

COMPLETION REPORT

A Comparative Study on E-Waste Management System in Japan and Selected Countries in Greater Mekong Sub-region(GMS)

Dr. Alice Sharp

Associated Professor, Assistant Director for General Administration
School of Bio-Chemical Engineering and Technology
Sirindhorn International Institute of Technology,

Globally, the market of electrical and electronic equipment has developed over the recent years while the life expectancy of these items has turned out to be progressively shorter. Thus, the volume of waste electrical and electronic equipment (WEEE) develops quickly, and is accepted to be a standout amongst the most critical disposal issues of the twenty-first century. The present estimation of E-waste produced every year is 20– 25 million tons and for the most part disposed in the landfill. E-waste is very delicate to handle due to difference in physical and chemical composition from other solid waste. It comprised of both important and hazardous materials that require exceptional taking care of and recycling strategies. However, most developing countries, including GMS countries are facing difficulties in accomplishing environmentally friendly management of E-waste. The common disposal practices of used WEEE in selected GMS countries (Thailand, Vietnam, Cambodia, and Laos) are donating, dumping in the open places, storing at home and selling to the individual collector. Some of these E-wastes are dismantled by hand into valuable iron, copper, aluminum, plastic, electronic circuit boards and so on, these valuable materials are sold off, while the worthless residues, waste liquids, waste oils, and coolant fluorocarbons are illegally disposed. When compared their E-waste management with developed country such as Japan, lesson learnt can be proposed for the development of appropriate E-waste management in these countries. Trips to studied countries were made to interview and conduct field observation of E-waste management practice in each country.

In Japan, it was estimated that 1.7 million tons of WEEE was generated annually. From 2001, the recycling rates in Japan have been increased due to the practice of enforcement of home appliance recycling law. In 2004, Japan Electronics and Information Technology Industries Association (JEITA), assessed that 1.5 million units of utilized PCs were recycled locally, 1.1 million units were reused, and 0.7 million units were reused as junk, which infers that parts are reused or materials are recycled in the local market. Each producer company has established its own collection sites and recycling system. To separate E-waste from being mixed with other municipal waste, Japan has a door-to-door collection system. The transportation cost is paid independently to retailers who pass on the utilized home appliances to the collection or recycling locales, which are assigned by individual apparatuses organization. Manufacturers are obliged to take these from retailers and to implement measures for recycling rate of 50-60% by weight. As mentioned earlier, used computers and used home appliances are managed separately based on its regulations. Therefore, the E-waste recycling system success in Japan is based on social obligation, the discipline of Japanese people and sensibility of an environment.

GMS countries require the proper establishment and implementation of regulations specifically on E-waste like Extended Producer Responsibility (EPR) with specific roles for each participant and the establishment of end-of-life (EoL) product take-back framework for effective E-waste management. Regardless, a bit of the systems should be established on its fiscal sensibility, specific feasibility, eco pleasing and a sensible level of social help for the program. The foreign organizations, the producers and in addition the merchants ought to have full obligation regarding WEEE treatment to enhance the EPR framework and to ensure the common habitat or to protect the natural environment. In addition, in order to promote healthy working environment for workers in informal E-waste dismantling business, an appropriate manual for disassembling of domestic E-waste generated is in urgent need.

Publication of the Results of Research Project:

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

Alice Sharp and Sirada Pookkasorn (2017). The management of waste from Electrical and Electronic Equipment (WEEE) in Bangkok, Thailand. In the proceeding of the 3rd Conference on Public Health in Asia. April 28-29, 2017. Hiroshima, Japan.

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

Alice Sharp and Choni Zangmo (2017). Electronic Waste Management in Selected GMS Countries. Accepted for publication in the GMSARN International Journal.

The paper will appear within 2018.

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)