

COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

**Fourteenth Session
Geneva, 22 to 27 May 2011**

**Submissions from entities in the United Nations system and elsewhere on their efforts in
2010 to implement the outcome of the WSIS**

Submission by

UNEP

This submission was prepared as an input to the report of the UN Secretary-General on "Progress made in the implementation of and follow-up to the outcomes of the World Summit on the Information Society at the regional and international levels" (to the 14th session of the CSTD), in response to the request by the Economic and Social Council, in its resolution 2006/46, to the UN Secretary-General to inform the Commission on Science and Technology for Development on the implementation of the outcomes of the WSIS as part of his annual reporting to the Commission.

DISCLAIMER: The views presented here are the contributors' and do not necessarily reflect the views and position of the United Nations or the United Nations Conference on Trade and Development.

Action Line C7: E-Environment

Topic: Electronic Waste (E-Waste)

1) Executive Summary

Electronic waste is the fastest growing portion of the municipal solid waste stream. It is estimated that the volume of obsolete PCs generated in developing regions will exceed that of developed regions by 2016 – 2018. Transboundary movement of these goods is forecast to increase significantly as more and more countries produce electrical and electronic equipment. Uncontrolled dumping of obsolete e-products and material recovery processes without protective measures in the informal sector have resulted in environmental pollution while exposing millions of people to toxins, such as dioxins and brominated flame retardants in plastics. The technology for environmentally sound dismantling and disposal of e-waste exists, but it has to be linked to the product life-cycle to become economically viable. Efforts to bridge the digital divide need to follow the life-cycle approach to avoid problems for the health of workers and the general public as well as for the environment.

Under the Basel Convention, electrical and electronic wastes are classified as hazardous wastes. In the Nairobi Declaration on the environmentally sound management of electrical and electronic waste, adopted in 2006, ministers and other heads of delegation from states declared that the Basel Convention is the main global instrument for guiding the environmentally sound management of hazardous e-waste.

In 2003 the Mobile Phone Partnership Initiative (MPPI) was established for the environmentally sound management of used and end-of-life mobile telephones. In 2008 the Conference of Parties to the Basel Convention adopted the guidelines on collection and refurbishment of used mobile phones and material recovery and recycling of end-of-life mobile phones developed under The MPPI.

A Partnership for Action on Computing Equipment (PACE) was launched in Bali, Indonesia in 2008. PACE is a multi-stakeholder partnership that provides a forum for governments, inter-governmental organizations, industry leaders, non-governmental organizations and academia to tackle the environmentally sound management, refurbishment, recycling and disposal of used and end-of-life computing equipment. Currently guidelines on refurbishment of used computers and recycling of end-of-life computing equipment are under development.

E-waste projects are being implemented under the auspices of the Basel Convention in particular in Asia Pacific region since 2005 and in Africa since 2009. An interactive facilitation meeting at WSIS Forum 2010 discussed the political background, programmes and activities on e-waste. Future action is needed to develop partnerships to link environmentally sound management of end-of-life computing equipment in ICT development programmes.

2) Analytical Overview

Electronic waste is the fastest growing portion of the municipal solid waste stream. It is estimated that the volume of obsolete PCs generated in developing regions will exceed that of developed regions by 2016 – 2018. In recent years, significant international transboundary movement has evolved in used personal computers and associated hardware, used electronic equipment and used cellular telephones for the removal of usable parts, for refurbishment and reuse and for processing for the recovery of raw materials. Transboundary movement of these goods is forecast to increase significantly as more and more countries produce electrical and electronic equipment and tighten control over acceptable disposal methods, adopt processes to recover valuable constituents and use safe practices to deal with the hazardous constituents in e-wastes (e.g. cadmium, lead, beryllium, CFCs, brominated flame retardants, mercury, nickel and certain organic compounds). While offering some economic benefits, massive import of e-wastes coupled with the same wastes being generated locally is placing a heavy health and environmental burden, in particular to developing countries. Huge amounts of wastes, both hazardous and solid, is burned or dumped in the rice fields, irrigation canals and along waterways. The open burning and toxic dumping pollute the land, air and water and exposes men, women and children to poisonous emissions and effluents. The health and economic costs of this trade are neither borne by the developed countries nor by the waste brokers who benefit from the transaction.

Numerous obstacles have been identified by developing countries in regard to their ability to manage e-wastes in an environmentally sound way. These include: lack of easily accessible information (on flows, quantities, available technology, legislative/trade requirements of countries importing new products, who will require increasingly strict standards for minimization and re-use, recycling and recovery); lack of trained personnel; inadequate legislations; inadequate infrastructure for collection, recycling and recovery; lack of public awareness; and lack of economic alternatives to activities carried out by the informal sector and small family repair shops.

Under the Basel Convention, electrical and electronic wastes are classified under Annex VIII entries A1180, A1190, A1150 and A2010 and also under Annex IX as B1110. E-wastes are characterized as hazardous wastes under the Convention when they contain components such as accumulators and other batteries, mercury switches, glass from cathode-ray tubes and other activated glass, PCB-containing capacitors or when contaminated with cadmium, mercury, lead or PCBs. Also, precious-metal ash from the incineration of printed circuit boards, LCD panels and glass waste from cathode-ray tubes and other activated glasses are characterized as hazardous wastes. To address the environmental issues related to the increasing transboundary movements of these wastes, and to ensure that their storage, transport, treatment, reuse, recycling, recovery and disposal is conducted in an environmentally sound manner, a proactive approach is essential. The plastics associated with e-wastes may also be covered, under Annex II of the Basel Convention.

The theme for the eighth meeting of the Conference of the Parties to the Basel Convention, held from 27 November to 1 December 2006, was “Creating Innovative Solutions Through the Basel Convention for the Environmentally Sound Management of Electronic Waste”. The high-level segment featured an in-depth discussion on the theme during a one-day World Forum on E-wastes. Ministers, corporate officials, civil-society representatives and other participants explored solutions for advancing the objectives of ensuring the environmentally sound management of e-waste. Subsequently, the Nairobi Declaration on the Environmentally

Sound Management of Electrical and Electronic Waste and decision VIII/2 were adopted by the Conference of the Parties at its eighth meeting (see UNEP/CHW.8/16).

Based on the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste (2006), several activities and projects addressing this waste stream have now been implemented under the Basel Convention, Basel Convention regional centres, UNEP, UNIDO, NGOs and other organizations worldwide. This include awareness raising activities; detailed inventories; initiation of pilot schemes on collection and segregation of e-wastes, including take-back schemes; initiate pilot repair, refurbishment and recycling schemes; and training of customs and enforcement officers to control or verify export or import of electrical and electronic wastes and work on the identification of electronic wastes in the Harmonized System of the World Customs Organization.

Under the chairmanship of the United Nations Environment Programme (UNEP) Secretariat of the Basel Convention, an interactive facilitation meeting at WSIS Forum 2010 discussed the political background, programmes and activities on e-waste. Different perspectives were presented by the International Labour Office (ILO), a representative of the Ministry of Environment, Nigeria, the public interest non-governmental organization Basel Action Network (BAN), and the Bureau of International Recycling (BIR).

3) Innovative Policies, Programmes and Projects

The sixth meeting of the Conference of the Parties adopted the Basel Convention Partnership Programme under decision VI/32 as part of its 10-year Strategic Plan, convinced that the active involvement and support of industry and business organizations and non-governmental organizations is necessary to achieve the aims of the Basel Convention.

The Partnership Programme to date has included two initiatives in its framework: the Mobile Phone Partnership Initiative (MPPI) and the Partnership for Action on Computing Equipment (PACE). The Mobile Phone Partnership Initiative (MPPI) was launched in 2002, during the sixth meeting of the Conference of the Parties to the Basel Convention, when 12 manufacturers signed a Declaration entering into sustainable partnership, with the Basel Convention and in cooperation with other stakeholders, to develop and promote the environmentally sound management of end-of- life mobile phones. Following the success of the MPPI, PACE was launched at the ninth meeting of the Conference of the Parties to the Basel Convention, which took place in Bali in June 2008. PACE is a multi-stakeholder partnership that provides a forum for governments, industry, non-governmental organizations and academia to tackle the environmentally sound management, refurbishment, recycling and disposal of used and end-of-life computing equipment. PACE is intended to increase the environmentally sound management of used and end-of-life computing equipment, taking into account social responsibility and the concept of sustainable development, and promoting the sharing of information on life cycle thinking. Developing countries will benefit from these Partnerships in that the guidelines produced will be useful to help them in achieving the environmentally sound management of mobile phones and computing equipment as well as from the establishment of pilot collection schemes and for and treatment schemes for used and end-of-life mobile phones and computing equipment in developing countries and countries with economies in transition. More information is available on the website of the Secretariat of the Basel Convention (<http://www.basel.int/>), the Mobile Phone Partnership Initiative, MPPI (<http://www.basel.int/industry/mppi.html>), and the Partnership for Action on Computing Equipment, PACE (<http://www.basel.int/industry/compartnership/index.html>).

Many e-waste projects are being implemented under the auspices of the Basel Convention in particular in Asia Pacific region since 2005 (for details see this link <http://www.basel.int/techmatters/index.html>) and in Africa since 2009. The following Asian countries have supported and are participating in the project activities: Cambodia, China, India, Indonesia, Malaysia, the Philippines, Singapore, Sri Lanka, Thailand and Viet Nam. In addition, the South Pacific Regional Environment Programme has completed a regional e-waste inventory for the Pacific island countries. Activities involving detailed inventories of e-waste in Cambodia, Malaysia, Thailand and Viet Nam are also being carried out. Two sets of technical guidelines were completed under the leadership of the Basel Convention Regional Centre for South East Asia on the methodology of e-waste inventory and environmentally sound management and “3R” (reduce, reuses, recycle) of end-of-life e-products.

For the E-waste Africa project, a comprehensive set of activities which will build local capacity to address the flow of e-wastes and electrical and electronic products destined for reuse in African countries and will augment the sustainable management of resources through the recovery of materials in e-wastes. The project is being implemented by the Basel Convention Regional Centres based in Nigeria and Senegal, in cooperation with partners including the Swiss Federal Laboratories for Materials Science and Technology (EMPA), the Oko Institut, the European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL), UNESCO and PACE. The project will run through to 2012. In addition to pilot activities, technical guidelines and manuals for the environmentally sound management (ESM) of e-waste have been developed or under development. However, more investment is needed in developing countries in order to effectively solve their mounting problems in e-waste generation and management.

The technology for environmentally sound dismantling and disposal of e-waste exists, but it has to be linked to the product life-cycle to become economically viable. Efforts to bridge the digital divide need to follow the life-cycle approach to avoid problems for the health of workers and the general public as well as for the environment. This includes provisions for take-back systems, collection and dismantling, as well as environmentally sound facilities for extraction, recycling and disposal of the computing equipment components.

Future action is needed to develop partnerships and programmes to link environmentally sound management of end-of-life computing equipment in ICT development programmes, including procurement, infrastructure strengthening and education on national, regional and international level.

Matthias Kern

Senior Programme Officer, UNEP Secretariat of the Basel Convention