- Packaging to prevent release of hazardous materials to the environment
- Documentation of:
    - suitability for intended purpose and recycling/recovery operation
    - legal status in countries of export, import and transit
    - contracts for recycling/recovery operations
    - legal status in countries of export, import and transit
    - commercial demand for material (material must have positive value)
- Could limit to “closed loop” processing within a single industrial organization
- Environmental considerations
    - environmental assessment of recycling/recovery operation and of any waste generated thereby
    - ESM certification of repair/refurbishment facility
    - comparison of environmental impact to use of raw materials

APPENDIX 4

References

Unless otherwise indicated, entries refer to both the draft terminology report and the study on UELG. References from the terminology report only denoted by asterisk (*); references from UELG study only are denoted by a double asterisk (**).

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2. Canada
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10. Malaysia
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12. Morocco
13. Nicaragua
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[i] Unless otherwise indicated, source material for this Matrix consists of the responses to the 2012 Questionnaire. A single asterisk (*) denotes information obtained from the SBC compilation of responses to the 2009

Questionnaire (hereinafter, "2009 Compilation"), http://www.basel.int/Countries/NationalReporting/StatusCompilations/CompilationPartI2009/tabid/2561/Default.aspx. A double asterisk (**) denotes information obtained from the SBC compilation of responses to the 2008 Questionnaire (hereinafter, "2008 Compilation"), http://www.basel.int/Countries/NationalReporting/StatusCompilations/CompilationPartI2008/tabid/2561/Default.aspx. Responses have been edited for brevity, and informally translated into English, where necessary. The Matrix does not include responses on clarification of the concept of charitable contributions, as only [two] were received: The Central African Republic stated: "Les dons charitables consistent à assister gratuitement les personnes ou groupe de personnes vulnérables." Nicaragua reported that it has established regulations and conditions on the donation of medicines. In addition, Phillips Health Care advised that "charitable donations are well defined at Philips and must be processed via an internal legal process. Typically, new not used equipment is considered for charitable donation."

[ii] Report of the Project on "the Import/Export Management of E-waste and Used EEE" June 30, 2009 Basel Convention Coordinating Center for Asia and the Pacific (Asia-Pacific Regional Centre for Hazardous Waste Management Training and Technology Transfer, (hereinafter, BCCAP Project Report), citing Kingdom of Cambodia, April 27, 1999. Sub-decree on solid waste management, http://www.camnet.com.kh/moe/sub-decree_SWM_English.htm.

[iii] BCCCAP Project Report

[iv] Law of the People's Republic of China on Prevention of Environmental Pollution Caused by Solid Waste, effective on April 1st, 2005, Wastes listed in the " Catalogue of Automatic-Licensing Import Solid Wastes that Can Be Used as Raw Materials in China" and the " Catalogue of Restricted Import Solid Wastes that Can Be Used as Raw Materials in China" are permitted to be imported(Annex-2). Solid wastes which are not included in either of the above two Catalogues are forbidden to be imported.

[v] See http://ec.europa.eu/environment/waste/shipments/guidance.htm.

[vi] SBC Compilation, citing Seventh Schedule of theWaste Disposal Ordinance (WDO), the Laws of Hong Kong Chapter 354.

[vii] BCCCAP Project Report, citing Minister of Industry and Trade, Indonesia, Decree No. 756/MPP/Kep/12/2003 on Import of Non-new Capital Goods and Decree No. 610/MPP/Kep/10/2004 Regarding Amendment of No. 756/MPP/Kep/12/2003. 2009-05-27.

[viii] BCCCAP Project, citing H. Hamdani, "Indonesia Regulations and Policies on Export- Import Related Electronic Equipments. Regional Workshop on E-waste Identification toward the Prevention of Illegal Transboundary Movement for Hazardous Waste and Other Wastes in Asia." http://www.bcrc.cn/en/meetings/File_reg2008/06-INDONESIA -presentation%20beijing%202008.pdf, 2009-05-27

[ix] Fraction X, of the General Law of Prevention and Integral Management of Wastes (LGPGIR)

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[xii] BCCAP Project Report, citing Patarapol Tularak. Current Status of the Activities for Distinguishing New EEE, Second-Hand and Waste in Thailand. Regional Workshop on E-waste Identification toward the Prevention of Illegal Transboundary Movement for Hazardous Waste and Other Wastes in Asia. http://www.bcrc.cn/en/meetings/File_reg2008/10-Thailand-FP-Baselactivity-Nov 2008.pdf. 2008-12-23.

[xiii] BCCCAP Project Report.