
Extended Producer Responsibility (EPR) in Malaysia – Towards a Sustainable Waste Management System

Hanim Kamaruddin¹, Muhamad Azham Marwan²

¹Faculty of Law, Universiti Kebangsaan Malaysia, UKM 46350 Malaysia

²Messrs Othman Hashim & Co, Kuala Lumpur,

e-mail: hanim@ukm.edu.my, azhammarwan@gmail.com

Abstract

Extended Producer Responsibility (EPR) is a widely used principle that focuses on the responsibility of manufacturers throughout the life-cycle of products taking into account their impacts on the environment for a sound sustainable waste management. The EPR has emerged as a significant tool conceptualized from the polluter pay principle (PPP) to regulate manufacturer's role in controlling or preventing harmful consequences of their products into the environment. In this paper, the main discussion will revolve around the opportunities of establishing an EPR legal system in Malaysia especially in regards to supporting management of solid waste such as plastic. Existing Malaysian related waste management strategies are reviewed to seek opportunities in implementing EPR under the Circular Economy initiatives. The EPR implementation schemes in selected countries will also be highlighted in the context of sustainable waste management.

Keywords: *extended producer responsibility, Malaysia, waste, law, plastic*

1. INTRODUCTION

Extended producer responsibility (EPR) is a powerful tool to develop as part of sustainable waste management. As waste generation have increased in many parts of the world especially from plastics, demand for a cost efficient waste management solution to reduce, reuse and recycle products especially plastic packaging has significantly emerged. The original concept of EPR places emphasis on environmentally compatible product design as a way to minimize wastes at the source (Lindhqvist, 2000). The Organization for Economic Co-operation and Development (OECD) defines EPR as an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle (OECD 2016). EPR has become a preferred policy approach for end-of-life management that may lead to increased recyclability and/or less packaging use, providing additional funds for recycling programs, improving recycling program efficiency resulting in a fairer system of waste management in which individual consumers pay the cost of their own

consumption , rather than general taxpayers (Rogoff,2014). EPR schemes can allow producers to exercise their responsibility either by providing the financial resources required and/or by taking over the operational and organisational aspects of the process from municipalities either individually or collectively (OECD, 2016). EPR policy is also to provide producers with incentives to redesign products and packaging to support waste reduction programs.

Many countries have EPR schemes in place to require manufacturers to be responsible for a product to the post-consumer stage of the product's life cycle in line with waste management policies. However, it remains questionable whether all EPR systems are designed to impose responsibility on all producers (Cyclos GMBH, 2019). Across the European Union (EU), national legislations are formed to put in place EPR schemes for packaging and take back programs including pharmaceutical waste (Woolridge & Hoboy, 2019) to implement the Packaging and Packaging Waste (PPW) Directive (94/62/EC) requiring its member states to develop regulations on the prevention, reuse and recycling of packaging waste. The PPW Directive and the targets set for all member states were updated in 2004 (Directive 2004/12/EC). In addition, the EPR is also provided in three sectoral waste directives that are Directive 200053EC on end-of-life vehicles, Directive 201219EC on waste electrical and electronic equipment (WEEE) and Directive 200666 on batteries and accumulators (Pouikli, 2020). In most EU countries, manufacturers pay some or all of the costs of packaging collection and recycling in the form of producer financing, shared costs, tradeable credits or packaging taxes. In the United States, more than 70 producers' responsibility laws have been promulgated in 32 states including 10 categories of consumer products such as automobile batteries, mobile phones, paint, pesticide containers, carpets, electronics, thermostats and fluorescent lamps (Rogoff, 2014). EPR system in the US appear slightly more inclined to use instruments such as deposit refund and advances disposal fees (ADF) (OECD, 2016). The implementation of EPR in Korea has seen an overall decrease in landfill use by 31% and an increase in recycling rate at almost over 103% since 2003 (Heo & Jung, 2014). The Korea Environment Corporation (KECO) monitors and enforces the Act On The Promotion of Saving and Recycling of Resources on persons who manufactures, processes, imports, sells, consumes materials, products, etc or does construction works. The Act imposes on such persons to control the generation of wastes by recycling or reuse after regeneration or reuse for the purposes of energy recovery. All stakeholders in Korea that include the national government, local government, private waste collectors, producers and importers of EPR products and consumers play a part in achieving recycling targets set for all EPR products such as PET bottle, PVC and plastic container tray.

Similarly, the importance of a strong system in waste management in Australia can be seen in 2009 National Waste Policy and further reinforced in the 2018 National Waste Policy in line with circular economy goals (Commonwealth of Australia, 2018). The implementation of the Commonwealth Product Stewardship Act 2011 provided Australia with the first national approach to voluntary and regulated product stewardship schemes, involves industry taking greater responsibility for the environmental impacts of their products, particularly where they

become waste. The product stewardship scheme is an industry funded recycling services that accepts all televisions, computers and printers peripheral products for recycling. Similar scheme is found in Japan's product stewardship scheme which is the most established, and documentation of the scheme's features and outcomes is extensive (Chong et.al. 2009).

Various EPR experiences from countries implementing EPR schemes have suggested that whilst EPR is a versatile and relevant tool to address waste management issues, weaknesses in existing EPR schemes range from the lack of a harmonized and scope for EPR, the absence of transparent information, limited influence of EPR schemes on eco-design improvement/promotion/incentives, the inadequacy of control/monitoring mechanisms, lack of compliance and poor enforcement of the stakeholders (Pouikli, 2020). The performance of EPR systems may be weakened if the responsibilities of all involved actors and that the overall collaboration within the system functions do not operate well (Cyclos GMBH, 2019).

2. WASTE MANAGEMENT STRATEGIES IN MALAYSIA

Waste management in Malaysia is regulated by the Solid Waste and Public Cleansing Management Act 2007 (Act 627). This Act is governed by the Department of Solid Waste Management in the Ministry of Housing and Local Government to implement municipal solid waste management and public cleansing activities throughout Peninsular Malaysia (Pahang, N. Sembilan, Melaka, Johor, Kedah & Perlis), Federal Territories of Putrajaya and Labuan., The Federal Government of Malaysia has taken over the responsibility of managing municipal waste relieving state local authorities by privatizing services to concession companies. This move is to ensure integrated system and holistic approach for solid waste management is achieved and to resolve issues related to lack of human and financial resources to manage waste. The privatisation exercise is aimed at improving the quality of service, promote efficiency, and provide better facilities and to have an integrated and holistic approach to municipal waste management in Malaysia (Yahaya and Larsen, 2008). The Act 672 provides for the Federal Government to have executive authority with respect to all matters relating to the management of solid waste and public cleansing and have power to enter into any agreement with any person authorizing such person to undertake, manage, operate and carry out any solid waste management services or public cleansing management services. Section 2 defines solid waste as; "Solid waste" includes— (a) any scrap material or other unwanted surplus substance or rejected products arising from the application of any process; (b) any substance required to be disposed of as being broken, worn out, contaminated or otherwise spoiled; or (c) any other material that according to this Act or any other written law is required by the authority to be disposed of, but does not include scheduled wastes as prescribed under the Environmental Quality Act 1974 [Act 127], sewage as defined in the Water Services Industry Act 2006 [Act 655] or radioactive waste as defined in the Atomic Energy Licensing Act 1984 [Act 304]. "Controlled solid waste" means any solid waste falling within any of the following categories: Commercial solid waste, Construction solid waste, Household solid waste, Industrial solid waste, Institutional solid waste imported solid waste, Public solid waste and Solid waste which may be prescribed

from time to time. The Act 672 also defines special solid waste, commercial solid waste, construction solid waste” means any solid waste generated from any construction or demolition activity, including improvement, preparatory, repair or alteration works and industrial solid waste. Section 71 of the Act 672 prohibits any person to deposit, separate, store, keep, collect, transfer, transport, treat or dispose of or cause to be or permit to be deposited, separated, stored, kept, collected, transferred, transported, treated or disposed of any controlled solid waste unless in accordance with the Act. All controlled solid waste shall be deposited, treated, kept, stored or disposed of only at solid waste management facilities licensed under the Act 672. The Act also prohibits unauthorized escape of any controlled solid waste.

The generation of municipal solid wastes is more than 30,000 tonnes per day and is expected to increase to 16.76 million tonnes by year 2020 (Agamuthu & Fauziah 2010). The dominant waste disposal method is landfill where less than 15% of the 146 active landfills are sanitary (The Star, 2019). Many landfills are not properly managed and maintained, and few or none of the landfills have EIA or other site suitability evaluations performed (Innocent et al. 2014). More than 80% of the wastes generated are disposed into landfill in which at present, more than half of the existing landfills has reached its maximum (SWM , 2015, Ghazali et.al, 2014). For 2020, Malaysia targets 40% diversion of waste from landfills by year 2020, however current developments suggest that it will not achieve this goal due to funding gaps and limited manpower (SWM, 2015 & Cyclos GMBH, 2019). Aside landfilling, waste banks were established in 2016 licensed by the local authorities or the Royal Malaysian Police (PDRM). Recycling activities have increased since 2005 although only 22% of 33,000 tonnes of household waste is recycled (SWM, 2015).

Plastic wastes in Malaysia derives from daily consumption and quite significantly, plastic imports from the United States, United Kingdom and Japan. The significant problem of plastic waste pollution has rated Malaysia as one of the worse countries for mismanaged waste plastic pollution in 2018 (MESTECC, 2018). The threats from plastic pollution to the marine biota , for example, has escalated where nearly 0.37 million tons may have been washed into the oceans in Malaysia contributing to the potential health effects of single-use plastics on human and marine life (Jambeck, J.R et al. 2015). Problems to reduce or prevent plastic pollution have alleviated the waste management industry to plan ahead by eliminating the use of single-use plastic by 2030. All the available evidence on environment and human harm caused by plastic pollution have led MESTECC to underline key efforts and initiatives for Malaysia to become a zero single-use plastic country through implementation of Malaysia’s Roadmap Towards Zero Single Use Plastics 2018-2030 (MESTECC, 2018). This Roadmap is prepared to be used as a guide towards zero single-use plastics in Malaysia in a holistic manner where it is expected all relevant stakeholders to jointly resolve issues pertaining to single use plastic pollution especially packaging products. However, it is apparent that there is no uniform approach in Malaysia to address single-use plastics (MESTECC 2018). The Roadmap provides a policy direction to all stakeholders to embrace new eco-friendly alternatives towards adapting products and processes that can address single use plastic pollution. In this regard, the review of existing legislation towards drafting or

revising legal framework on single use plastics was clearly emphasized in the Action Plan of the Roadmap as there is an absence of legislation on single use plastics or wastes in Malaysia. There have been some measures on single use plastic reduction efforts in Malaysia that include straight bag and use of plastic drinking straws ban and bag fee at supermarkets in Selangor, Penang, Melaka and Kedah and recycling efforts. Although Act 627 has been in force in Malaysia to enhance waste management practices but it does not address issue on reduction of single use plastic nor laws to phase out or reduce the production or use of single-use bags or single-use plastics in general. Furthermore, the techniques stated in Act 627 to reduce waste generation are not specified and the options are too generalized (Agamuthu et al. 2009). In such absence of federal legislation or legal framework, state and local governments have sprung to action to fill the void, resulting in a variety of different reduction methods nationwide towards zero single use plastics and its waste management in Malaysia.

The 11th Malaysia Plan (2016-2020) provides the guiding principles for effective and sustainable waste management for the period 2016-2020 by pursuing green growth for sustainability and resilience. A clear direction on the way forward to enhance solid waste management system from developing mindsets in the society, enhancing waste database collection systems to mandate or strengthen one governing body to implement and enforce relevant legislation to ensure optimization and minimization of solid waste in Malaysia. However, several features aiming at a holistic solid waste management that need to be reinforced include (11th Malaysia Plan, 2016-2020):

- i. Governance must be strengthened to form a strong foundation.
- ii. Communications & awareness are vital to create a paradigm shift in mindset.
- iii. Polluter-pay-principle instruments need to be further explored.
- iv. Government must set a good example by implementing GGP.
- v. 3R initiatives require strong inter-Agency coordination and collaboration.

3. MATERIALS AND METHODS

This study draws existing data from primary and secondary sources including legal documents, policy documents, case studies, published and unpublished research articles, books, journals and other environmental structures from other countries on extended producer responsibility and implementation towards a sustainable waste management. Generally, this is a study of primary sources referred to as existing legislation followed by secondary sources of foreign government laws on solid waste management and extended producer responsibility.

4. CONCLUSION

Faced with increasing waste generation from household, business industries and imports of plastic, Malaysia should actively begin to consider a new approach to complement existing conventional methods in waste management. By applying circular economy principles, different ways of utilizing waste where materials are re-cycled in productive use rather than being lost to landfill or escaping to the environment and oceans through irresponsible

disposal should be encouraged. The World Economic Forum's definition of Circular Economy as "an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems, and business models" (Ellen McArthur Foundation, 2013). As consumers are becoming increasingly concerned about the future of our environment, implementing Extended Producer Responsibility schemes across all industries may be imperative to propel us towards a truly circular economy. Based on the principle that manufacturers and brands have the most impactful control over a product's design and marketing, they should also have the greatest responsibility to reduce waste, and therefore lessen the environmental impact of these materials (Oettinger, 2019). In this aspect, EPR has been effective in implementing some aspects of circular economy. However, there needs to be a greater focus on the circular economy to truly create change and eliminate waste where manufacturers need to factor recyclability and end-of-use planning into the initial product design process.

There is currently no existing EPR system in Malaysia although mere mentions or some form of EPR can be found in Environmental Quality Act 1974 and the National Strategic Plan on Solid Waste Management in Malaysia. For an EPR system to be established in Malaysia in line with guiding principles in the 11th Malaysia Plan towards sustainable waste management, several key points must be considered namely:

- i. Formation of a Producer Responsibility Organization (PRO) responsible for the organization of all tasks associated to the proposed EPR system.
- ii. A sustainable regulatory framework on EPR covering for example specific types of goods including packaging products, on deposit system, waste disposal tax and amount of waste to be utilised in production and collection, sorting and recycling targets.
- iii. Clear and definitive roles of stakeholders ranging from manufacturers of packaging material or of packaging, consumer goods companies, distributors, retailers, consumers, waste management operators, government and other public authorities including local municipalities.
- iv. Strengthening of institutional capacities, technical and skilled staff and sufficient financial resources to monitor and control implementation of EPR system.
- v. Enhancement of recycling programmes through sustainable extensive public education and publicity campaign.
- vi. Charging of fees based on the packaging's degree of recyclability.

Several other concerns that need to be clarified in order to formulate an effective acceptable EPR (Extended Producer Responsibility) model under the Malaysia scenario would include cost benefits analysis to identify the actual recycling cost for each category of household E-waste, recycling fee structure and recycling fund management mechanism (Norhazni, 2014).

Basically, good governance of solid waste management systems are affected by the relationship between central and local governments (Abas & Seow, 2014) and requires

participation and collaboration of all relevant parties, including government, Non-Governmental Organizations (NGOs), community groups and the private sector (Konteh, 2009) . Designing an EPR system in Malaysia must be formed on those basis to ensure the flow of EPR is optimized and finally creates a change in behavior and responsibility towards waste management in a sustainable manner.

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