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Bangladesh's regulatory initiative to deal with electronic-waste (e-waste): The Hazardous Waste Management Rules, 2021

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Commentary

South East Asian Countries including Bangladesh have observed an astonishing growth of use of electronic products (e-products) over the last few decades.[1] These products include television, cell phones, laptops and desktop computers, automated machinery, medical devices, household and industrial appliances, office equipment (printer, fax and photocopy machines), toys for children, and other electronic gadgets. Motorized transport vehicles also use a lot of electronic components. Increased motorization, industrialization, and urbanization of these countries in general along with the availability and affordability of these products and growing popularity of these have increased the use of e-products.

However, in absence of a well-designed and implemented disposal system, e-products are thrown randomly at the end of the lifecycle in many of the South East Asian countries. This inappropriate recycling of electronic waste (e-waste) leads to human exposure to leaching and emissions of many toxic substances.[2] The proper disposal of these items is not now cautiously regulated or monitored now, and e-waste has been thrown into the soil, agricultural land, and water bodies without knowing the negative effects of it on human health, the environment, and the overall ecosystem.[3] E-waste has thereby become one of the largest public health threats in Bangladesh and other South East Asian countries by polluting its soil, water, and air.

Research shows that e-waste contains heavy metals (e.g., Fe, Au, Pb, Hg, Cr, Cu, and Cd), SiO2, polyesters, phenol, formaldehyde, halogenated polymers, N-containing polymers, etc.[4] E-products almost always contain plastic materials, metals-plastic mixtures, tubes, screens, cables, circuit boards, etc. The global e-waste generation was about 54 million metric tons (MMT) in 2019 and will cross 75 MMT by 2030- one report warns. Poor e-waste management during collection, processing, recycling, and resulting in air pollution, water pollution, and soil deterioration has a negative impact on human health.

Bangladesh, a major South East Asian country, produces about 3 MMT of e-waste each year. Its port city Chittagong's shipbreaking yards alone generate more than 25 lakh tons of e-waste a year. To make matters worse, one report mentions that about 80% of e-waste generated in developed countries is sent for recycling and disposal in poor countries. The domestic and overseas load of e-waste is very difficult for a country like Bangladesh to manage. In the upcoming years, the consumption of e-products will increase due to the development and availability of modern technologies in Bangladesh and other South and East Asian Countries.

In Bangladesh, e-waste collection is primarily carried out by the unorganized, informal sector of scrap dealers, traders, or peddlers. Around one-third of E-waste is now recycled in Bangladesh,

with the remainder dumped in landfills, sewers, rivers, ponds, and open areas. The City Corporations and local municipalities have no special guidelines for managing electronic trash. The e-waste is mixed up with other household and biodegradable garbage. A recent survey study in Bangladesh showed people's lack of awareness about and interest in the safe disposal and recycling of e-waste.[5]

In June, 2021, the Hazardous Waste (e-waste) Management Rules, 2021, have been promulgated by the Government of Bangladesh that updated the Bangladesh Environment Conservation Act, 1995. These rules are applicable to electrical and electronic products manufacturing, marketing, buying, selling, export, import, stockade, and laboratory stockade for research, abandonment, repair, processing, and transporting as well as cover the protection of people who are engaged in these activities. The E-waste rule covers products including home appliances, monitoring, and control equipment, automatic machines, IT and communication equipment, and medical equipment), and clarifies obligations for manufacturers, assemblers, collectors, sellers, and consumers of these products.

The rules developed by the government on e-waste will help improve the management of e-waste and may assist in creating systematic storage and recycling of the rising quantity of e-waste in Bangladesh. However, to administer these, the Department of Environment (DoE) must build its capacity by recruiting an adequate number of human resources and ensuring continuous training to build their skill, and competence as well as develop necessary structures. There must be good coordination between DoE and other government wings including law enforcement agencies, the ministry of health, and the ministry of labor and this will help in the routine operations as the field inspection drives depend a lot on the presence and support of law enforcement personnel. To ensure the development of an e-waste management system that is safe and sustainable, DoE must create strong collaboration and partnerships with big electronic manufacturers, local government bodies and city corporations, and other government departments.

Unless designated industrial clusters are created to bring and locate all e-waste recycling firms and service-providing industries or enterprises, DoE in Bangladesh would have enormous challenges in implementing these new sets of government rules.

The disassembly and recycling of electronic equipment is a rapidly growing industry. But there is no e-waste disposal facility in the formal or government sector[6] in the South-East Asian Countries.

Rapid technological advancement, industrialization and automation of business processes, and an increase in usage of information and communications technology both by individuals and businesses, in general, have led to a growth of electronic goods as well as electronic waste in Bangladesh and other South East Asian Countries. Appropriate e-waste disposal has become a serious necessity for protecting public health and the environment in this region where almost one third of the world's population live.

*A slightly different version was published before in *The Financial Express,* Bangladesh.

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