

## **The E-Waste Training Workshop for Asia and the Pacific**

**10-14 August 2009**

**Hanoi, Vietnam**

Final Summary Report

1. The E-Waste Training Workshop for Asia and the Pacific was held in Hanoi, Vietnam on August 10-14, 2009. The workshop was attended by 71 participants from the participating countries in the Basel Convention Partnership on the Environmentally Sound Management (ESM) of Electrical and Electronic Wastes for Asia Pacific Region (Cambodia, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand and Vietnam), Japan, Secretariat of the Basel Convention (SBC), United Nations Environment Programme, International Environmental Technology Centre (UNEP-IETC), the Basel Convention Regional Centre for South-East Asia (BCRC-SEA), the Basel Convention Coordinating Centre for Asia and the Pacific in China (BCRC China), 16 resource persons from private companies which operate facilities for e-waste and/or hazardous waste and research institutes, and 15 observers from Pakistan, several departments in Vietnam, private companies and universities.
2. In the Opening Session, four opening remarks were delivered by the distinguished speakers. First, Dr. Bui Cach Tuyen, Director General of Vietnam Environment Administration (VEA), warmly welcomed the participants. He stressed the fast growth of e-waste generation which is potential of releasing toxic substances to industrial and natural environment. The initial inventory in Vietnam shows that e-waste is becoming a big problem in terms of hazardous wastes management and that it cannot be solved without cooperation and collaboration of other countries in the region. Vietnam has been active on the framework of the Basel Convention Partnership on ESM of e-waste in Asia Pacific and therefore in the framework, the workshop is organized to share experiences to deal with the matter. Mr. Dadan Wardhana H.S., Programme Officer, SBC highlighted that e-waste has been priority waste stream to be managed under Basel Convention framework. As mandated by Conference of the Parties (COP) 6, the Basel Convention has subprogram on e-waste management, among others are, capacity building and strengthening cooperation between countries and regions, and this event is one of the events in line with this subprogram. Mr. Aboejoewono Aboeprajitno, Director of BCRC-SEA stressed that e-wastes management issues need to be addressed with serious and urgent attention, particularly in Asia Pacific region. He informed about the projects carried out by BCRC-SEA on e-wastes management, which were development of technical guidelines on e-waste inventory and 3R (reduce, reuse, recycle) of electrical and electronic equipment (EEE), and providing training on e-waste in 6 cities/provinces in Cambodia. Professor Jinhui Li, Executive Secretary of BCRC China said that a lot of achievement has been made since the Asia Pacific

Regional Scoping Workshop in Beijing in 2002 under the Basel Convention Framework. He informed that in China this year the Chinese State Council has issued domestic amendment of e-waste, which regulated special fund collected from e-product manufacturers to support recycling facilities. BCRC China is supporting the Ministry of Environmental Protection of China to formulate supportive documents including explanation of the ordinance. He said that this policy in China together with good experience in other Asia Pacific countries may support ESM of e-wastes in the region. All speakers thanked Ministry of the Environment of Japan (MOEJ) for supporting the workshop, Vietnam Environment Administration for hosting the workshop, and the co-organizers, BCRC-SEA and BCRC China. The session was followed by introduction of participants, chaired by Dr. Bui Cach Tuyen, Director General of VEA, and objectives and programmes of the workshop by representatives of MOEJ. Ms. Junko Nishikawa informed about the progress of projects in countries. In general, the situation was not as expected, and therefore the workshop was organized to encourage countries to actively participate in the program. Dr. Shunichi Honda explained in more detail about the program of the workshop.

3. The Programme 1 was chaired by Mr. Hoang Danh Son, Director of Legal and Policy Department, VEA. During the Programme 1, the representative of UNEP-IETC and SBC presented on project development, management, implementation and evaluation. Dr. Mushtaq Ahmed Memon from UNEP-IETC explained about the project cycle in detail for each steps, namely inception, planning/development, document, project approval, project implementation, project management, monitoring system, evaluation, revision, and project closing. He presented the UNEP/SBC manual for project cycle and mentioned the project cycle for the e-waste project. Mr. Dadan Wardhana H.S. from SBC provided more information on how to develop an e-waste project and wrapped up explanation by Dr. Mustaq Ahmed Memon. He emphasized that proposal can be submitted through donors, not only through UNEP/SBC. He also provided other information on the process of development of an e-waste project.
4. Through the discussions, the participants raised questions and clarifications on developing project proposals, e.g. how to initiate a project proposal for funding from UNEP/SBC which already has a certain amount of funding from a local partner, information on sub contract of the project, Memorandum of Understanding (MOU) for project with budget over certain amount, usage of project budget to buy equipment and staff salary for a certain budget limit, and capability to develop a good project proposal. Philippines shared information of its ongoing projects where funding comes from different sources. SBC, UNEP-IETC and MOEJ provided clarification on these issues.
5. The Programme 2 was chaired by Mr. Ken Choviran from Cambodia and country participants presented their draft project proposal/plans. During discussion session, participants asked for clarifications and gave the comments on the draft country project proposal such as the scheme

of e-waste collection, how to set up the scheme, how to treat the e-wastes and how to secure future funding after certain project. MOEJ informed participants that the member countries submit proposal with specific components with funding from certain range, based on the proposal that those countries submitted to the Asia-Pacific Regional Inception Workshop on ESM of E-waste in 2005. If the proposed budget exceeds the range limit, the projects have to be clear about the activities. Participants also shared information on e-waste collection system and the importance of the governmental policy on the collection system.

6. Ms. Qurie Purnamasari from Indonesia chaired the Programme 3 session on the second day. Mr. Sreng Sophal from Cambodia Environmental Association (CEA) presented on ESM of collection and separation at community and informal sector in Cambodia. He informed about general information on the country, existing related legal instrument, inventory activity in 2007, e-waste flows and its residue. Professor Jinhui Li from BCRC China made the presentation on a case study in Suzhou communities on effective collection scheme of e-waste. He concluded that demonstration sites have active influence to e-waste collection from residents. Dr. Ong Hean Tee from Penang Environment Working Group (PEWOG) explained the ESM of collection and separation of e-waste at community and informal sector in Penang, Malaysia. He pointed out the obstacles and expected that e-waste should be seen as part of economy not just as enforcement exercise. Mr. Eng. Dinh Dang Hai from Urban Environment Company Limited (URENCO) presented on how the collection and separation of e-waste is conducted by an authorized collector in Vietnam. Ms. Sunee Piyapanpong from Thailand presented on policy approach on ESM of e-waste, covering current situation, obstacles, legal framework, policy and financial mechanisms, future action related on e-waste in Thailand.
7. During discussion, questions were raised related to activities in e-waste collection centre, which included competitiveness of the collection centre against informal centre, its operational, location and pricing for handling. Distribution of e-waste collection centres for e-waste takes into considerations the population, rate of replacement of electronic goods, distribution of urban areas and the distance from residential. Japan experience indicates that there is different system management for personal computers and bulky electronic devices. Shops deliver e-products to houses, take them back as e-waste and the price for the management depends on the types of the e-waste. The participants recognized the need to keep updated with available technology such as in collecting Used Lead Acid Battery (ULAB). In the case of subsidy for e-waste management in Thailand, it is stated that there is a need for further study, though some concepts have been formulated.
8. The Programme 4 was chaired by Mr. Wan Azuan Wan Omar from Malaysia. Good practices on ESM of repair, refurbishment and reconditioning of used EEE at community and informal sector in India were presented by Mr. Amit Jain from IRG Sustersms South Asia Private Limited, and practises in the Philippines and Vietnam were presented by Ms. Melissa May F. Cardenas

from SAGIP-Environment and Dr. Huyn Trung Hai from Hanoi University of Technology. Mr. Chaithad Kulchokwanich from Siam Recondition Industry Co., Ltd presented the practises conducted by an authorized recycler in Thailand.

9. Following the presentations, the participants came into discussion on the related problems, highlighting the roles of the formal and informal recyclers, disposal of the hazardous waste from e-waste, public awareness raising, control or monitoring the emission from the incinerator, etc. Through the session, the beneficial practices on ESM of repair, refurbishment and recondition were shown and shared by the participants in the region.
10. The Philippines, represented by Mr. Geri Geronimo R. Sanes, chaired the Programme 5 session on the third day. The session was about the ESM of the material recovery and recycling. In this session, the material recovery and recycling technologies of several important Waste Electrical and Electronic Equipment (WEEE) were introduced to the participants, which were ULAB by Mr. Irving Castro Guerrero from Philippine Recyclers Inc, and fluorescent lamps by Mr. Toshiyuki Ikeda from Thai Toshiba Fluorescent Lamp Co., Ltd. Topics on CRTs and E-scrap were presented by Mr. Charuek Hengrasmee from Electrical and Electronics Institute, Thailand and Mr. Masayuki Naka from Dowa Eco-System Co., Ltd., Japan. Mr. Michikazu Kojima from Institute of Developing Economies, JETRO, Japan introduced the policy approach of the practises.
11. During discussion, participants asked for clarification on several issues such as domestic collection and importation of ULABs for lead recovery and amount of importation volume, support for other countries, recycling, recovery and disposal cost and transboundary movement of e-wastes. It is stressed that transboundary movement of e-waste should comply with provision of the Basel Convention. More technical issues were also raised, such as on methods of e-waste material segregation, process of mercury recovery and further treatment of recovered mercury, residual disposal, salvage lifetime, possibility to extract lead from CRTs, return of investment of facility and ESM during transportation until disposal.
12. The following session, the Programme 6 on other elements for ESM was chaired by Ms. Hettiarachchige Pathma Sarojinie Jayasekara from Srilanka. Presentation on development of e-waste inventory was delivered by Mr. Junya Kikuhara from EX Corporation, Japan, and on ESM of informal/formal sector was delivered by Dr. Atsushi Terazono from National Institute for Environment Studies, Japan. Dr. Sukandar from Institut Teknologi Bandung, Indonesia, followed by presentation on Introduction to Regional Technical Guidelines on the Reduce, Reuse, Recycle (3R) of End-of-life Electronic Products. Presentation on e-waste management with focus on capacity building and institutionalization was made by Dr. Mushtaq Ahmed Memon from UNEP-IETC, followed by Professor Yongfeng Nie from BCRC China/Tsinghua University, who presented on development of recycle and technologies of e-waste in China. Several questions related to the presentations were raised by the participants and clarified by

the presenters.

13. Mr. Aboejoewono Aboeprajitno from BCRC-SEA and Professor Jinhui Li from BCRC China became co-chairs for the Programme 7 session on overall discussion. Both co-chairs presented the draft summary of the workshop.
14. During the overall discussion session, comments and suggestions were made by the participants, such as suggestion to group e-waste management system in Asian countries according to their social and economic condition and e-wastes with similar collection and operational system, to stress importance on reduce activities, and issue on different definition of used and e-waste in each country. It was suggested that country participants requested to the Partnership for Action on Computing Equipment (PACE) regarding requirement on guidelines to define used and e-waste. The importance of information sharing on national policies, technology available and good practises was pointed out. An issue of the term “appropriate technology” instead of “environmentally sound technology” was also raised, since an environmentally sound technology may not suit all countries due to the costs and availability of raw materials. In this session, objective of the e-waste projects development, which is to establish national capacity of e-waste management was emphasised.
15. On the fourth day, during Programme 8 session, each participating country had a meeting with SBC, MOEJ and BCRCs to pre-finalize their project proposals/plans on e-waste management as presented during Programme 2. Each country then presented their revised project proposal/plan in Programme 9 session, chaired by Ms. Sunee Piyapanpong from Thailand.
16. Following the presentations, participants asked for clarifications on the revised project proposals such as link between result from pilot collection project to the new proposed regulation, sample size of questionnaires and destination of collected e-waste, survey of Best Available Techniques / Best Environmental Practises (BAT/BEP) in other countries, plan for future material recovery, inclusion of households as hazardous waste generators and location of pilot city. Suggestions were also made to consider import and export data from several ports, consumption and discard pattern, sampling area and questionnaire to cover illegal import of used EEE, to track the formal and informal recyclers as well as to train and involve the informal sector to the more formal sector and provide collection for charities. At the end of the session, SBC commented on the benefits to have regional cooperation and share resources such as existing guidelines, training of national trainers and to have flow of activities into diagram which will show the linkage with national plans or strategy.
17. On the fifth day, the site visit was held at Namson Solid Waste Treatment Complex of URENCO. The participants visited several facilities, such as E-waste treatment facility, the secured landfill site and incinerator.