

## Partnership for Action on Computing Equipment (PACE)

### TERMS OF REFERENCE

#### PACE Project Group 3.1: Collection and Management of End of Life Computing Equipment from Informal Sectors

##### Background

1. PACE was initiated by Decision IX/9 of the ninth meeting of the Conference of the Parties to the Basel Convention whereby the Conference of the Parties agrees with the mission, scope, working principles and activities of the Partnership for Action on Computing Equipment. Included in those activities was the following:

*3. Develop and promote pilot schemes for environmentally sound management of used and end-of-life computing equipment towards the achievement of the Millennium Development Goals;*

This project is one such activity to be implemented in developing countries and countries with economies in transition.

2. Today, there is a very active informal or less organized small scale sector collecting used and end-of-life computing equipment for repair and re-use in many developing countries and countries with economies in transition. The low cost of entry into the computing equipment repair and resale business provides a unique economic development opportunity in low-income, poverty stricken areas. However the environmental impact from such operations can be severe if the unusable parts are discarded, dumped and burned without being collected and properly recycled. In a smaller number of countries, an informal sector has evolved which attempts to recover materials from electronic waste such as copper, gold and plastics, but does so utilizing processes which cause harm to human health and the environment. It is clear that often the informal sector lacks the education and training needed to properly manage the collection and materials recovery of some parts at their end-of-life to ensure that it is managed in an environmentally sound manner. Therefore, they are likely unaware of the potential environmental and health and safety risks as well as all of the options involved in recycling computing equipment. Moreover, most developing countries lack the infrastructure and industrial capacity for all processes needed for a complex electronic waste stream and therefore must rely on facilities outside of their country to ensure the environmentally sound recovery of some material derived from used and end-of life computing equipment. However, sometimes these destinations, due to their efficiency are also the most profitable pathways even with the addition of shipping costs. Yet, many local businesses are ill-informed and/or ill-equipped to sell their material into environmentally sound, global markets.

## **Objective**

3. The goal of this project is to find and pilot projects, mechanisms and tools, to divert end-of-life computing equipment from environmentally unsound landfill, open-pit burning and harmful recycling operations to environmentally sound and efficient recycling operations locally and globally in a manner that is sustainable and mindful of improving the health and welfare of the informal sector. The pilot project will also be utilized to test the ESM Guidelines produced by the PACE program.

## **Membership and Operation**

4. Membership in the Project Group will be members of the PACE Working Group, and will be expected to have specific expertise and experience in aspects of management of used and end-of-life computing equipment as it pertains to collecting, refurbishment, recycling and recovering material, in both developed and developing countries and countries with economies in transition, as well as commitment to the objectives of the group.

5. A current and official list of members will be maintained by the co-chairs, with contact information as provided by the members (see Annex I).

6. Alternate participants may attend meetings in proxy for group members, provided that the group member has provided advance notice to the Co-Chairs regarding the identity and qualifications of such alternate participant, and an assurance that the alternate participant is adequately prepared to participate. Alternate participants should be aware of Rules of Procedure and obligations of confidentiality.

7. Work will be conducted primarily by monthly teleconference of the entire Project Group and by a Project Management Team (PMT). The Project Group will decide on the composition and terms of reference for the PMT, will serve as steering committee and will monitor the project implementation of the PMT. The Project Group may decide to delegate the project management to an agency with respective project implementation experience and logistical infrastructure, pursuant to available funds and budget approval.

8. The PMT will be responsible for the planning, organisation and implementation of project activities in partner countries. The PMT will organize the implementation of project activities through Country Project Teams consisting of a Country Project Manager and ideally include: at least one national NGO, at least one government representative, at least one BCRC representative, at least one industry expert, and other interested experts.

9. The PMT will report to the Project Group during each teleconference. Problems and milestones will be reported and discussed.

10. The Project Group will operate pursuant to the Rules of Procedure of the PACE Working Group, applicable mutatis mutandis.

### **Non Member Technical and other Experts**

11. Pursuant to paragraph 30 of the Terms of Reference of the PACE, the Co-Chairs of the Project Group may decide to invite non-member experts possessing specialized technical knowledge on an issue to be discussed at a meeting to participate in that meeting, or parts thereof. In addition, non-members wishing to participate as experts should send their interest, which should be endorsed by an existing PACE Working Group member, a brief written proposal (2 pages maximum) to the Secretariat of the Basel Convention who would consult the PACE Working Group for their views and a decision on the expert's participation made through a written procedure by the PACE Working Group. Non-member expert participants should be aware of Rules of Procedure and obligations of confidentiality.

### **Meetings of the Project Group**

12. The Project Group will meet by teleconference, as needed and anticipated to be conducted once per month, with interim communication through e-mail to prepare for and report developments. Dates and times of such meetings will be set by the Co-chairs in consultation with the members.

13. Physical meetings may be held if the Project Group determines that such meetings will be beneficial and feasible, and in particular for country teams, at such times and venues as the Project Group shall determine. All such physical meetings shall be approved by the PACE Working Group.

14. Meeting documents will be distributed to Project Group members in advance of each meeting, and a meeting summary report will be distributed following each meeting.

### **Duties and Responsibilities**

15. Members of the Project Group will participate actively through meetings, maintain current awareness of Project Group issues and developments, and share their expertise to further the objectives of the group.

16. Project Group Co-chairs will attend all meetings, prepare meeting agendas, lead discussions, prepare and file reports of group meetings and developments, and generally seek to facilitate and guide group members to achieve group objectives.

17. Confidentiality will be maintained by all members in accordance with the provisions set forth in the Terms of Reference of the PACE Working Group.

### **Reporting Arrangements and Approvals**

18. Official reports and communications from the Project Group will be disseminated by the Project Group Co-chairs, or by the Secretariat on behalf of the Project Group Co-chairs. Communications by other members of the Project Group will not officially represent the group or the views of other members of the group.

19. Project Group meeting summary reports, following review and approval of the group in a subsequent meeting, will be distributed to the co-chairs of the PACE Working Group, and to the Secretariat of the Basel Convention.
20. All work products prepared by the Project Group will be submitted by co-chairs to the PACE Working Group for review and final approval.

### **Project Tasks**

21. The Project Group will undertake the following tasks:
  - A. Conduct Literature and Information Search: In conjunction with the ESM Interim Project Group, all similar programmes and projects, investigations and studies regarding the informal sectors and waste flows in developing countries and countries with economies in transition will be collected, summarized and made available to the Project Group.
  - B. National Survey: Involving to the extent possible BCRCs, identify and quantify the flows both material and economic, of used computing equipment and the arisings of end-of-life computing equipment in chosen developing countries and countries with economies in transition settings. The project will produce criteria for deciding and then choosing 6 - 8 survey countries. This work will build where possible on work already done or underway in other programs. A template will be prepared by the Project Group for the information to be included in national Surveys.
  - C. Informal Sector Collection / Strategies: From the national survey countries, pilot countries (2-4) will be selected, as approved by the Project Group. For these chosen pilot countries the project will develop environmentally, economically and socially sustainable approaches to collect used and end-of life computing equipment in cooperation with, and to the benefit of the informal sectors and small repair, refurbishment enterprises in developing countries and countries with economies in transition, including utilizing partnerships and educational programs. Strategies to overcome obstacles to implementation and to assess and avoid risk to the project's success will be examined.
  - D. Develop Decision Making Framework: Based on information from the other PACE projects, develop overall criteria or guidance to assist in evaluating, narrowing down the list of options, and identifying appropriate and practical destinations for used and end-of-life computing equipment and parts thereof in pilot countries taking into account economic, environmental and social considerations.
  - E. Disposition Strategies: Using the guidance developed under Task 4 above, identify appropriate destinations, examining all options both foreign and domestic for material recovery, repair, reuse and disposal for end-of-life computing equipment and parts thereof, and develop a self-sustaining means to deliver these materials to such destinations. In collaboration with the informal sector and other stakeholders, develop strategies to overcome obstacles to implementation and to assess and avoid risk to the implementation of this Task.

F. Field Testing – To field test the pilot collection and disposition plan including the educational elements for a minimum of 6 months.

G. Launch and Monitor Operations: Pursuant to available funding and budget approvals, to launch as a self-sustaining operation the pilot projects making the necessary adjustments indicated by the field tests. To continue to monitor the operations with a view to identifying and as possible, correct problems and improve efficiencies, education and communication of all stakeholders. Ideally a BCRC would lead this process.

H. Documentation: Document the projects and produce a How-To Manual. It will include a development of the Table of Contents for this Manual, approved by the Project Group.

I. Adoption: PACE Working Group to accept completion of project and final report and the Manual.

### **Project Start and Deliverables:**

22. Work on Project Tasks will start upon approval of the Terms of Reference for the Project Group by the PACE Working Group and each of the following deliverables will be approved at each stage by the PACE Working Group.

23. Pursuant to available funding and budget approvals the project deliverables are anticipated to be as follows:

A. Literature and Information Search Library and Summary of all similar work (e-waste projects in developing countries and countries with economies in transition) done to date by other fora, or organizations.

B. Decision on criteria to assist the project in choosing 6-8 Nominee Countries in which to initiate Surveys.

C. Template for conducting Country Surveys.

D. Country Surveys of wastes from computing equipment in Nominated Countries.

E. Appropriate Pathway Decision Framework Criteria Developed.

F. Selection of 2-4 Pilot Countries.

G. Development of Collection and Disposition Plan for Each Pilot Country. Scheme is to include key actors, and funding mechanism and contracts as necessary.

H. Field Testing of Project for at least 6 months.

I. Project Monitored after launch.

## J. Document of Project Experiences and Produce a How-To-Manual

### **Costs of the Project**

24. In the first stages the work will be conducted by the Project Group through in-kind donations of member's time and organizational resources, however as the work progresses additional funding for a project implementation agency and consultants as necessary, travel, and contractual arrangements for example with local fixers, and NGOs, researchers will be necessary. Costs may include physical meetings with Country Project Teams and educational workshops in the pilot countries. In Annex III the budget is provided.

25. Financial contributions to PACE and to the Basel Convention, that support the work of the PACE and the work of this Project Group, are gratefully appreciated and acknowledged.

### **Project Timelines**

26. Project timetables are set forth in Annex II. **Annex I**

## **Participants List of Project 3.1**

*(This Annex is to include a list of all participants, members and technical experts as per paragraph 30 of the PACE Working Group terms of references. It will be revised from time to time as new participants join the project group)*

### **Co-chairs:**

1. Jim Puckett, BAN (acting)
2. Oludayo Dada - Nigeria

### **Participants**

3. Andreas Manhart, OKO Institute
4. Andy Howarth, UK
5. Curtis Stuart, International Lead and Zinc Study Group
6. Dadan Wardhana, SBC
7. Dana Lapešová, BCRC- Slovakia
8. David Rochat, EMPA
9. Eric Harris, ISRI
10. Francesca Cenni, Africa Project SBC
11. Hani Moubasher, BCRC- Egypt
12. Ibrahim Shafii, SBC
13. Idrissa Semde, Burkina Faso
14. Isabelle Thelin, Norway
15. Jane Metcalfe,- USA
16. Jean Marie Vianney Minani, Rwanda
17. Marco Buletti, Switzerland
18. Margareta Appelberg, Sweden
19. Matthias Kern, SBC
20. Mathias Schluemp, EMPA
21. Michael VanderPol
22. Michel Seck, BCRC- Senegal
23. Mushtaq Ahmed Memon, UNEP/IETC
24. Oladele Osibanjo, BCRC-Nigeria
25. Patricia Whiting, USA
26. Richard Gutierrez, BAN Toxics, Philippines
27. Ross Bartley, BIR
28. Ruediger Kuehr, UNU
29. Sarah Westervelt, BAN
30. Shunichi Honda, Japan
31. Theo Lehner, Boliden
32. Wen-Ling Chiu, IER
33. John Myslicki, Consultant to SBC





## Annex III: Project Budget

Project Task and Subtasks	Country 1 „e-Waste Africa project“	Country 2 „with available country assessment“	Country 3 „new land“
<b>Task 1 -- Conduct Literature Search</b>			
1.1 – Collection			
1.2 – Post on Web			
1.3 – Summarize			
<b>Task 2 -- National Survey</b>			
2.1 – Survey Template			
2.2 – Selection Criteria			
2.3 – Nomination			
2.4 – Select Countries			
2.5 – Conduct Surveys		\$ 5,000	\$ 30,000
2.6 – Pilot Criteria			
2.7 – Select Pilots			
<b>Task 3 -- Collection Strategies</b>			
3.1 – Form Team		\$ 5,000	\$ 5,000
3.2 – Conduct research		\$ 15,000	\$ 15,000
3.3 – Team Meetings	\$ 10,000	\$ 15,000	\$ 15,000
3.4 – Develop Strategy	\$ 2,000	\$ 2,000	\$ 2,000
<b>Task 4 -- Develop Disposition Decision Making Framework</b>			
4.1 –Framework			
<b>Task 5 -- Disposition Strategies</b>			
5.1 – Research		\$ 15,000	\$ 15,000
5.2 – Develop Strategy		\$ 5,000	\$ 5,000
5.3 – Arrange/Contract	\$ 10,000	\$ 10,000	\$ 10,000
<b>Task 6 -- Field Testing / Launch Operations</b>			
6.1 – Field Testing	\$ 40,000	\$ 40,000	\$ 40,000
<b>Task 7 -- Documentation</b>			
7.1 – Write / Publish	\$ 20,000	-	-
7.2 – PACE Working Group Approval			
<b>Task 8 – Launch and Monitor</b>			
8.1 -- Launch	\$ 5,000	\$ 5,000	\$ 5,000
8.2 -- Monitor	\$ 5,000	\$ 5,000	\$ 5,000
<b>Task 9 -- Adoption</b>			
9.1 – Adoption PACE WG			
9.2 – Adoption OEWG/COP			
<b>TOTAL</b>	<b>\$ 92,000</b>	<b>\$ 122,000</b>	<b>\$ 147,000</b>

## Remarks:

### General

- Matching funding: Every budget line above allows to split between PACE and matching funding from the beneficiary country. I felt like it is not the right time to do this split now already, since this will very much depend on available budget at PACE and willingness and possibility of a beneficiary country to contribute with own money
- Task 2: I cut down the budget, assuming that the involvement of international experts with OECD wages will be minimal and that it will not be a detailed survey.
- Task 6: I think we will need at least those 40k for a 6 months trial period. This actually should include a technical support by an international „consultant“ (appr. 0.5 day per week), at least two travels to the pilot, continuous supervision and data recording by a local „consultant“ and some flexibility money to support the pilot with some basic tools if needed.
- Task 7: We of course will need this money only once and not for every country again.
- Task 8: Having some money left there will give the project at least the possibility to initiate the transition from a test environment to a long term operation.

### Country 1 "e-Waste Africa Project"

- This will be a country from the SBC e-waste Africa project (e.g. Nigeria or Ghana)
- all research in Tasks 1-5 will be executed within the SBC project (and hence are financed already)

### Country 2 "with available country assessment"

- This will be a country where a previous country assessment was conducted through other projects (BRCRs (e.g. some Asian countries), Empa (e.g. Kenya, Uganda, Senegal, Morocco), etc.)
- Task 2.5 "conduct surveys" needs only minimal efforts by closing info gaps in the existing surveys

### Country 3 "new land"

- This will be a country where no or only scarce data is available (e.g. Cambodia, Pakistan, Egypt, etc.)
- This will need a more or less comprehensive country survey