



E-WASTE VOLUME I

Inventory Assessment Manual

UNITED NATIONS ENVIRONMENT PROGRAMME

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E-waste

Volume I: Inventory Assessment Manual

Compiled by



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Division of Technology, Industry and Economics
International Environmental
Technology Centre

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Preface

Waste Electrical and Electronic Equipment (WEEE) or E-waste is one of the fastest growing waste streams in the world. In developed countries, it equals 1% of total solid waste on an average. The increasing “market penetration” in developing countries, “replacement market” in developed countries and “high obsolescence rate” make WEEE/E-waste one of the fastest waste streams. There is a pressing need to address e-waste management particularly in developing countries. The presence of valuable recyclable components attracts informal and unorganised sector. The unsafe and environmentally risky practices adopted by them poses great risks to health and environment.

For effective WEEE/E-waste management, we need to quantify and characterize this waste stream, identify major waste generators, and assess the risks involved. A scientific, safe and environmentally sound management system, including policies and technologies, needs to be developed and implemented.

International Environmental Technology Centre (IETC) of Division of Technology, Industry and Technology (DTIE) of UNEP is assisting member countries on ISWM. IETC is also focusing on WEEE/E-waste management as a part of ISWM. As an initial step, to build the capacity, IETC has produced two manuals on WEEE/E-waste to assist the member countries and their cities to develop the inventories and WEEE/E-waste management system.

This first manual on WEEE/ E-waste has been prepared as a guidance document to support WEEE/E-waste inventorisation and assessment risks involved. This manual has been prepared based on data from secondary sources including publications from scientific journals, reports and web sites. A case study based approach has been adopted to provide the examples of live situations so that it can be easily adapted to local conditions.

The manual was developed as a part of Norwegian Assistance on Integrated Solid Waste Management and in close cooperation with Secretariat of Basel Convention

(SBC) and Sustainable Consumption and Production (SCP) branch of DTIE-UNEP. Mr. Amit Jain, an expert on WEEE/E-waste assisted IETC to prepare this manual.

This manual is aimed as a living document and practitioners and policy makers are highly encouraged to provide their feedback, which will be incorporated into next edition.

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Executive Summary

Recognizing the rapidly emerging and serious issue of Waste Electrical and Electronic Equipment (WEEE) or E-waste management, this manual on WEEE/ E-waste has been prepared as a guidance document to support WEEE/ E-waste inventorisatation and assessment of risks involved. The manual has been prepared based on data from secondary sources including publications from scientific journals, reports and web sites.

The manual has been prepared in six chapters. Chapters 1 to 4 provide background information. Chapter 5 provides the guidelines for WEEE/E-waste assessment and Chapter 6 discusses case studies to show the field applications of these guidelines.

The manual is spread over 6 chapters. A basic understanding of the issue of waste management has been provided in the initial chapters. The “Definition” of WEEE/E-waste varies across the continents and countries. These definitions have been discussed to assist policy makers and practitioners to set the boundaries for WEEE/E-waste. Guidance notes are also provided to assist Policy makers/ other stakeholders to assess whether WEEE/E-waste is addressed in the existing environmental/ related legislation of the country. This assessment will assist them to identify the gaps and the regulations where WEEE/E-waste can be addressed or whether there is a need to address it separately.

WEEE/ E-waste is a “tradable commodity” and its “mechanism of trading” are usually described in terms of WEEE/E-waste composition, potential for material recovery, WEEE/E-waste trade value chain (starting from manufacture, production, import, consumption, WEEE/E-waste generation, treatment and disposal), sources of

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