

E-Waste Recycling System by Global Co-Operation – A Proposal

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Abstract

E-Waste Handling and Management is not only an environmental problem, it also is related to social, economic and health issues. Moreover, Speedy Globalization has made it difficult to control the flow of Information, People and Goods across Border. We propose E-Waste Recycle System which utilizes the Best Available Technology across Border and address the Environmental and health issues by Global Co-operation. The Proposed Recycle System has been selected as one of the Early Bird Projects identified for DMIC (Delhi Mumbai Industrial Corridor) Project. Government of Japan has sponsored the Feasibility Study Project for the proposed Recycle System.

Keywords: E-Waste Recycle, Global Co-operation

1. Background

According to the estimation published by Ministry of Environment and Forest, India, the total quantity of E-Waste produced each year in India which is more than 8 lakhs Metric Ton in 2012. According to some estimation, the quantity of E-Waste has increased 450% in last 7 years and continues to increase. This quantity is increasing more rapidly due to spread of mobile devices. However, only 6% of E-Waste is being recycled currently and out of which 95% is handled by Informal Sector [1].

E-Waste contains many hazardous substances which are highly toxic to health and some of them can contaminate the environment when burned in open field or disposed of in landfill. Also plastics are highly inflammable, the printed wiring board and housings of electronic products contain brominated flame retardants, a number of which are clearly damaging to human health and the environment[2]. Moreover, one of the leading Newspaper of Japan, Asahi Shinbun [Figure 1] [Figure 2], has also published an article in its newspaper regarding the status of E-Waste Recycling in India.



Figure 1



Figure 2

Moreover, it is said that E-Waste is being imported to India in huge quantity by false declaration. This quantity is adding to the already stressed Recycle Infrastructure of India. It is needless to say that it is very difficult to control the flow of information, goods and people due to globalization. Moreover, Environmental Issues can be handled more efficiently by global co-operation using Best Available Technology

2. Concept Proposal

We propose a Recycle System based on Global Co-operation through which recycle of E-Waste can be attained addressing above mentioned Environmental, Social, Economic and Health Issues. Moreover, Our Initial Study shows that the proposed Recycle System is designed to be a good business model as well. The proposed model emphasizes not only on co-operation with the Producers but also on Creating Awareness among the Consumers as well. The Interest from Producers has increased recently due to the latest guideline enforced by Government of India which asks Producers for Expanded Producer Responsibility (EPR)

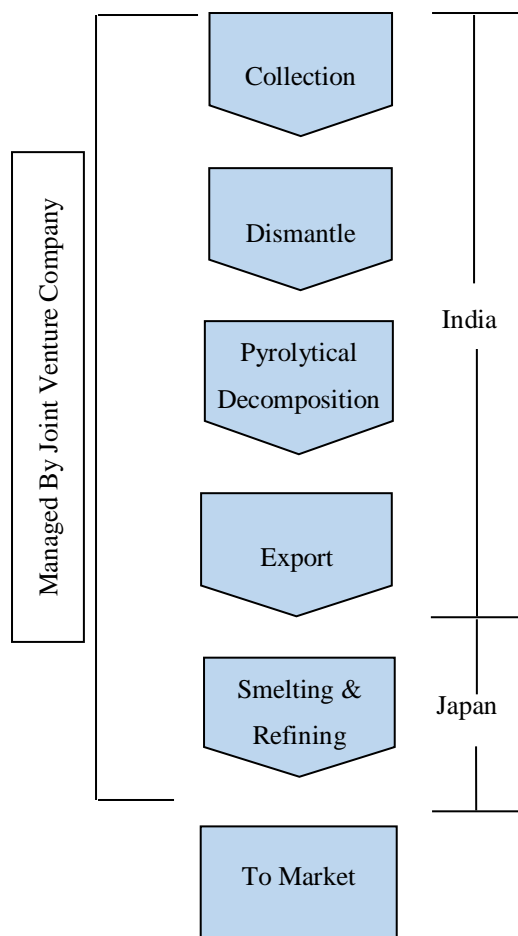


Figure 3 E-Waste Recycle Flow

3. Concept Detail

Figure 3 depicts the process flow which consists Collection, Segregation, Dismantle, Pyrolytical Decomposition, Export, Smelting and Refine to recycle E-Waste. E-Waste will be actively collected through different channels such as by setting up collection center in Schools, Malls, Mobile Telecommunication Company Shops. We also propose to invest in education schemes to create awareness among Consumers and also impart the importance of E-Waste Recycling. After Collection, segregation and dismantle process will be executed in a very controlled way following Guidelines proposed by E-Waste Management and Handling Guidelines enforced by Government of India. Pyrolytical Decomposition plant which complies with Ministry of Environment, Japan's standard will be set up to decompose the Electric Boards. This Plant will decompose the boards thermally to Oil and Residues in environmentally sound way. The produced Oil can be used as a source of energy for different Industries. The Residues will exported to Japan where the State of Art Smelting Technology can be utilized to retrieve the precious metals from the residues with high efficiency. The Feasibility Study shows that this Business Model is economically viable and it also complies with the E-Waste Management Guidelines enforced by Government of India.

We propose to form a Joint Venture Entity with Indian Counterpart which will administer all the processes. The Government of Japan has sponsored the feasibility Study of the proposed Business Model. The proposed Project has been selected as one of the Prospective Projects to be funded from Government of Japan's allocated investment of USD 4.5 billion for DMIC (Delhi Mumbai Industrial Corridor) Project [3].

*1 JEPLAN

Japan Environmental Planning Company Ltd (JEPLAN) is a Recycling Business company based in Japan. It has tied up with Japan's largest mobile telecommunication Company and operates and handles half of the mobile phone recycled in Japan. JEPLAN uses extensive IT Infrastructure to track the whole process flow from Collection to Segregation, Pyrolytical Decomposition and Smelting. JEPLAN wish to introduce their knowhow and introducing the latest Technology to address India's E-Waste Management Issues by co-operating with local entities. JEPLAN proposes to create an eco-system of recycle which is sustainable as well.

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