



# **PARTNERSHIP FOR ACTION ON COMPUTING EQUIPMENT (PACE)**

## **Glossary of Terms**

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## Glossary of Terms

**Note:** *These terms were developed for the purpose of the report on ESM criteria recommendations, individual project guidelines, and overall Guidance Document developed under PACE, and should not be considered as being legally binding, or that these terms have been agreed to internationally. Their purpose is to assist readers to better understand these PACE documents.*

**Assemblies:** Multiple electronic components assembled in a device that is in itself used as a **component**.

**Basel Convention:** United Nations Environment Programme's (UNEP's) March 22, 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, which came into force in 1992.

**Cleaning:** Removal of dirt, dust, and stains; and making cosmetic repairs.

**Component:** Element with electrical or electronic functionality connected together with other components, usually by soldering to a printed circuit board, to create an electronic circuit with a particular function (for example an amplifier, radio receiver, or oscillator).

**Computing Equipment:** Computing equipment includes: personal computers (PCs) and associated displays, printers and peripherals, personal desk top computers, including the central processing unit and all other parts contained in the computer; personal notebooks and laptop computers, including the docking station, central processing unit and all other parts contained in the computer; computer monitors, including the following types of computer monitors: (a) cathode ray tube (b) liquid crystal display (c) plasma; computer keyboard, mouse, and cables; computer printer: (a) including the following types of computer printer: (i) dot matrix; (ii) ink jet; (iii) laser; (iv) thermal; and (b) including any computer printers with scanning or facsimile capabilities, or both.

**Defective/Defect:** Defective **Computing Equipment** is equipment that is delivered from the supply chain and last manufacturer in a condition that is not as it was designed to be sold, or the equipment breaks or malfunctions due to a condition that is not as it was designed. Defective equipment does not include equipment that loses functional or cosmetic value as a result of normal wear and usage or as a result of consumer negligence.

**Direct reuse:** Continued use of **computing equipment** and **components** by another person without the necessity of **repair**, **refurbishment**, or hardware **upgrading**, provided that such continued use is for the intended purpose of **computing equipment** and **components**.

**Dismantling:** Taking apart **computing equipment**, **components**, or **assemblies** in order to separate materials and/or increase options for **reuse**, **refurbishment**, or **recycling**, and to maximize recovery value.

**Disposal:** Any operations specified in Annex IV of the Basel Convention (Article 2, paragraph 4 of the Basel Convention, and Appendix 1 in this document).

**Donation:** Comprises any action to transfer **computing equipment** or its **components that are still fully functioning for its intended use**, for charity to another owner without any monetary rewards, or benefits, or barter.

**End-of-life computing equipment:** Individual **Computing 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.

**End-of-Use: Computing equipment** that is no longer used as intended by the previous owner, but may be fully functional and used appropriately by others.

**Environmentally sound management (ESM):** Taking all practicable steps to ensure that used and/or end-of-life products or wastes are managed in a manner which will protect human health and the environment.

**Evaluation:** The initial process by which used **computing equipment** is assessed, to determine whether or not it is likely to be suitable for **refurbishment/repair** or **material recovery /recycling**.

**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.

**Final Disposal:** Relevant operations specified in Annex IVA of the Basel Convention (Appendix 1 A in this document).

**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.

**Hydrometallurgical processing:** Uses of aqueous chemistry for the recovery of metals from ores, concentrates, or recyclable wastes or products. Typically Hydrometallurgy consists of three steps of (a) Leaching using an acidic or basic aqueous solution to dissolve the desired metal at ambient or elevated pressures and temperatures; (b) Solution concentration, purification, then metal recovery using methods such as: precipitation, cementation, solvent extraction, gaseous reduction, ion exchange, electrowinning or electrorefining and (c) recycling of reagents and treatment of effluents. Hydrometallurgical operations in authorised industrial scale facilities are distinct from unauthorised and illegal environmentally harmful practices in the informal sector.

**Incineration:** A thermal treatment technology by which wastes, sludges or residues are burned or destroyed at temperatures ranging from 850°C to more than 1100°C .

**Labelling:** The process by which individual or batches of **computing equipment** are marked to designate their status according to the PACE guidelines.

**Landfilling:** The placement of waste in, or on top of, ground containments, which is then generally covered with soil. Engineered landfills are disposal sites which are selected and designed to minimize the chance of release of hazardous substances into the environment, e.g. using plastic landfill liners and **leachate** collection systems.

**Leachate:** Contaminated water or liquids resulting from the contact of rain, surface and ground waters, or other pollutants with waste.

**Material Recovery:** Relevant operations specified in Annex IVB of the Basel Convention (see Appendix 1 B in this document).

**Mechanical Separation:** Process of using machinery to separate **computing equipment** into various materials **or components**.

**Potential for reuse (reusable):** **Computing equipment** and its **components** that possess or likely to possess quality necessary to be directly reused or reused after they have been refurbished or repaired.

**Pyrometallurgical processing:** Thermal processing of metals and ores, including roasting, smelting, and remelting.

**RoHS:** Directive of the European Parliament and the Council on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (URL: [http://ec.europa.eu/environment/waste/weee/index\\_en.htm](http://ec.europa.eu/environment/waste/weee/index_en.htm)).

**Recycling:** Relevant operations specified in Annex IVB of the Basel Convention (see Appendix 1 B in this document).

**Redeployment:** Comprises any action of new deployment or use by the owner of previously used **computing equipment** or its **components**.

**Refurbishable:** **Computing equipment** that can be refurbished or reconditioned, returning it to a working condition performing the essential functions it was designed for.

**Refurbishment:** Process for creating **refurbished or reconditioned computing equipment** including such activities as cleaning, data sanitization, and software **upgrading**.

**Refurbished computing equipment:** **Computing equipment** that has undergone **refurbishment** returning it to working condition functional for its originally conceived use with or without upgrades and meeting applicable technical performance standards and regulatory requirements and possible upgrades.

**Remarketing:** Any action, including marketing activities, necessary to sell previously used **computing equipment** or its **components** directly or indirectly to customers.

**Remanufacture:** Any action necessary to build up as-new products using **components** taken from previously used **computing equipment** as well as new **components**, if applicable. The output product meets the original OEM functionality and reliability specifications. To remanufacture a product may require the complete or partial disassembly of the unit, replacement or reprocessing of all components not meeting specifications, and testing to determine the new product is fully functional. Depending on the applied components this process may significantly change the unit's composition, purpose, and design.

**Repairing:** Process of only fixing a specified hardware fault or series of faults in **computing equipment**.

**Reuse:** Process of using again used **computing equipment** or a functional **component** from used **computing equipment** in the same or a similar function, possibly after **refurbishment, repairing, or upgrading**.

**Segregation:** Sorting out **computing equipment** from other (electronic) wastes for possible **reuse** or for **treatment** in downstream processes that may include **recycling/reclamation/refurbishment/repair/reuse/disposal**.

**Separation:** Removing certain **components/constituents** (e.g. batteries) or materials from **computing equipment** by manual or mechanical means.

**Small and Medium Size Enterprises (SME):** According to the European Commission small and medium-sized enterprises are those businesses which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.

**States concerned:** Means parties which are States of export, or import, or transit whether or not Parties.

**Testing:** Process by which used **computing equipment** is assessed against established protocol to determine whether or not it is suitable for **reuse**.

**Transport of Dangerous Goods Recommendations:** UN Recommendations on the transport of dangerous goods which deals with classification, placarding, labeling, record keeping, etc. to protect public safety during transportation.

**Treatment:** Any physical, chemical or mechanical activity in a facility that processes computing **equipment** including **dismantling**, removal of hazardous components, **material recovery, recycling** or preparation for **disposal**.

**Upgrading:** Process by which used **computing equipment** is modified by the addition of the latest software or hardware in order to increase its performance and/or functionality.

**Used Computing Equipment:** **Computing equipment**, which its owner does not intend to use it any longer, but is capable of being reused by another owner, recycled, refurbished, or upgraded by another owner.

**WEEE Directive:** Directive of the European Parliament and the Council on Waste Electrical and Electronic Equipment.

**Wastes:** Substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law (Article 2, paragraph 1 of the Basel Convention).

# Appendix 1

## Basel Convention - Annex IV Disposal Operations

### **A. Operations which do not lead to the possibility of resource recovery, recycling, reclamation, direct re-use or alternative uses**

Section A encompasses all such disposal operations which occur in practice.

- D1 Deposit into or onto land, (e.g., landfill, etc.)
- D2 Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.)
- D3 Deep injection, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories, etc.)
- D4 Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)
- D5 Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
- D6 Release into a water body except seas/oceans
- D7 Release into seas/oceans including sea-bed insertion
- D8 Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A
- D9 Physico chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, (e.g., evaporation, drying, calcination, neutralization, precipitation, etc.)
- D10 Incineration on land
- D11 Incineration at sea
- D12 Permanent storage (e.g., emplacement of containers in a mine, etc.)
- D13 Blending or mixing prior to submission to any of the operations in Section A
- D14 Repackaging prior to submission to any of the operations in Section A
- D15 Storage pending any of the operations in Section A

### **B. Operations which may lead to resource recovery, recycling reclamation, direct re-use or alternative uses**

Section B encompasses all such operations with respect to materials legally defined as or considered to be hazardous wastes and which otherwise would have been destined for operations included in Section A.

- R1 Use as a fuel (other than in direct incineration) or other means to generate energy
- R2 Solvent reclamation/regeneration

- R3 Recycling/reclamation of organic substances which are not used as solvents
- R4 Recycling/reclamation of metals and metal compounds
- R5 Recycling/reclamation of other inorganic materials
- R6 Regeneration of acids or bases
- R7 Recovery of components used for pollution abatement
- R8 Recovery of components from catalysts
- R9 Used oil re-refining or other reuses of previously used oil
- R10 Land treatment resulting in benefit to agriculture or ecological improvement
- R11 Uses of residual materials obtained from any of the operations numbered R1-R10
- R12 Exchange of wastes for submission to any of the operations numbered R1-R11
- R13 Accumulation of material intended for any operation in Section B