

SUSTAINABLE HOUSEHOLD ELECTRONIC WASTE (E-WASTE) MANAGEMENT IN MALAYSIA FROM A LEGAL PERSPECTIVE

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ABSTRACT

Sustainable solid waste management contributes to three important aspects of sustainable development, namely, the environment, and economics, and social well-being. Electronic waste (also known as e-waste) is a type of household hazardous waste that will contribute to environmental pollution if it is managed unsustainably, as its disposal in landfills will contribute toxic substances to the landfill leachate, which subsequently could adversely affect the environment. Therefore, the purpose of this paper is to analyse the sustainable household e-waste management in Malaysia from a legal perspective by employing library research methodology. The lack of a legislation in respect of household e-waste management is identified as one of the challenges, which has caused difficulty in managing household e-waste. Hence, there is a need to improve the existing legal framework to enhance the sustainable management of household e-waste in Malaysia.

Keywords: *Electronic waste, sustainability, Malaysia, legal perspective*

INTRODUCTION

One of the compositions of solid waste in Malaysia is household hazardous waste. Household hazardous waste could have a significant negative environmental impact as disposal of household hazardous waste to landfill sites will contribute toxic substances to the landfill leachate that is created as a result of rainwater infiltration and waste decomposition (Slack, R. J., 2009).

Household hazardous waste includes toxic waste, biochemical waste and electronic waste (e-waste) (Zaipul Anwar Zainu, 2019). The rapid growth of technology has contributed to the increasing generation of e-waste not just in Malaysia, but worldwide (Mehmood Shad, Yeng Ling, & Karim, 2020). Therefore, there is more e-waste to be managed and disposed of. Among the four ASEAN nations with updated inventories of hazardous waste, Malaysia produced 232 metric kilotons of e-waste and was among the top 3 generators of hazardous waste (UNEP, 2017). It is predicted that by 2025, Malaysia will generate 24.5 million units of e-waste (Department of Environment, 2023). E-waste may be generated in industrial sector and from household. From January to September 2022, it is reported that 2141 tonnes of household e-waste managed to be collected (RTM, 2022).

E-wastes, or waste electrical and electronic equipment, are post-consumption wastes that are a major source of hazardous waste. Although not all e-waste is hazardous, most of it contains poisonous components. Even though some e-waste may not meet the "intrinsic hazard" standard, they can release harmful materials if incorrectly recycled (Yang, 2020).

According to Dinggai, M. S. (2020), e-waste equipment can still be recycled to recover the raw materials in each piece of equipment due to the existence of precious metals. The cost of purchasing raw materials to create new items will also be able to be decreased as a result of this. The environment-harming substances like mercury, lead, and arsenic are still present in some of these materials, despite the fact that some of them include valuable components. Therefore, if these harmful substances are not

effectively controlled, they could leak into the environment, endanger human health, and contaminate the ecosystem.

The Sustainable Development Goals (SDG) are the core agenda for sustainable development in 2030 that were adopted by world leaders at the United Nations Conference on 25 September 2015. The 2030 Agenda for Sustainable Development is an international commitment to more sustainable, resilient, and inclusive development (DOSM, n.d.). Sustainable development has greatly influenced the development of international environmental law. Since the 1980s, when approaches to waste management included the social, economic, and environmental components of sustainability, the sustainable development goal has been one of the crucial factors in setting waste policy (Strange, 2002). Malaysia's assurance to practise sustainable development is embedded in the long-term Outline Perspective Plans and the five-year development plans which have integrated Malaysia's national development policy (Maizatun Mustafa, 2013). This paper focuses on e-waste generated from household. Hence, the aim of this paper is to analyse sustainable household e-waste management in Malaysia from a legal perspective.

Household E-Waste Management: The Relevant Legislations

The main statute is the Environmental Quality Act 1974 (Act 127) and regulations passed under it. Act 127 was enacted in 1974, immediately after the global environmental movement began, to prevent, abate, and control environmental pollution and to demonstrate policymakers' commitment to creating a better and more environmentally healthy world for the benefit of future generations (Shad et al., 2020).

The term "waste" is defined under Section 2 of Act 127 as "to include any matter prescribed to be scheduled waste, or any matter whether in a solid, semi-solid or liquid form, or in the form of gas or vapour which is emitted, discharged or deposited in the environment in such volume, composition or manner as to cause pollution".

Any waste falling under one of the waste categories listed in the First Schedule of the Environmental Quality (Scheduled Wastes) Regulations 2005 is referred to as scheduled waste or hazardous waste (Regulation 2 of the Environmental Quality (Scheduled Wastes) Regulations 2005). According to Section 34B of Act 127, it is unlawful for anyone to place, deposit, or dispose of, or to cause or permit to place, deposit, or dispose of, any scheduled waste on land or into Malaysian waters, except at premises that have been specifically designated for this purpose.

The Environmental Quality (Scheduled Wastes) Regulations 2005, classified e-waste as a scheduled waste under the code SW110, while specific e-waste, such as waste from lead-acid batteries, batteries containing heavy metals, and fluorescent lamps, are coded as SW102, SW103, and SW109, respectively. Due to this categorization, e-waste treatment is regulated and needs to be done at a licensed onsite treatment facility (Shad, K.M., 2020).

Meanwhile, household solid waste is defined under Section 2 of the Solid Waste and Public Cleansing Management Act 2007 (Act 672) to mean "any solid waste generated by a household, and of a kind that is ordinarily generated or produced by any premises when occupied as a dwelling house, and includes garden waste". Act 672 does not define the term "household hazardous solid waste", yet it can be classified as "special solid waste" under the Act. Additionally, any "special solid waste" regulations have yet to be made. Sections 108 of Act 672, among others, provide that regulations may be made for the purpose to prescribe the duty of any person to separate special solid waste and the requirements for storage at any premises.

Hazardous substance management falls within the purview of the Department of Environment (DOE) under the Ministry of Natural Resources, Environment, and Climate Change. Nevertheless, currently, the collection and transport of the household solid waste including household e-waste is under the Solid Waste and Public Cleansing Management Act 2007 (Act 672) which is enforceable in Johor, Kedah, Melaka, Negeri Sembilan, Pahang, Perlis, and the Federal Territories of Kuala Lumpur and

Putrajaya although generally, the management of household hazardous waste including e-waste is under the Department of Environment. For states which enforce Act 672, solid waste management is under the Ministry of Urban Wellbeing, Housing and Local Government, the National Solid Waste Management Department, and the Solid Waste and Public Cleansing Management Corporation (SWCorp). Hence, there is an unclear division of functions with respect to the handling of household hazardous solid waste.

Besides, as emphasized by Department of Environment Malaysia, the amount of e-waste collection is still low (Department of Environment, 2023). The public awareness and education on e-waste management need to be garnered as the public mindset is still to keep e-waste at home or sending them to informal sectors. According to the DOE, one of the difficulties in developing a sustainable system for domestic e-waste disposal in Malaysia is that recyclers are mainly interested in precious materials. Furthermore, due of the dispersed nature of domestic e-waste, collection and transportation are problematic. Recycling and recovery operations are very expensive since they necessitate large investments in machinery, equipment, and environmental protection measures; to some extent, this demand renders recycling and recovery methods commercially unviable (Shad, K.M. et al., 2020).

Unlike e-waste from industrial sector which already has a proper management procedure, the management of e-waste from household is uncertain (Osman, 2016). Therefore, as it is not well organised, household e-waste is less collected, or being merely disposed to second hand dealer or thrown as normal waste.

It is also reported that e-waste produced from non-industrial sectors especially houses such as televisions, air conditioners, washing machines, refrigerators and among others yet properly regulated under existing regulations which results in the majority of e-waste being disposed of in an inappropriate way in unofficial means (Department of Environment Malaysia, 2015). As a result, most electrical and electronic goods from residential areas end up on the site of waste disposal is the same as other domestic waste (George, F. et al., 2018). According to George, F. (2018), so far there has not been a special regulation or law regarding e-waste. So, it is not surprising if this matter still does not find a place in the general society until now.

Furthermore, the lack of a formal sector in managing e-waste causes private companies to actively grow in Malaysia to make a profit from the sale of e-waste (Dinggai, M.S. et al., 2020). Hence, the poor management of e-waste will certainly create negative implications for the environment and humans because e-waste contains six dangerous heavy metals such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl. It is noteworthy that European countries have strictly prevented manufacturers from using these six hazardous substances in the manufacture of electronics through the Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (George, F. et al., 2018).

CONCLUSION

There is a lack of legislation to regulate the management of household e-waste, which contributes to poor e-waste management in Malaysia. Looking at the adverse impact that household hazardous solid waste may have on the environment and subsequently on public health, which is against sustainability, it is important that clear legislation to manage this kind of waste is expressly provided to support effective management of household e-waste. Besides, there should be proper coordination among relevant authorities such as SWCorp, the concession companies, and the Department of Environment under the Ministry of Natural Resources, Environment and Climate Change in managing household e-waste. There is also a need for rigorous mechanisms to increase the awareness of waste generators (the public) about sustainable e-waste management practices in order to mitigate the environmental impacts caused by ineffective management of e-waste.

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REFERENCES

- Department of Environment. (1 March 2023). E-waste Management in Malaysia. Retrieved from ewaste.doe.gov.my: <https://ewaste.doe.gov.my/index.php/infographic/>
- Department of Environment. (1 March 2023). E-Waste Management in Malaysia. Retrieved from What is e-waste?: <https://ewaste.doe.gov.my/index.php/what-is-e-waste/>
- Department of Statistics Malaysia Official Portal (DOSM). (n. d.). Introduction - Sustainable Development Goals. Retrieved from https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=UFkzK2xjRE04OVVRKzhOeXd6UWk2UT09
- Dinggai, M. S., Mapa, M. T., & George, F. (2020). Persepsi Masyarakat Tempatan Terhadap Pengurusan E-sisa oleh Syarikat Swasta di Bandaraya Kota Kinabalu, Sabah. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 5(10), 217-227.
- George, F., Mapa, M. T., Potirik, E. E. S., & Dinggai, M. S. A. (2018). Pengurusan sisa elektrik dan elektronik (E-Sisa) dalam kalangan isi rumah: kajian kes Wilayah Persekutuan Labuan. *GEOGRAFI*, 6(2), 57-66
- Maizatun Mustafa. 2013. *Environmental Law in Malaysia*. Second Edition. The Netherlands: Kluwer Law International.
- Mehmood Shad, K., Yen Ling, S., & Karim, M. (2020). Sustainable E-Waste Management in Malaysia: Lessons from Selected Countries. *IJUM Law Journal*, 28(2), 415-447.
- Osman, N. (2016). Handling E-Waste in Malaysia: Management, Policies and Strategies. *The Eleventh International Conference on Waste Management and Technology*. Beijing, China.
- RTM. (2022, October 16). *Berita RTM*. Retrieved from [berita.rtm.gov.my: https://berita.rtm.gov.my/index.php/semasa/48985-200-pusat-pengumpulan-e-waste-lupus-dengan-kaedah-betul-dan-mesra-alam](https://berita.rtm.gov.my/index.php/semasa/48985-200-pusat-pengumpulan-e-waste-lupus-dengan-kaedah-betul-dan-mesra-alam)
- Shad, K. M., Ling, S. T. Y., & Karim, M. E. (2020). Comparative Study on E-Waste Management and the Role of the Basel Convention in Malaysia, Singapore, and Indonesia: A Way Forward. *Indon. L. Rev.*, 10, 63.
- Slack, R. J., Gronow, J. R. & Voulvoulis, N. 2009. The Management of Household Hazardous Waste in the United Kingdom. *Journal of Environmental Management* 90(1): 36-42.
- Strange, K. 2002. Overview of Waste Management Options: Their Efficacy and Acceptability. In: R.E. Hester & Harrison, R. M. (ed.). *Environmental and Health Impact of Solid Waste Management Activities: Issues in Environmental Science and Technology*, No. 18. United Kingdom: The Royal Society of Chemistry.

United Nations Environment Programme (UNEP). (2017). Waste Management in ASEAN Countries: Summary Report. UN Environment Programme. <https://www.unep.org/resources/report/waste-management-asean-countriessummary-report>

Yang, S. (2020). Trade for the environment: transboundary hazardous waste movements after the Basel Convention. *Review of Policy Research*, 37(5), 713-738.

Zaipul Anwar Zainu. (2019). Development of Policy and Regulations for Hazardous Waste Management in Malaysia. *JOSTIP*, 5 (2): 63-71.