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Enablers for Effective EPR in the Asia-Pacific Region

Lessons from developed and developing countries in the EU and Asia

MALAYSIA

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The SWITCH-Asia Programme

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ABBREVIATIONS

12MP	12th Malaysia Plan
3R	Reuse, Reduce, Recycle
AGC	Attorney General Chambers of Malaysia
AP	Approved permit
CE	Circular economy
CEB	Circular Economy Blueprint for Solid Waste
CEF	Circular Economy Framework for the Manufacturing Industry
CEPA	Communication, education and public awareness
CFR	Collected-for-recycling
DANCED	Danish Cooperation for Environment and Development
DOE	Department of Environment
DOSM	Department of Statistics Malaysia (DOSM)
EE	Electrical & electronic
EPR	Extended producer responsibility
EPU	Economy Planning Unit
FMCG	Fast-moving consumer goods
GDP	Gross domestic product
GGP	Government green procurement
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICI	Industrial, commercial and institutional
JICA	Japan International Cooperation Agency
MAREA	Malaysian Recycling Alliance (MAREA)
MCAJ	Municipal Council of Ampang Jaya
KPIs	Key performance indicators
KPKT	Ministry of Housing and Local Government
MITI	Ministry of International Trade and Investment
MTDCL	Ministry of Domestic Trade and Cost of Living
MOE	Ministry of Economy
MSW	Municipal Solid Waste
NCEA	National Circular Economy Association
NCEC	National Circular Economy Council
NIMP 2030	National Industrial Master Plan 2030
NGO	Non-governmental organisations
NREB	Natural Resources and Environment Board of Sarawak
NRES	Ministry of Natural Resources and Environmental Sustainability
NSWMD	National Solid Waste Management Department
PAYT	Pay-as-you-throw
PC	Public cleansing
PRO	Producer Responsibility Organisation
PSC	Policy Support Component

RFMB	Recycling fund management body
RM	Malaysian ringgit, the currency of Malaysia
rPET	Recycled polyethylene terephthalate
SAS	Separation at source
SC	Securities Commission of Malaysia
SCP	Sustainable Consumption and Production
SDN BHD	A private limited company in Malaysia
SIRIM	Standard and Industrial Research Institute of Malaysia
SME	Small and medium-sized enterprises
SRI	Sustainable and responsible investment
SRM	Secondary resource materials
SUP	Single-use plastic
SWCorp	Solid Waste and Public Cleansing Management Corporation
SWM	Solid waste management
TA	Technical Advisory
UBC	Used beverage cartons
WEP	Waste-Eco-Park
WTE	Waste-to-energy

1. EXECUTIVE SUMMARY

1.1. Introduction

This Country Report was developed under the SWITCH-Asia Policy Support Component (PSC) to assess the enabling factors and policy frameworks necessary for implementing effective Extended Producer Responsibility (EPR) with respect to solid waste management and recycling in Malaysia, with the broader aim of advancing the circular economy (CE). This report forms part of a regional initiative under the European Union-funded SWITCH-Asia Policy Support Component (PSC) that aims to accelerate the transition to sustainable consumption and production (SCP) in Asia. Malaysia is one of five focus countries in this regional study.

This Malaysian Country Report seeks to:

- Identify country-specific enablers and barriers for EPR implementation
- Review existing policy along with institutional and regulatory frameworks
- Assess market conditions for secondary resource materials (SRM)
- Capture stakeholder perspectives and implementation challenges
- Provide actionable policy recommendations for national uptake

1.2. Review of EPR enabling factors for Malaysia

The current waste management landscape

Malaysia's solid waste management (SWM) system remains largely linear, relying heavily on landfill for waste disposal (mostly open dumpsites), and with limited waste separation and minimal resource recovery. Key challenges include:

- Huge quantities of waste are landfilled, including potential recyclables
- Recycling infrastructure is fragmented and under-utilised
- The informal sector has a huge presence in collecting recyclables, with limited oversight

1.2.1. Legislation and institutional capacity

Under the Solid Waste and Public Cleansing Management Act 2007 (Act 672), solid waste and public cleansing services in select 'Act States' are governed by the Ministry of Housing and Local Government (KPKT), while other states retain local regulatory control, leading to inconsistent implementation throughout the country. However, Malaysia does separately regulate solid waste as distinct from hazardous waste. The Environmental Quality Act 1974 governs hazardous waste, including e-waste, under the Department of Environment (DOE), which is under the Ministry of Natural Resources and Environmental Sustainability (NRES). Currently, EPR-specific legislation is absent. The fragmented jurisdiction and lack of harmonised legislation hinder nationwide implementation of EPR.

1.2.2. Stakeholder perceptions and market challenges

Public and industry engagement

Based on a previous study, titled *Survey on Solid Waste Composition, Characteristics & Existing Practice of Solid Waste Recycling in Malaysia*[1], conducted by the National Solid Waste Management Department (NSWMD), which is under the Ministry of Housing and Local Government (KPKT) in 2012, an exploration of the perceptions and practices of both households and industries was conducted regarding waste

1 *Survey on Solid Waste Composition, Characteristics & Existing Practice of Solid Waste Recycling in Malaysia: Main Report*, https://jpspn.kpkt.gov.my/jpspn/resources/Images%20JPSPN/Sumber%20Rujukan/Kajian/Final_Report_REVz.pdf

minimisation and recycling. The survey revealed mixed household participation in recycling, influenced by convenience, awareness, and incentives. Industry engagement was similarly varied, and was driven primarily by cost-benefit analysis rather than environmental mandates. Willingness to pay for improved recycling services remains limited.

1.2.3. Market for secondary resource materials (SRM)

The SRM market in Malaysia is underdeveloped, particularly for low-value and hard-to-recycle materials (e.g. glass, multi-layer plastics). Key barriers include:

- Price competitiveness compared to virgin materials
- Quality and quantity inconsistency in local feedstock
- Absence of mandatory recycled content regulations
- Heavy reliance on imported recyclable materials

1.3. Current and proposed EPR implementation

1.3.1. EPR progress and pilot projects

Malaysia does not yet have a mandatory EPR framework, but several voluntary and pilot initiatives have emerged, as follows:

- **DOE-JICA Projects (Phases 1–3)** have developed collection systems, funding mechanisms, and recovery infrastructure for e-waste
- **Natural Resources and Environment Board Sarawak (NREB) Used Tyre Project (Sarawak)**, has imposed levy and recycling subsidy for used tyres; project is backed by specific regulations
- **MAREA (Malaysian Recycling Alliance)** is an industry-led PRO piloting EPR readiness and studies among FMCG companies
- **Tan Boon Ming E-Waste Collection** is a corporate initiative for electronics recycling in collaboration with DOE

1.3.2. Policy instruments supporting circular economy (CE) and EPR

Malaysia's policy landscape is evolving to include CE and EPR principles, particularly subsequent to the 12th Malaysia Plan (12MP). Key frameworks include:

- **National Cleanliness Policy (2020–2030)**, including strategic action plans for 3Rs, CE, and EPR promotion
- **Malaysia Plastics Sustainability Roadmap (2021–2030)** is being led by NRES, and it targets 15% recycled content for plastic packaging and mandatory EPR by 2026 for the packaging sector followed by the electrical & electronics, construction and automotive sectors
- **Circular Economy Framework for Manufacturing (2024–2030)** is being directed by by MITI; it focuses on CE in the manufacturing sector and the gradual transition to mandatory EPR, including recycled content mandates
- **Circular Economy Blueprint for Solid Waste (2025–2035)** is being led by KPKT and is introducing CE transition plans, including EPR

Currently, proposed legislative instruments in development include:

- **Circular Economy Bill (KPKT, MITI, NRES):** Planned to harmonise fragmented legislation across Act and Non-Act States, and envisioned as an umbrella act for CE/EPR laws
- **E-Waste Disposal Regulations (NRES/DOE):** Applies EPR to household e-waste and also non-industrial (commercial & institutional), and finally, the regulations are in progress, awaiting further amendment

1.4. Assessment of enabling factors and way forward

1.4.1 Key Enablers and gaps

The assessment highlights both progress and persisting gaps.

Strengths

- Strong political commitment under national plans and policies
- Growing cross-ministerial collaboration (KPKT, NRES, MITI)
- Existing pilot projects provide a basis for scale-up
- Formation of the National Circular Economy Council (NCEC) and upcoming National Circular Economy Association (NCEA) to coordinate public-private actions

Challenges

- Absence of national EPR-specific legislation and enforcement structure
- Absence of economic instruments (e.g. recycled content mandates or pricing incentive for SRM)
- Disjointed data collection and tracking mechanisms/systems
- Limited industry readiness and consumer awareness

1.5. Recommended way forward

To transition from pilot to full-scale implementation, the report recommends the following actions.

1. **Legal and institutional frameworks**
   - Enact the proposed Circular Economy Bill
   - Harmonise laws across Act and Non-Act States
   - Establish a national regulatory body for EPR oversight
2. **Economic instruments and market development**
   - Introduce mandatory EPR schemes starting with high-impact sectors (e-waste, packaging, plastics)
   - Improve feedstock quality via better source separation and infrastructure
   - Establish minimum recycled content requirements and eco-design standards
   - Develop financial mechanisms such as producer fees, deposit-refund systems, and recycling fund management
3. **Stakeholder coordination**
   - Formalise Producer Responsibility Organisations (PROs) with clear roles
   - Include the informal waste-collection sector
   - Strengthen the National Circular Economy Council (NCEC) and the proposed National Circular Economy Association (NCEA) for better public-private collaboration
4. **Capacity building and data systems**
   - Improve data collection and transparency
   - Standardise reporting requirements across stakeholders
   - Integrate CE and EPR indicators into national development KPIs
   - Increase public awareness through CEPA campaigns
   - Invest in infrastructure and technology for material recovery

1.6. Conclusion

Malaysia stands at a critical juncture in transitioning from a linear waste system to a circular economy. The success of EPR implementation will depend on harmonised legislation, institutional coordination, stakeholder engagement, and market readiness. The momentum built by policy frameworks and voluntary initiatives must now translate into enforceable action to realise sustainable and inclusive EPR implementation with a focus on circular economy. The recommendations in this report aim to inform national strategy and regional dialogue, contributing to a robust, scalable EPR system that will drive sustainability, innovation, and economic resilience.

2. INTRODUCTION

2.1. Background

The SWITCH-Asia Policy Support Component (PSC) is a programme funded by the European Union (EU) that aims to promote sustainable consumption and production (SCP) in the Asia-Pacific region. The PSC provides technical assistance, policy advice, and capacity building to help countries adopt SCP practices and align with international commitments like the Paris Agreement and the Sustainable Development Goals (SDGs).

Under the SWITCH-Asia PSC programme, the Technical Advisory Project titled 'Identifying Enablers for Effective Extended Producer Responsibility (EPR) systems in Asia-Pacific Region: Drawing Lessons from Developed and Developing Countries in the EU and Asia' focuses on EPR systems to hold producers accountable for the environmental impact of their products throughout their lifecycle. The Project aims to examine the success factors, enablers, and appropriate conditions for fostering robust EPR, and to draw lessons and formulate policy recommendations from them so as to enhance and promote effective EPR systems in the Asia-Pacific region.

Selected countries in the Asia-Pacific and Central Asia regions have been selected as target countries for technical assistance from SWITCH-Asia, namely Malaysia, Philippines, Thailand, Kazakhstan and Pakistan. The Project also involves creating a national overview document on the success factors and enablers to ensure effective EPR implementation and material circularity, drawing up a list of relevant EPR initiatives and stakeholders, and formulating recommendations as well as the potential ways forward. These efforts are compiled into short national reports and policy briefs to guide policymakers and stakeholders in advancing effective EPR systems.

This national overview document serves as the country report for Malaysia.

2.2. Objectives of the Country Report

The Technical Advisory Project aims to understand the key conditions for implementing EPR frameworks effectively. The project will also create policy recommendations for the Asia-Pacific region, leveraging lessons learned from both the EU and Asia.

The following are the objectives of the Malaysia country report.

1. **Understand key conditions:** It is essential to identify the necessary conditions for effective EPR implementation, which may differ across countries.
2. **Be aware of country-specific challenges**: Recognise that the country faces unique challenges and progress stages in EPR implementation.
3. **Notice success and enabling factors**: Determine country's success factors, enablers and material circularity for EPR implementation.
4. **Generate a policy framework**: Develop actionable policy recommendations to enhance EPR systems in the country and in the Asia Pacific region.
5. **Provide a benchmark for other countries**: Use the findings as benchmarks for other countries in the region to advance their EPR systems based on different conditions and progress levels.

3. STUDY AREA

Malaysia is a country comprised of 13 states and 3 federal territories, covering a total land area of 330,000 km². Historically dependent on agriculture and primary commodities, Malaysia has evolved into a diversified, export-driven economy, primarily supported by the manufacturing and services sectors. In 2023, the Department of Statistics Malaysia (DOSM) reported the country's GDP value at RM 1,568.0 billion in constant 2015 prices. The manufacturing sector, which plays a vital role in the global supply chain, accounts for approximately 23% of the GDP, while domestic activities are well represented by the services sector, which has grown significantly over the past two decades, contributing around 59% of GDP. This sector also represents the largest portion of household spending, covering expenses related to food, education, transportation, and healthcare.

According to figures released by the Department of Statistics Malaysia (DOSM)[2], the population in 2023 is 33.4 million, an increase from 32.4 million in 2020. Preliminary estimates suggest that the population will reach 34.1 million in 2024. Hence, assuming the overall solid waste generation from Households (HH) and Industrial, Commercial, and Institutional (ICI) in Malaysia is 1.17 kg/person/day[3] (of which HH = 0.76 kg/person/day and ICI = 0.41 kg/person/day) according to the findings from the *Survey on Solid Waste Composition, Characteristics & Existing Practice of Recycling in Malaysia* undertaken by the National Solid Waste Management Department (NSWMD) in 2012, Malaysia is estimated to generate around 14.6 million tonnes of solid waste annually in 2024.

In terms of household waste composition in Malaysia, food waste is the largest component (44.5%) of household waste, followed by plastic waste (13.2%), disposable diapers (12.1%) and paper (8.5%); see Figure 1.

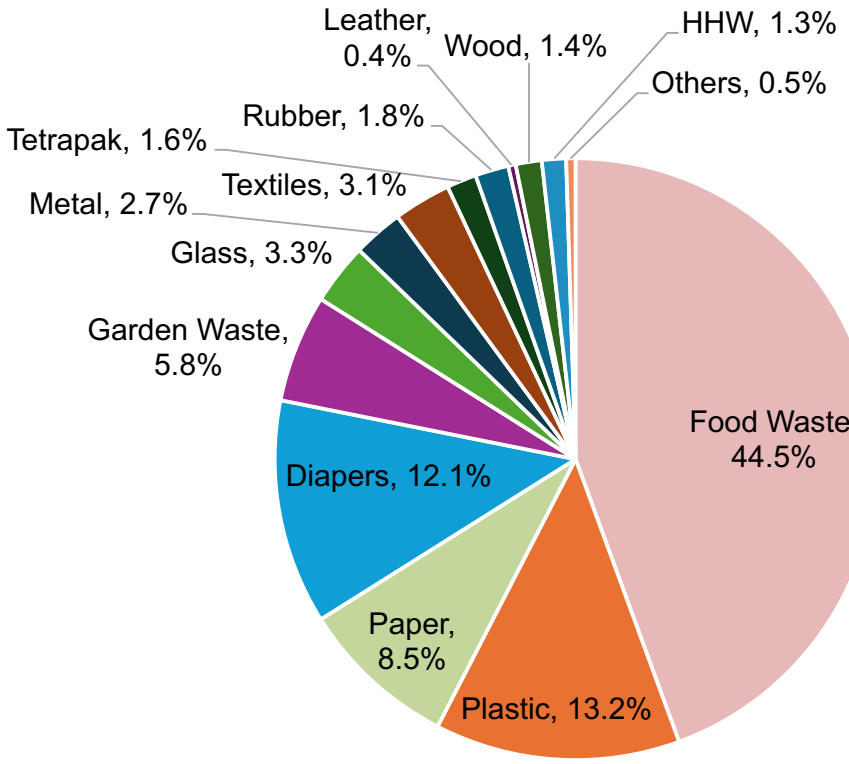


Figure 1. Malaysian household waste composition (as generated)

Notes: Wood = Wood + Peel/Husk; HHW = Household Hazardous waste

2 Current Population Estimates, Malaysia, 2020–2024, https://www.dosm.gov.my/portal-main/release-content/current-population-estimates-2024

3 https://jpspn.kpkt.gov.my/jpspn/resources/Images%20JPSPN/Sumber%20Rujukan/Kajian/Final_Report_REVz.pdf

4. REVIEW OF ENABLING FACTORS FOR EPR IN MALAYSIA

4.1. Baseline national waste management situation

4.1.1. Existing waste management system

In Malaysia, solid waste is categorised, regulated and managed as either hazardous or non-hazardous waste. Each category is regulated and supervised distinctly by different ministries and government agencies or departments. Hazardous waste (both solid and liquid) is defined as any waste under the categories of waste listed in the First Schedule of the Environment Quality (Scheduled Waste) Regulations 2005, thus also referred to as 'scheduled waste'. On the other hand, non-hazardous or non-scheduled waste generally refers to municipal solid waste (MSW), which includes solid waste from households, businesses, institutions, and industrial entities (except for hazardous waste). Hazardous or scheduled waste is managed separately from MSW, and a clear guideline on handling and transporting waste is followed.

The solid waste management system in Malaysia generally follows a linear economy model. However, recent policies such as the Circular Economy Blueprint for Solid Waste in Malaysia 2025–2035 (see Figure 2), and the Circular Economy Policy Framework for the Manufacturing Sector in Malaysia, following the 12th National Plan, show that the country is strengthening its commitments to transform from the conventional linear economy to a sustainable circular economy (CE) in order to address persistent issues such as unsustainable consumption and production practices as well as environmental degradation.

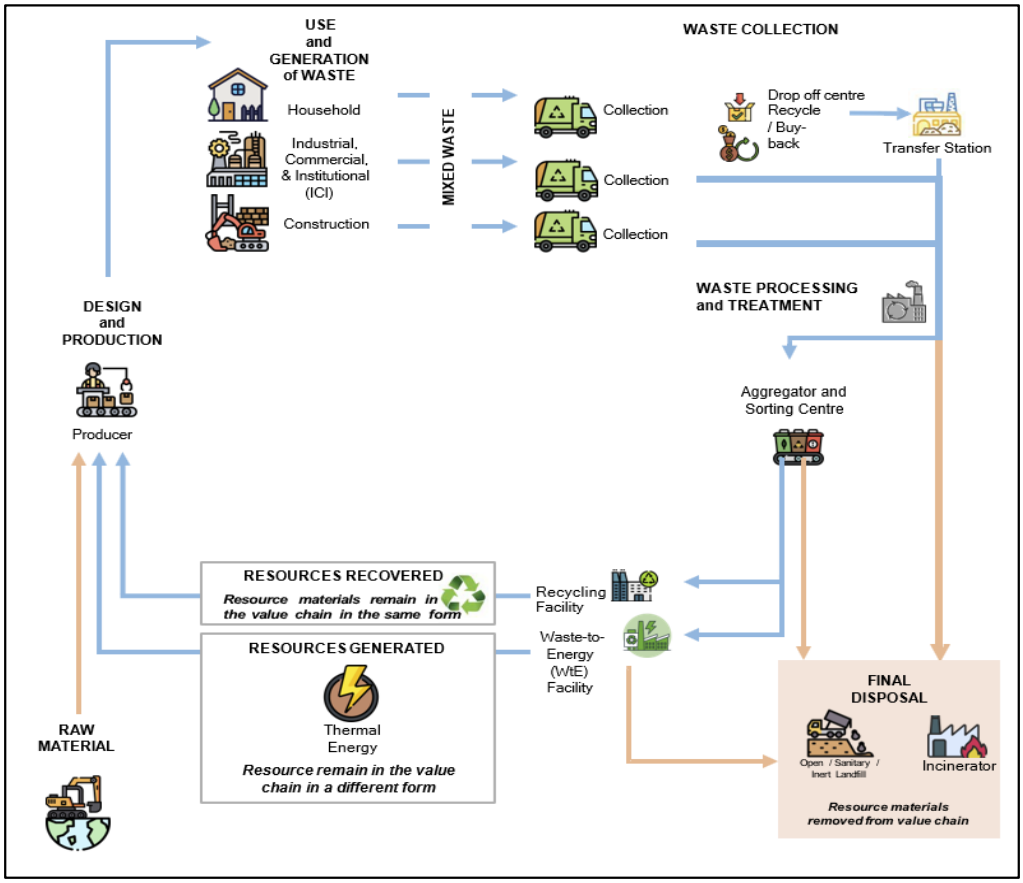


Figure 2. Current linear solid waste management system translated from the Circular Economy Blueprint for Solid Waste (CEB)

In general, MSW was collected from three sources: households; construction; and the industrial, commercial and institutional (ICI) sectors. MSW went either to waste disposal or to the recycling industry. However, within the current context, a huge portion of generated waste is being sent to landfill (mostly dumpsites), including potentially recyclable materials, resulting in significant economic losses in the value chain. Solid

waste that does not reach waste disposal facilities may also end up at illegal dumping sites, or be burned or buried.

Figure 3. Typical municipal waste disposal sites in Malaysia

The formal collection system for MSW is carried out mainly by concessionaires or local authorities. However, the coverage may not be comprehensive due to only limited areas being covered by waste collection schemes, road accessibility, costs, and so on.

The key disposal method for MSW in Malaysia is landfill (mostly dumpsites; see Figure 3). Only a few of the landfills are properly engineered sanitary operations, while the remainder are open dumping sites with hardly any pollution control in place. Currently, there is one operational waste-to energy (WTE) plant in Negeri Sembilan (Cypark's WTE at Ladang Tanah Merah, Port Dickson). Proposals do exist for establishing large-scale WTE plants in several large cities such as Kuala Lumpur, Seremban, and Melaka. According to the Statistik KPKT 2023 (JPSPN), Malaysia currently has 114 non-sanitary landfills, 22 sanitary landfills, 5 inert landfills, 4 small-scale incinerators located on islands, and 1 WTE plant.[4]

Overall, recycling infrastructure is neither well established nor widely available. There are some existing recycling facilities such as recycling bins; drop-off, buy-back, and drive-through centres; and very few integrated recycling centres; see Figures 4–7.

Recyclable waste collection in Malaysia is driven mainly by the informal sector, with street-pickers, waste cleaners, recycling collectors and agents from larger recycling aggregators all participating in waste collection, and only the materials with recycling value are being collected, for the most part: paper (black and white, mixed), metal (aluminium, copper, iron), and certain types of valuable plastics such as polyethylene terephthalate (PET) and high-density polyethylene (HDPE).

Low-value and hard-to-recycle material such as composite plastics, multilayers, and laminates are neither sorted nor recycled. Malaysia's current overall recycling rate was reported to be 35% in 2023[5], and the Federal government has set a target recycling rate of 40% for 2025 (in the 12th Malaysia Plan prepared by the government's Economic Planning Unit).

4 https://www.kpkt.gov.my/kpkt/resources/user_1/GALERI/PDF_PENERBITAN/PERANGKAAN%20TERPILIH/STATISTIK_KPKT_2023.pdf

5 https://www.nst.com.my/news/nation/2024/08/1087512/malaysia-sets-sights-40pct-recycling-rate-major-retailer-talks

Figure 4. Recyclable drop-off at residential area

Figure 6. Recycling and buy-back centre in Putrajaya

Figure 5. Recycling bins at institutions

Figure 7. Drive-thru recycling centre in Melaka and Kedah

4.1.2. Existing solid-waste management (SWM) regulations and acts

Municipal solid waste (MSW) management in Malaysia has traditionally been regulated under Local Government Act 1976 (Act 171), in which the solid waste management (SWM) system (collection, treatment, and disposal of solid waste) in each state is administered by the local councils. Under Act 171, the SWM system is either managed or regulated by the local council itself or by an appointed private agency or concessionaire.

One of the key challenges faced by the local councils is the lack of financial and technical resources to implement modern SWM treatment and disposal facilities. In response to this major issue, the Federal Government of Malaysia decided in 2007 to centralise and transfer the regulation of SWM from state governments and local councils to the Ministry of Local Government and Housing (KPKT) under the Solid Waste and Public Cleansing Management Act 2007 (Act 672), with the exception of the States of Sabah and Sarawak, which have the autonomy to regulate their own SWM. Act 672 empowers the Federal Government of Malaysia to take over the management of solid waste (including collecting, treating and disposing of solid waste) from state governments and local councils to ensure uniformity in applying the law relating to the management and regulation of solid waste and public cleansing in Malaysia.

However, not all states in Malaysia are included in Act 672, and they are separated into 'Act States & Federal Territories' and 'Non-Act States'. Currently in Malaysia this means that Solid Waste Management in 'Act States' is managed under the Federal Government, whereas the 'Non-Act States' in Peninsular Malaysia remain regulated by the Local Government Act 1976. In contrast, Sabah and Sarawak are regulated by their own local laws and regulations, namely the Solid Waste and Public Cleansing Management Enactment 2022 (No. 3 of 2022) in Sabah and the Local Authority Ordinance 1996 (Chapter 20) in Sarawak.

The 'Act States & Federal Territories' include Perlis, Kedah, Pahang, Negeri Sembilan, Malacca, Johor, Kuala Lumpur and Putrajaya. On 6 February 2025, MLHG's Minister Nga Kor Ming announced that the Cabinet of Malaysia had given in-principle approval for Selangor and Penang state to adopt Act 672, making them the latest states to implement the law. According to Minister Nga Kor Ming, the Cabinet encourages other

states to follow suit as well to improve the quality of public cleansing services nationwide.[6] Following Act 672, the solid waste management in Act States is subject to several key policy enforcements, which include but are not limited to the following:

- the collection of waste following the 2+1 rule (twice a week for solid waste and food and organic waste, once a week for recyclables, bulky and garden waste)
- waste segregation from source (Separation at Source - SAS) for recyclables, residual waste and bulky/ garden waste
- requirement for licensing for recycling agent and public cleaning services

In addition, distribution of free wheelie bins to household (residential) and similar areas (businesses and institutions along the waste collection scheme route in the area), new waste collection vehicles, and a scheduled solid waste collection are some of the efforts mandated to ensure the applicability and progression of the Act.

In the 2+1 rule of Act 672, households and entities similar to households are required to place their generated solid waste in waste bins for kerbside collection and segregation prior to the collection and transportation of waste to either recovery sites for secondary sorting of recyclables, or to a landfill/incineration or waste-to-energy sites for disposal. Meanwhile under the Solid Waste and Public Cleansing Management (Scheme for Commercial, Industry and Institutional solid waste) regulations 2018, ICI premises are required to dispose of solid waste generated by their activities or processes on their own or using private contractors. Under Act 672, the government makes it mandatory for residential households to separate their waste at source into recyclable waste, residual waste, and bulky or garden waste. These mandates are to be enforced under the Separation at Source (SAS) Regulation introduced in September 2015. The types of recyclable waste that need to be grouped together are paper; plastics; and all other others, which include glass/ceramics, metal/steel/aluminium cans, electronic waste/small electronic appliances, leather/rubber/shoes/fabrics, hazardous waste, bulky waste, and garden/farm waste. To date, SAS implementation has not been highly successful because of lack of enforcement as well as the lack of a proper recycling supply-chain ecosystem execution.

For 'Non-act States'; which include Perak, Penang, Selangor, Kelantan, Terengganu, Sabah and Sarawak, the waste management system may be similar to the Act States depending on the management system employed by the local council. However, major differences that can be observed is that Non-act States do not have to conform to mandatory waste segregation (Separation at Source – SAS) enforced in Act States effective 1st September 2015 and is up to the state government and local council's discretion.

For hazardous or scheduled waste, it is regulated according to the Environmental Quality (Scheduled Wastes) Regulations 2005 enacted under the Environmental Quality Act 1974 (Act 127). This applies to all states and is managed by the Federal government (under the Department of Environment (DOE), Ministry of Natural Resources and Environmental Sustainability (NRES)).

Currently there is no existing legislation established for EPR in Malaysia.

6 https://theedgemalaysia.com/node/743551

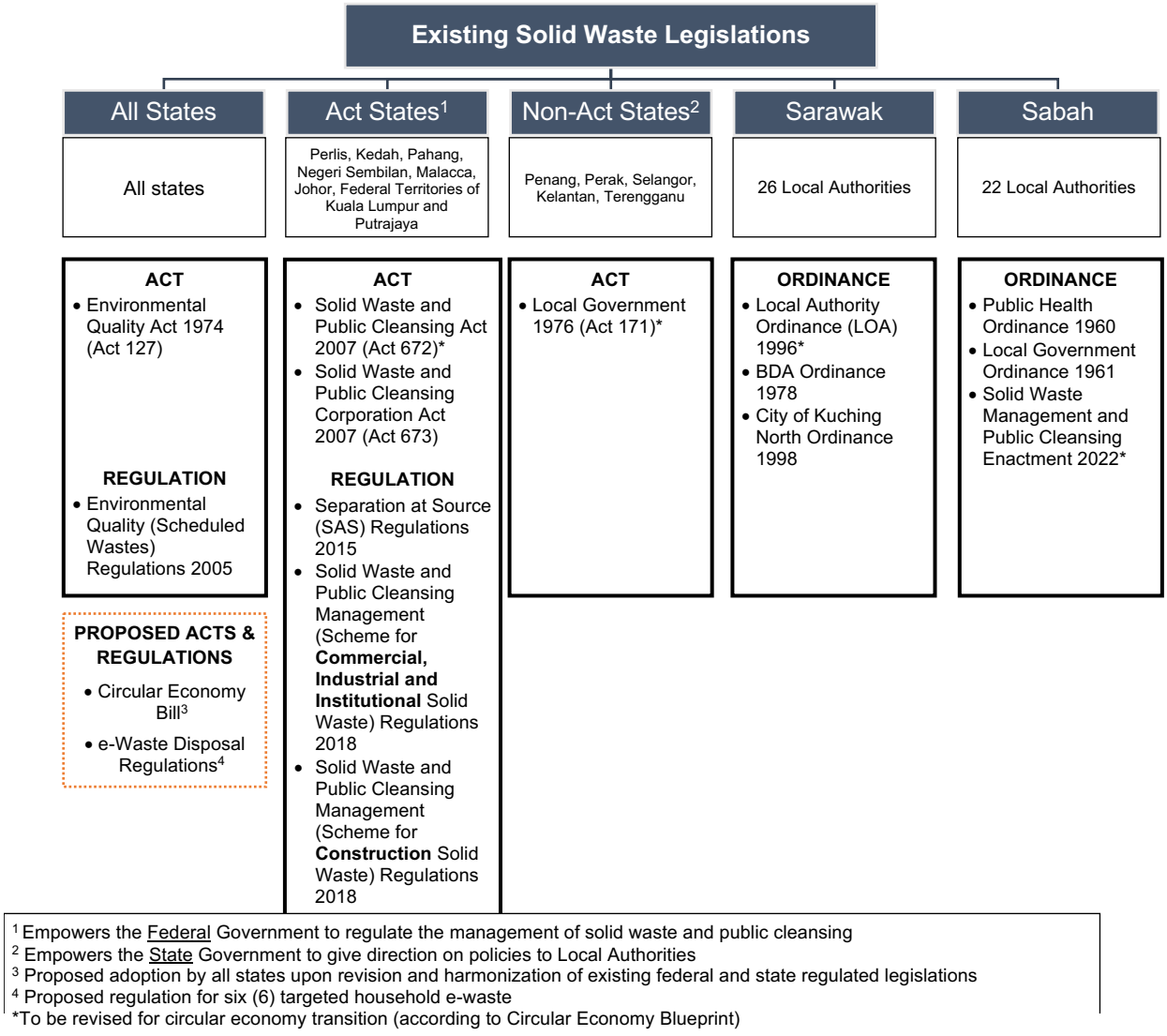


Figure 8. Existing SWM legislation (Acts & Regulations) governed by Federal or State authorities

4.1.3. Existing institutional setup and capacity for solid waste management (SWM) and extended producer responsibility (EPR)

As previously mentioned for 'Act-States', the KPKT of the Federal Government is responsible for overseeing the management of solid waste, with the main role of drafting policies and providing advice to the Federal Government, state governments and local councils regarding solid waste management. Following the enforcement of Act 672, the National Solid Waste Management Department (NSWMD) was established under KPKT to coordinate the implementation of national solid waste management and public cleaning policies between the federal and state governments as well as the local authorities. NSWMD is also responsible for regulating the policies on solid waste management and the national 3R policies. In addition, the Solid Waste and Public Cleansing Management Corporation (SWCorp), was established by KPKT in 2008 with the authority to manage and implement plans set by NSWMD pertaining to solid waste and public cleaning under the Solid Waste and Public Cleansing Management Corporation Act 2007 (Act 673) (see Figure 8, above).

NSWMD carries out functions and roles in providing planning for solid waste management facilities such as location, type, and size of facilities, and includes planning, building, and operating SWM facilities as well as implementing the safe closure project of the landfill when a product has reached the end of its life cycle. NSWMD plays a role in carrying out regulatory functions as well as approving and implementing licenses. Among the Department's main roles are the implementation of privatisation, and the administration of concession agreements. In addition, NSWMD is also responsible for granting approval for the construction,

arrangement and closure of SWM facilities, SWM & Public Cleansing (PC) service licensing and the issuance of the Approved Permit (AP) for Plastic Import under HS Code 3915 through the delegation of authority by the Director General of Customs.

Meanwhile SWCorp is also carrying out functions and roles by implementing policies, plans and strategies, and by implementing the programmes that have been set for the Solid Waste and Public Cleansing Management (SWM & PC) services. Their activities include implementing measures decided by the Federal Government for SWM and public cleansing services; recommending standards, specifications and codes of practice for SWM & PC services; implementing and enforcing SWM & PC laws; adding concerted efforts towards improving the efficiency of SWM & PC service operations; encouraging public participation and enhanced public awareness of SWM & PC; and fulfilling other related functions.

In summary, NSWMD is more focused on the regulatory aspects of SWM & PC legislation, while SWCorp handles the operational and implementation aspects of waste management and public cleansing.

As for the 'Non-Act States', the state government sets the policy and direction for solid waste management while the local council in the state employs and enforces the waste management system within the state government's policy. The local authorities will still have the responsibility of regulating and evaluating the services performed by appointed contractors, while also creating awareness of government recycling programmes and waste-related issues.

Regarding hazardous or scheduled waste, the Federal government, under the Department of Environment (DOE) and the Ministry of Natural Resources and Environmental Sustainability (NRES), manages this refuse via Act 127, which applies to all states. NRES is responsible for overseeing natural resources and environmental issues, and their main role is the planning, developing and coordinating of policy implementation related to the environment. DOE was established to carry out the enforcement of the Environmental Quality Act 1974 (Act 127), which relates to the prevention, reduction, and control of pollution, along with the enhancement of the environment and related actions. Hierarchically, DOE falls under the responsibility of the NRES. As previously mentioned, the management and handling of scheduled waste is also under the jurisdiction of DOE.

According to NRES and DOE, their involvement in plastic waste management is to instigate and oversee the development of policies concerning plastic waste. They do not have the authority to actually manage plastic waste, except by enforcing plastic pollution prevention measures. For example, NRES can support the development of plastic waste management such as the Single-use Plastic (SUP) policy by imposing a fee on using plastic bags (e.g. the RM0.20/bag). However, the implementation and enforcement of the policy is carried out by the local authority and state government. The jurisdiction of solid waste management, including plastic waste, ultimately falls under the purview of KPKT. As NRES & DOE do not have any authority to implement or enforce plastic waste management, they can be involved only in voluntary EPR implementation for this waste, for exampling by promoting voluntary eco-design with SIRIM and MITI. However, according to NRES and DOE, the implementation of mandatory eco-designs for products will fall under the jurisdiction of MITI.

On the other hand, DOE has started EPR development for E-waste, which is one of the categories of scheduled waste under their jurisdiction. E-waste is defined as a broken, non-working or old/obsolete electric electronic devices, and which are categorised as Scheduled Wastes under Code SW110 in the First Schedule of Environmental Quality (Scheduled Wastes) Regulations 2005 in Malaysia. As a result, it is expected that DOE will also undertake the development of EPR for materials categorised under scheduled waste in the future.

In the Circular Economy Blueprint for Solid Waste (CEB), it was stipulated that the lead agency for EPR implementation for solid waste will be KPKT, supported by multiple ministries such as Ministry of Economy (MOE), NRES, MITI, and Ministry of Domestic Trade and Costs of Living (MTDCL). According to KPKT, each entity's participation will be based on that ministry's specific functions and roles. For example, KPKT will primarily focus on waste collection and recycling, while MITI's priority will be products and manufacturing. NRES will have a specific role in environmental pollution matters, namely setting the fines and penalties to be imposed.

Finally, in September 2023 the National Circular Economy Council (NCEC) was established under the authority of the KPKT to bring together national stakeholders who are concerned to accelerate the transition from a linear economy to a circular economy for solid waste. Representatives from the relevant ministries, including state authorities, industry players and other stakeholders, are all part of NCEC. KPKT also considers that the NCEC is the appropriate platform to coordinate actions among ministries, where the alignment on circular economy between ministries will be more streamlined.

4.1.4. Existing perceptions towards waste minimisation by stakeholders

Waste minimisation encompasses various activities aimed at reducing waste generation at both pre- and post-consumer stages. In Malaysia, recycling has been strongly promoted through various policies to address the growing waste challenge. The study 'Survey on Solid Waste Composition, Characteristics & Existing Practices of Recycling in Malaysia,' was conducted by the National Solid Waste Management Department (NSWMD) in 2012 to explore the perceptions and practices of both households and industries towards waste minimisation and recycling. In this section the results are presented.

Household recycling practices

The study revealed that 67.8% of household respondents reported practicing recycling activities at home. The primary motivations for recycling were financial incentives (34.7%), environmental protection (32.1%), for altruistic reasons (19.5%), and requests from collectors, street pickers, friends, or relatives (10.1%). On the other hand, the main reasons for not recycling cited among households were a lack of time (36.5%), a perceived lack of necessity (21%), and the absence of recycling facilities and services (18.3%).

The survey also found that respondents regarded raising awareness about recycling as the most effective strategy to encourage waste minimisation, ranking it higher than other measures such as stricter enforcement of laws, the introduction of incentives or penalties, providing recycling facilities, or implementing door-to-door collection services.

Willingness to pay for additional recycling services

In addition to examining motivations and barriers, the study investigated whether households would be willing to pay for additional services to collect recyclable waste or separate recyclables in advance. Among respondents unwilling to pay, 48% expressed a willingness to separate recyclables on their own, while 31% stated they would do so only if compensated. Of the respondents who were willing to pay for additional services, 10% were willing to separate recyclables, while 6% were not willing to separate them. This suggests a divergence in household participation in recycling, particularly when a structured collection system, like the 2+1 rule under the SAS Regulation for Act States, is implemented.

Recycling practices in the industry

The survey also enlisted industrial establishments to assess recycling practices within the sector. Results showed that 73% of respondents actively practice recycling, while 27% do not. Among those who practice recycling, the breakdown is as follows: 27% recycle both municipal and production waste, 24% recycle only municipal waste, 13% recycle only production waste, and 9% claim to practice recycling but lack specific information about the recyclables they handle.

Reasons for not practicing recycling in the industry

The survey also explored the reasons why some industries do not engage in recycling. The most common reasons cited by respondents were 'No time', 'No reason', and 'Do not see a need'. However, there were variations in the reasons that were given across different industries which suggest that sector-specific approaches may be needed to encourage more widespread recycling practices.

4.1.5. Existing market for secondary resource materials (SRM)

Secondary resource materials (SRM), or secondary raw materials, are recycled materials that can be used in manufacturing processes instead of or alongside virgin raw materials. In Malaysia, the term 'recycled material' is more commonly used when referring to SRM. According to the Malaysian Recycling Alliance

(MAREA), an industry-led non-profit voluntary producer responsibility organisation (PRO) in Malaysia, the SRM market for some high value materials (e.g. rigid plastic, metal, paper) already exists at some level in Malaysia. But the SRM market for low value (e.g. glass) and hard-to-recycle materials (e.g. multilayer flexibles) is not well established, because in Malaysia the technology to recycle and access these feedstocks does not exist, and it lacks recyclers and/or investors to invest in the technology.

Figure 9. The quality of recycling material limits material circularity in Malaysia

To delve into the current situation for high value material in Malaysia, the recycled plastic market has been selected as an example, and an interview was conducted with a member in Malaysia Plastics Recyclers Association (MPRA) specifically regarding plastic recycling market in Malaysia.

Plastic SRM Market in Malaysia

Malaysia's recycled plastic market includes both local and overseas (export) demand, but it is mainly export-oriented as the result of a lack of demand from local industries, and for two primary reasons.

- **Market Price of Recycled Plastic Feedstock**: Several factors help explain why the price of recycled plastic is higher than virgin material.
  - **Demand vs supply**: High demand for recycled material at the wider market level, driven by recycled material content requirements set by many countries, has led to a dwindling supply of raw materials. This scarcity forces recyclers to pay higher prices to obtain raw materials to process into recycled material.
  - **Cheaper virgin plastic**: The price of virgin plastic is linked to oil prices. As oil prices fell, virgin plastic became much cheaper than recycled plastic feedstock.
  - **Price threshold**: The price of recycled plastic feedstock often exceeds the threshold for virgin plastic, leading industries to opt for virgin plastic feedstock instead, which in turns makes virgin plastic a key component in the recycling market.
- **Lack of regulation**: Local industries are requirement-driven, and currently there is no regulation enforcing the use of recycled material in Malaysia, which then results in lower demand for recycled plastic feedstock, as uptake is voluntary.

Plastic recycler in Malaysia

Malaysia has sufficient recycling capacity for polyethylene terephthalate (PET) to meet recycled content targets. However, most of the feedstock for PET recycling in Malaysia is imported rather than locally sourced. This is because imported feedstock is of higher quality, more consistent, and more readily available compared to locally sourced materials.

Conversely, there is a gap in recycling capacity for other types of plastic in Malaysia due to the fluctuating demand for recycled plastics within the local market and the inconsistent availability and quality of material supply. This limited and variable demand results in a high investment risk, deterring expansion in recycling capacity. Locally sourced materials often suffer from higher contamination (e.g. dirt, mixed materials/ waste), necessitating additional cleaning by recyclers before processing. This issue is likely the result of a lack of source separation and the reliance on post-disposal sorting methods (e.g. sorting at waste truck tailgate and at the landfill).

Even though other Southeast Asian countries that export plastic feedstock, such as Indonesia, may not have high rates of source separation, the quality of their feedstock is much higher than that of Malaysia. This is because their cost is lower than in Malaysia and they can afford to clean and process the material to a higher quality before baling. Processing includes cleaning the material, as well as removing and segregating mixed materials by type and colour. Additionally, the quantity of plastic waste material is lower in Malaysia because Indonesia's plastic production is much higher. As a result, local recyclers in Malaysia import plastic waste material to meet the demand.

Glass recycler in Malaysia

Regarding low-value material recycling, the glass recycling market in Malaysia has been highlighted as an example, using an interview with a glass recycling player, who claims that there is market demand for recycled glass. However, the insufficient supply of high-quality glass waste in Malaysia means that all recycled glass is currently imported from China or Indonesia. Additionally, some manufacturers cannot use recycled mixed glass waste because of differences in chemical structure. Different types of glass have specific recovery lines based on their chemical structures, and they cannot be mixed during recycling. Different types of glass have varying impurity tolerances, so different buyers will procure different recycled glass based on their specific needs. For instance, borosilicate glass has no tolerance for impurities, whereas float glass can tolerate some.

Currently there is no glass recycling hub that can cater for various types of glass in Malaysia. Most glass waste is collected and recycled through a closed-loop system by the private sector within their own take-back system and for their own recycling purposes (e.g. glass bottles, glass wool insulation). Usually, the local glass manufacturer and glass-object producer will work side by side to recycle glass waste from production, in order to control the quality of the waste.

Glass waste from the post-consumer market in Malaysia is generally not collected because of the high cost of collection and low demand for recycled glass. Thus the glass recycling industry faces a number of challenges: the fluctuating price of waste glass, cheap raw material price for virgin glass, and strict requirements for manufacturers to use recycled glass cullet. Currently, the coloured glass manufacturers in Malaysia import recycled glass from Thailand and Indonesia as these countries are able to meet the minimum supply which Malaysia cannot.

Recycling industry in Malaysia

Collecting recyclables in Malaysia was established long before the enforcement of Act 672. Apart from concessionaires and collection companies appointed by the authorities (the formal sector), recycling collection is also handled by the informal sector in both Act States and Non-Act States. In Malaysia, this sector includes reputable non-governmental organisations (NGOs) such as Buddhist Tzu Chi's voluntary recycling collection programme, and private recycling collectors ranging from individual waste pickers to agents and larger recycling aggregators who work outside the formal recycling system. In fact these informal collectors compete with the formal system to obtain recyclable waste materials. Although it is commendable that the informal sector conducts waste segregation and contributes to recycling rates, there

is concern that safety procedures and environmental standards of waste handling are not maintained, and the authorities cannot thoroughly control and monitor the activity of informal sectors.

The early stages of the recycling value chain are highly fragmented with various individual waste collectors; this fragmentation increases along the value chain, usually starting with agents or mixed junk yards. The agents procure the various different materials collected and further separate and aggregate them with some form of processing (e.g. shredding, baling). The agents will then sell these to larger recycling aggregators who then sell them to recycling companies to fully process and recycle the materials (see Figure 10).

Figure 10. Recycling equipment such as balers are commonly used

Legislation for Secondary Resource Materials (SRM) in Malaysia

On the one hand, and according to KPKT, there is no regulation to mandate the use of SRM in manufacturing. In the event that a regulation is set up to drive the SRM market, KPKT is of the opinion that MITI's involvement will be required to specify the requirements for incorporating a minimum percentage of SRM in manufacturing. An example can be drawn from Malaysia's Biofuels Industry Act 2007, which created a blending mandate for palm oil biodiesel with petroleum diesel (B5 blend) for the transport sector. According to MITI, at this stage, there was no specific instrument in place to enable utilisation of SRM within the manufacturing sector. In consequence the readiness of industries to utilise SRM in the manufacturing sector needs to be established, which could include involving the industries to assess their own awareness and technical capacity for using SRM in their manufacturing process, assessing the gaps in SRM supply and demand as well as the gaps in existing technical limitations and legislative requirements of SRM for utilisation, and so on.

On the other hand, MAREA maintains that there are some regulatory or certification standards for recycled materials already established in Malaysia. One of the key concerns in Malaysia, however, is the absence of the halal label for recycled materials such as plastic packaging. The CEO of MAREA, Mr Roberto Benetello, thinks this gap will be closed soon as Indonesia is already working on the halal label for recycled materials.

MAREA believes that once mandatory EPR is implemented, existing recyclers can be encouraged to use more local waste feedstock instead of imports. Mr. Roberto suggests that if MAREA commits to paying a price or extra value to the recycling market for low-value materials through EPR fees and purchasing recycled material, it will stimulate the ecosystem of the recycling market by increasing the value and demand of low-value materials, which will in turn promote the collection and recycling of these materials. He also mentioned that some large producers (e.g. Coca-Cola) are already required by regulations – Regulation (EU) 2025/40 - Packaging and Packaging Waste Regulation (PPWR) – to include a certain percentage of recycled content in their packaging products. Thus, if the main contributors of MAREA can access cheaper local recycled material feedstock instead of importing, it will further drive the collection and recycling of local waste feedstock.

4.2. Baseline EPR and circular economy implementation in Malaysia

Currently there is no specific EPR legislation in Malaysia, and thus no mandatory EPR system is currently implemented or operating. However, two key ministries do have specialised departments which are focused on waste management and recycling activities: the Ministry of Housing and Local Government (KPKT) and the Ministry of Natural Resources and Environment (NRES). Additionally, there are also other ministries like the Ministry of International Trade and Industry (MITI) that may not have a direct role in waste management or recycling, but which will play an important role in EPR planning and implementation.

Through KPKT and NRES, two types of waste are targeted for EPR implementation in Malaysia. Under KPKT, solid waste in general has been targeted for the implementation of the EPR scheme with a timeline of 2025–2035, as published in the Circular Economy Blueprint for Solid Waste (CEB) in August 2024. Prior to the publication by KPKT, NRES and DOE had already targeted plastics and E-waste for implementing an EPR plan in Malaysia. Furthermore, a single industry-led non-profit voluntary PRO, the Malaysian Recycling Alliance (MAREA), was established in January 2021 to focus on addressing post-consumer packaging waste in preparation for a mandatory EPR scheme implementation.

Currently in Malaysia, much more progress has been made on EPR development for e-waste compared to solid waste. With support from the Japan International Cooperation Agency (JICA), a proposed EPR system for household e-waste has been developed in collaboration with DOE Malaysia. In contrast, for solid waste, plastic and post-consumer packaging waste, only a few pilot systems are being tested through projects and programmes.

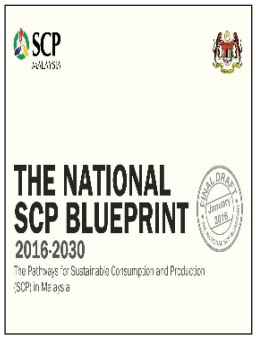
With the establishment of the National Circular Economy Council (NCEC) in September 2023, there has been more progress from national stakeholders to accelerate the transition from a linear economy to a circular economy for solid waste. More recently, the NCEC meeting on 9 May 2025 chaired by KPKT Minister Nga Kor Ming, has approved, in principle, the proposed EPR Policy Framework and agreed to the mandatory implementation of eco-design. According to the Minister, the EPR Policy Framework developed by KPKT, was a result from an engagement session with various stakeholders, particularly industry players. The framework included key elements like the EPR model, the determination of obligated companies, procurement targets, types of materials, implementation phases, and the roles and responsibilities of relevant stakeholders. Moreover, the NCEC also approved four new policies to drive the circular economy, including a proposal for the mandatory implementation of eco-design submitted by the NRES. This proposal included the development of mandatory policies, regulations, frameworks, guidelines, and eco-design standards. According to the Minister, KPKT will present the outcomes of this meeting for the Cabinet's consideration and approval. However, the details of the proposed EPR policy framework and other four new policies discussed in the NCEC meeting is not publicly available at the moment.

4.2.1. Existing or proposed policy and legislation framework relevant to EPR implementation

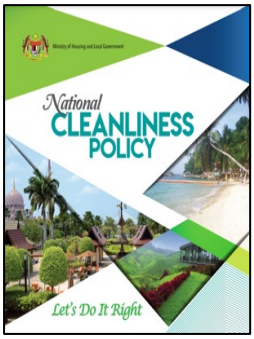
Every five years, the national policy *Malaysia Plan* outlines the nation's renewed aspirations and directions in a variety sectors. This macro-policy serves to drive and empower relevant ministries and government agencies to lead and implement the necessary changes, including introducing policies with more specific action plans within their jurisdictions. In the past decade, the direction of solid-waste management (SWM) policies in Malaysia has progressed from minimising waste to embracing a more circular economy (CE). Ever since Malaysia's National Plan involved moving towards CE, several ministries have taken steps to develop policies for the transition. For instance, NRES, KPKT and MITI have each come up with policies and

action plans involving CE and sustainability, based on their respective roles. According to KPKT, all three ministries were involved as committee members during the drafting of the most recent CE policy by MITI (CE Framework for the Manufacturing Sector), to ensure that the policies complement each other. Through some of these ministries, the Malaysian government has developed several policy frameworks and action plans that incorporate EPR to improve waste management and encourage resource circularity, as outlined in Table 1.

Figure 11 is a visual representation of the policies in Malaysia that currently exist that are relevant to Solid Waste Management (SWM), Circular Economy (CE) and Extended Producer Responsibility (EPR).



National Sustainable Consumption and Production (SCP) Blueprint 2016



National Cleanliness Policy 2020 - 30

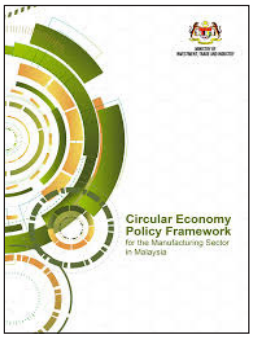
Circular Economy Blueprint for Solid Waste 2025–2030

Malaysia's Roadmap towards Zero Single-Use Plastics 2018–2030

National Solid Waste Management Policy (2016)

12th Malaysia Plan

Malaysia's Plastics Sustainability Roadmap 2021–2030



Circular Economy Framework for the Manufacturing Industry

Figure 11. Existing policies in Malaysia relevant to SWM, CE and EPR

National Sustainable Consumption and Production (SCP) Blueprint 2016, EPU

During the drafting of the 11th Malaysia Plan (2016–2020), several government policies were introduced including the National Sustainable Consumption and Production (SCP) Blueprint 2016 (published by Malaysia's Economic Planning Unit (EPU) with the support of SWITCH-Asia).[7]

The Blueprint outlines ten government initiative pathways to ensure that consumers and industries will be prepared for SCP practices in daily life and business contexts, such as Pathway 01, Government Green Procurement (GGP) and Pathway 04, Circular Economy Waste System. The GGP is an initiative in which government can lead by example, increase the demand for green products and services, and encourage industries to meet green requirements. Meanwhile the pathway towards a circular economy waste system introduces a holistic approach to waste management with the ultimate goal of phasing out landfilling by 2030.

7 https://www.switch-asia.eu/site/assets/files/2152/malaysia_the_national_scp_blueprint_2016_-_2030.pdf

National Solid Waste Management Policy (2016), NSWMD under KPKT

In September 2016, the National Solid Waste Management Department (NSWMD, under KPKT) followed with the revised National Solid Waste Management Policy (2016) to incorporate initiatives and concepts such as Separation at Source (SAS), Pay-as-you-Throw (PAYT), and Take-back system and Waste-to-Energy (WTE) technology as part of a holistic approach to waste management systems.

National Cleanliness Policy 2020–2030, KPKT

In addition, KPKT introduced the National Cleanliness Policy in 2019 with 10-year action plans (2020–2030) to focus on five clusters, namely:

1. awareness of cleanliness
2. environmental sustainability
3. circular economy
4. good governance
5. enforcement and quality of awareness among the public

Some of the strategies highlighted in the policy relevant to promoting circular economy and EPR include:

- Strategy 2.3.3 – To improve SWM mechanism which is reinforcing implementation of waste separation in residential and ICI premises, introduction of 3-Bin Campaign
- Strategy 3.1 – Promote Practices of 3R (Reduce, Reuse, Recycle) and Waste Separation
- Strategy 3.2 – Generate Income from Waste (Waste to Money)
- Strategy 3.3 – Encourage Industry Players to Adopt Circular Economy
- Strategy 3.4 – Implement Extended Producer Responsibility (EPR) to promote recycling

Specifically, under Strategy 3.4, four Actions Plans under this strategy were mentioned by the government to set EPR as a strategy to promote recycling, which are to:

1. Encourage the involvement of industry to implement Extended Producer Responsibility (EPR) through the EPR Implementation Plan
2. Create an EPR Roadmap as a guide and reference for stakeholders
3. Introduce the Reverse Vending Machine (RVM) to encourage recycling
4. Create a platform for engagement sessions between the government, industry, NGOs and educational institutions

12th Malaysia Plan (2021–2025), EPU

Entering the 12th Malaysia Plan (12MP) era (2021–2025), the country is highly focused, first of all, on accelerating the transformation from a linear to a circular economy. The main agenda is to create an enabling ecosystem or framework by developing the Circular Economy Blueprint regarding solid waste, plastics, scheduled waste and agro-commodities. Second, legislation will be reviewed and developed to facilitate this transition and to incorporate relevant elements that support circular economy growth such as eco-design requirements and use of recycled materials. Further specifications, such as recyclable material minimum content and sustainable sourcing standards, will be set accordingly. Green technology, green financing and economic instruments will also be enhanced. Solid-waste management will be strengthened through compliance and the construction of integrated waste management facilities equipped with material recovery and treatment facilities as well as a sanitary landfill. Finally, it is noted that EPR implementation will be focused on e-waste, and include regulations, packaging and also the management of single-use plastics.

Circular Economy Blueprint for Solid Waste 2025–2030 (CEB), KPKT

In August 2024, KPKT published the Circular Economy Blueprint for Solid Waste in Malaysia 2025–2035 (CEB), showing alignment with 12MP aspirations and providing detailed action plans as guidelines towards changing the landscape of SWM from a linear to a circular economy. The CEB provides information and direction to advance the national CE development, including the extended producer responsibility (EPR) scheme and a zero-waste-to-landfill certification for manufacturers. Focused on five strategic pillars, the Blueprint comprises 20 initiatives and several related actions plans covering governance and legislation, guidelines and procedures, data collection systems, and the growth of recycling and solid waste-based industries.

Some of the initiatives relevant to CE and EPR are law transformation (CEI01); EPR implementation for solid waste (CEI02); Waste-Eco-Park (WEP) development (CEI13); implementation of PAYT for ICI and Construction sector (CEI17); empowering industry-driven CEPA programmes (CEI20) and incentivising the private sector to develop circular economy business activities (CEI16).

Under the specific initiative EPR Implementation for Solid Waste under Circular Economy Initiative 2 (CEI2), CEB plans to establish a mandatory EPR mechanism as an environmental policy approach that will emphasise the producer's responsibility to sustainably manage waste throughout the life cycle of the product. When EPR is implemented, producers have an obligation to implement the recovery and recycling of materials collectively under PROs to manage post-consumer products. The action plans under this initiative are:

- Organising engagement sessions with all relevant stakeholders
- Enacting of specific laws regarding EPR to be implemented in Malaysia
- Developing and integrating an EPR database for reporting on the product and waste generated
- Mandatory identification and choice of the EPR model, waste category, sector industry, and producer whose potential in the EPR scheme
- Establishing a regulatory body to ensure enforcement, monitoring progress, and EPR legal compliance

Malaysia's Roadmaps on Plastic Waste (2018 and 2021), NRES

To draw attention to plastic waste, two roadmaps were produced under a separate ministry, now known as Ministry of Natural Resources and Environmental Sustainability (NRES). The first was Malaysia's Roadmap towards Zero Single-Use Plastics 2018–2030 published in 2018, specifically focused on addressing the growing hazards of single-use plastics (SUPs). The roadmap encourages minimisation of SUPs and a transition to biodegradable and compostable products through eco-labelling and R&D funding, and also marks the start of pollution charges for SUP bags by States and a pollution levy on manufacturers of plastic bags imposed by the Federal Government. Following the roadmap, there has been an implementation of bans on single-use straws and single-use plastic bags by several states and local councils in Malaysia.

The more recent roadmap is the Malaysia's Plastics Sustainability Roadmap 2021–2030 published in 2021, aimed at achieving greater plastic circularity levels and ultimately closing the plastic waste loop in the circular economy. Malaysia aims to achieve plastic sustainability by adopting the three following key innovation strategies: phase-out, reuse and material circulation.

This roadmap is focused on four types of plastic resins: polypropylene (PP), polyethylene terephthalate (PET), high-density polyethylene (HDPE), and low-density polyethylene / linear low-density polyethylene (LDPE/LLDPE) in the packaging sector, followed by electrical and electronics, construction, and the automotive sector. Some of the action plans highlighted in the roadmap are piloted through a multi-ministry approach, and the following list names some of the action plans relevant to CE and EPR for plastic waste.

- Implementation of Extended Producer Responsibility (EPR) scheme for plastics with Adoption of Voluntary EPR (2023–2025) and Mandatory EPR scheme adopted nationwide by 2026
- Phasing out problematic and unnecessary single-use plastics (SUPs) (2023–2030)
- Empowering the informal sector (2022–2026)

- Mandating sustainable design (50% of plastic packaging to be recycled)
- Improvising plastic recovery management and setting minimum thresholds for Collected for recycling (CFR) with 40% CFR rate by 2025 and 76% CFR rate by 2030 (2024-2030)
- Increasing the demand for recycled material (domestic demand)
- Setting a minimum threshold for recycled packaging content with 15% recycled content by 2025
- Setting a minimum threshold for recycled content for automotive (2027–2029)
- Setting a minimum threshold for recycled content for construction and plastic End-of-Life Vehicle Scheme (Automotive) (2030)
- Launching a mandatory waste management plan (to divert plastic from landfill) for the construction sector (2028–2029)

Circular Economy Framework for the Manufacturing Industry (CEF), MITI

Besides KPKT and NRES, the Ministry of Investment, Trade and Industry (MITI) has also undertaken an extensive, comprehensive study on CE practices, particularly on the roles of manufacturers in the CE chain.

Starting with the New Industrial Master Plan 2030 (NIMP 2030), MITI stated in its mission on Push for Net Zero (Mission 3) that a circular economy framework for the industry is to be established (Action Plan 3.3.3). This has led to the development of Circular Economy Framework for the Manufacturing Sector (2024–2030), which not only complements NRES's Malaysia Plastics Sustainability Roadmap 2021–2030 as well as KPKT's CEB initiatives, but also takes into account non-solid waste and materials other than plastic.

Under this policy framework there are 14 initiatives and enablers which are targeted interventions to spur and support the development of Malaysia's CE ecosystem. Some of the relevant Circular economy initiatives highlighted are Initiative A2: Implement minimum circular content requirements; Initiative C3: Drive transition to mandatory EPR adoption among manufacturers; and Initiative D1: Develop standardised CE certification ('green labels' for CE-centric products) for labelling and reporting.

The focus of Initiative C3 is on working to prepare industry to transition from voluntary EPR schemes to a mandatory scheme over a three-to-five-year timeframe in key sectors such as the electrical and electronics sector, and the packaging sector. The timeframe will take a progressive approach to introducing EPR in relevant industries. MITI will contribute to the EPR rollout by engaging early on with industry to inform them of the upcoming policies, as well as to assist industry groups in the establishment of PROs within target sectors (i.e. packaging, electrical & electronic products). Financial and non-financial support will be provided for pilot studies on the implementation of EPR, including upskilling and provision of financial assistance to SMEs, such as tax exemptions. Data collection activities will be established, such as the volume of waste packaging produced and the volume of packaging imported.

MITI has also previously developed a roadmap for the chemical industry to improve its circular economy practices, the Chemical Industry Roadmap 2030. Included in the roadmap are recycling technologies, labelling standards for sustainable plastics and synthetic rubber (with a focus on tyres and gloves), an introduction to EPR to enhance end-of-life waste management for chemical products, and presentation of a mandate for plastic packaging to utilise increasing quantities of sustainable materials (biodegradable bioplastics or recycled plastics).

Table 1. Existing policies relevant to CE and EPR in Malaysia

By	Policy (All States)	Year Published	Timeline
	PRE-12MP // During 11th Malaysia Plan (2016–2020)		
EPU-EU	National Sustainable Consumption and Production Blueprint 2016	Jan 2016	2016–2030
NSWMD	National SWM Policy 2016	Sep 2016	Undefined
NRES (MESTECC)	Malaysia's Roadmap towards Zero Single-use Plastics	2018	2018–2030
KPKT	National Cleanliness Policy	2019	2020–2030
EPU	(Macro policy) 12th Malaysia Plan (12MP)	2021	2021–2025
	POST-12MP // During 12th Malaysia Plan (2021–2025)		
NRES (KASA)	Malaysia's Plastics Sustainability Roadmap 2021–2030	Dec 2021	2021–2030
MOSTI	The National Advanced Materials Technology Roadmap	2022	2021–2030
MITI	New Industrial Master Plan 2030 (NIMP 2030)	2023	2023–2030
MITI	Chemical Industry Roadmap	2023	2023–2030
KPKT	Circular Economy Blueprint for Solid Waste Management 2025–2035 (CEB)	2024	2025–2035
MITI	Circular Economy Framework for the Manufacturing Sector (NIMP Mission 3.3.3)	2024	2024–2030

A common theme within these policies is the harmonisation of existing legislation and the introduction of a new legislation called the Circular Economy Bill, under which EPR legislation will be drafted. This new act will cover all States and can become the basis for setting up a new agency and financial structures. Taking Japan's approach involving multiple ministries in implementation as an example, this act will be managed by three ministries – KPKT, NRES and MITI – because there are cross-cutting issues involving all three, according to KPKT. Such an initiative will address the issue of clarity in legislation and institutions and is in line with KPKT's main priority: to create meaningful change towards a circular economy and a functioning EPR ecosystem (framework). At present there no specific timeline has been given for the development of the proposed circular economy bill. The existing and proposed legislations relevant to EPR implementation in Malaysia are outlined in Table 2.

Table 2. Existing and proposed legislation relevant to EPR implementation in Malaysia

Legislation	Lead Ministry	Targeted waste	Objective & Key Highlight
Existing: Solid Waste and Public Cleansing Management Act 2007 (ACT 672)	KPKT	Solid Waste	**Objective:** This is an Act to provide for and regulate the management of controlled solid waste and public cleansing for the purpose of maintaining proper sanitation and for matters incidental thereto. **Key Highlight:** **Provision under Section 101 – Reduction, reuse and recycling of controlled solid waste;** (1) The Minister may, by order published in the Gazette, require— a. any solid waste generator to reduce the generation of controlled solid waste in any manner or method; b. any person to use environmentally friendly material; c. any person to use specified amount of recycled materials for specified products; d. any person to limit the generation, import, use, discharge or disposal of specified products or materials; Solid Waste and Public Cleansing Management 77 e. the implementation of coding and labelling systems for any product or material to promote recycling; f. the use of any method or manner for the purpose of reducing the adverse impact of the controlled solid waste on the environment; and g. the use of any method or manner for the purpose of reduction, reuse and recycling of the controlled solid waste. **Provision under Section 102 – Take back system and deposit refund system;** (1) The Minister may, by order published in the Gazette establish take back system which— a. require that specified products or goods after use shall be taken back by the manufacturer, assembler, importer or dealer and that the manufacturer, assembler, importer or dealer shall be obliged on their own account and cost to recycle or dispose any products or goods taken back in a specified manner; b. require that any person shall deliver specified products or goods to the manufacturer, assembler, importer or dealer; and c. require any dealer of specified products or goods to receive and store specified products or goods to be taken back. (2) The Minister may, by order published in the Gazette, establish deposit refund system and determine— a. the specified products or goods; b. the deposit refund amount; c. the labelling of the products or goods; and d. the obligations of the dealers of the products or goods

Legislation	Lead Ministry	Targeted waste	Objective & Key Highlight
Proposed: Circular Economy Bill	KPKT/ NRES/ MITI	To be defined	**Objective**: To develop a more specific and comprehensive act that covers the product lifecycle from production to post-consumer products that can be adopted by all states. **Key Highlight:** The Circular Economy Bill is proposed in the CEB as part of the legislative transformation for solid waste management initiative (CEI 01 as it is needed to implement a holistic circular economy. This is because of the fragmented legislation for solid waste management in Malaysia (e.g. Act State and Non-Act State) and no uniformity and standard in mandating and regulating various circular economy initiatives targeting producers and consumers as the enforcement agencies are under different laws.
Proposed: E-Waste Disposal Regulations	NRES/ DOE	Household and non-industrial (commercial & institutional) E-Waste	**Objective:** To have clear guidelines regarding the management of household and non-industrial (commercial & institution) e-waste, especially to avoid contamination from hazardous materials contained in the waste if it is not disposed of correctly. **Key Highlight:** Draft regulations emphasise the concept of 'shared responsibilities' among the stakeholders, through the implementation of the principle of Extended Producer's Responsibility (EPR). The principle of EPR is the main feature of e-waste draft regulations, under which of the producers of electrical and electronic appliances have the responsibility to ensure a proper management of e-waste after the 'end of life' of the products. Under the EPR, producers are also entrusted with the responsibility to finance and organise a system to meet the cost involved in the overall management of the e-waste in an environmentally sound manner.

Analysis of the existing or proposed EPR Framework

The analysis described below was presented and discussed during stakeholder engagement sessions with the relevant ministries.

Solid Waste and Public Cleansing Management Act 2007, KPKT

Under the provisions in this Act, KPKT has the power to require that producers and manufacturers use specified amounts of recycled materials for specified products; take back their products or goods for recycling or disposal at their own cost; and establish a deposit refund system including the deposit refund amount. Currently, there is no specific EPR regulation being implemented through this Act. However, Act 672 faces a challenge in incorporating EPR because it has not been adopted by all States in Malaysia, and a national EPR law that covers all States in Malaysia is required. Although there can be an amendment to the existing 672 Act to incorporate EPR regulations for all States, the process will take time. The Malaysian government is currently planning to develop an EPR legislation which can be adopted by all States. According to KPKT, the basis of power for the development of EPR legislation will most likely come from the proposed Circular Economy Act.

Formulation of National Cleanliness Policy 2020–2030, KPKT

The status of the action plans for *Strategy 3.4 – Implement EPR to promote recycling* under this policy is still ongoing, progress being monitored by the KPKT committee. The implementation is to be carried out by a Local Council or a Local Authority at various levels. In general, there is no specific mandate within this policy concerning EPR.

Circular Economy Blueprint for Solid Waste in Malaysia (2025–2035), KPKT

According to KPKT, the action plan for EPR under this Blueprint is not described as there is no legislation in place at this time. KPKT is prioritising the development of the legislation for CE which is targeted to start in 2025. The current progress of Blueprint implementation is now focusing on consumer education and public awareness (CEPA) with the participation of the authorities and industry. Other than MAREA and few other large producers, there are at present only a limited number of active voluntary CE or EPR initiatives from other producers, because they are waiting for the government to make EPR mandatory. Under this Blueprint, a National Circular Economy Association (NCEA) is to be established, which will be a government and industry alliance with producers and manufacturers. The plan is to have the NCEA association serve as a platform to coordinate, plan and drive CE initiatives more comprehensively in Malaysia. NCEA will work closely with NCEC at the national level and play a pivotal role in advancing the country's recycling industry and solid waste-based industries.

Malaysia's Roadmap towards Zero Single-Use Plastics 2018–2030 & Malaysia Plastics Sustainability Roadmap 2021–2030, NRES

According to NRES, the action plans under these roadmaps are implemented by the local authority and State government. NRES has no authority for plastic waste management except on enforcement of plastic pollution prevention. Hence, jurisdiction for plastic waste EPR still lies with KPKT.

Circular Economy Policy Framework (CEF) for the Manufacturing Sector in Malaysia, MITI

MITI has stated that the purpose of the CEF is to give direction and a strong signal to the industry to prepare for the future implementation of EPR initiatives. MITI informed that following the launch of CEF, they held several meetings with other government agencies and with industry to create and increase awareness about the framework and CE. During the launch of the CEF, MITI also highlighted EPR as an important feature of the CE framework. Their current primary focus is to develop a CE taxonomy to provide clarity on CE related activities through standardised definitions and criteria. They also plan to cover or integrate the Sustainable and Responsible Investment (SRI) principles by the Securities Commission (SC) into the CE taxonomy. Regarding minimum circular content requirements, implementation will be by sectors, according to MITI. The targeted or focused sectors would be based on pull factors such as the sector's willingness to embrace CE/ESG concepts, or be guided by client demand. MITI thinks a readiness study should be undertaken to assess the readiness of the various different sectors. Regarding the development of guidelines and standards for recycled material, or sustainable product design and packaging, MITI disclosed that the initiative has not yet started but that these are important enablers for CE. At the moment, MITI specified that other initiatives under the CEF will begin roll out in 2025 with its own schedule.

Proposed Circular Economy Bill, KPKT

According to KPKT, this proposed act will cover all States and can be the basis for setting up a new agency and financial structure. Under this Bill, EPR legislation will be a multi-ministry strategy which will be managed by KPKT, NRES and MITI, as there are cross-cutting issues in EPR legislation. The bill will address the issue of clarity in legislation and institutions, which is the main priority for KPKT in order to create meaningful change towards both CE and a functioning EPR ecosystem (framework). Currently, there is no specific timeline given for the development of the proposed circular economy bill.

Draft on E-Waste Disposal Regulations, NRES & DOE

DOE with support from Japan International Cooperation Agency (JICA) has prepared and submitted the draft regulation for household e-waste management to the Attorney General Chambers (AGC) of Malaysia. However, the draft regulation was still under a further amendment process and had not yet been approved. The source of e-waste included in the regulation is household e-waste and also non-industrial (commercial & institutional). The draft regulation targeted six main categories of household e-waste, namely

1. televisions and monitors
2. mobile phones and tablets PCs
3. refrigerators
4. washing machines and dryers
5. computers
6. air-conditioners

Nevertheless, these six items have not yet been finalised. According to NRES and DOE, workflow under their E-Waste Management Mechanism has been implemented except for policies/legislation and fees/subsidy flows. The collection of e-waste from waste generators (i.e. the public) has been active for the past several years and the amount of household e-waste collected is increasing every year. All e-waste must be sent to the registered collection centre on a voluntary basis, and the licensed recovery facility has an obligation to receive the e-waste which is mandatory, in accordance with Environmental Quality (Scheduled Wastes) Regulations 2005. Presently, there are 128 registered e-waste collection centres and 13 recovery facilities that are capable of processing household e-waste in an environmentally coherent manner. All e-waste collected must be sent to a full material recovery facility for recycling and material recovery. Currently, NRES and DOE are still studying the options and plan to set up a producer responsibility organisation (PRO) operation system based initially on these three options:

1. Fully government led,
2. Government & industry-led
3. Fully industry-led but guided by government

4.2.2. Existing Initiatives and Implementation related to EPR in Malaysia

Since there is currently no mandatory EPR scheme in place, the adoption of EPR in Malaysia has been limited to voluntary efforts from the government and private sector. The goal of EPR is to encourage producers to incorporate the cost of environmental management into production processes, to incentivise sustainable manufacturing practices. Tables 3–10 document a few of the existing initiatives related to EPR in Malaysia which are being carried out by the government and private sector.

Table 3. List of existing initiatives related to EPR in Malaysia – DOE & JICA E-waste Project (Phase 1)

Government Lead: Department of Environment (DOE)	
Project Title	The Project for Model Development for E-Waste Collection, Segregation and Transportation from Household for Recycling in Penang State (Phase 1)
Stakeholders/Organisation setup	With the support of Japan International Cooperation Agency (JICA) and other organisations such as the local authority of Penang State, Retailers, Waste Collectors and Recovery Facility
EPR waste targeted	Household E-waste such as Refrigerators, Washing machines, Mobile phones, Computers, Air conditioners and Televisions
Objective/Target/Goal/ Progress	A proper collection, segregation and transportation programmes / system for recycling e-waste generated from households are implemented nationwide. The present conditions regarding e-waste generation, recycling and disposal activities are studied. Prior to this pilot project, the policy or regulations related with EPR are also introduced by conducted stakeholder engagement with manufacturers.
Infrastructure, technology, mechanism, law involved	The project scope includes the e-waste generation stage up to the point where collected wastes are transported to the full-recovery facilities

Table 4. List of existing initiatives related to EPR in Malaysia – DOE & JICA E-waste Project (Phase 2)

Government Lead: Department of Environment (DOE)	
Project Title	The Project for Development of Mechanism for Household E-Waste Management in Malaysia (Phase 2)
Stakeholders/Organisation Setup	Japan International Cooperation Agency (JICA) – main support organisation – and other organisations such as government agencies, local authority, retailers, waste collectors and transporters, recovery facility, NGOs and relevant associations
EPR waste targeted	The Project targets 6 items: TVs; Refrigerators; Washing machines and dryers;, Air conditioners; Personal computers (including desktop and laptop types); and Mobile phone including feature phones, smart phones, and tablet PCs
Objective/Target/Goal/ Progress	• Formulating various guidelines in relation to household e-waste management, such as guidelines for e-waste collection, recycling, reporting, recycling fees, and operations of the Recycling Fund Management Body (RFMB). • Development of guidelines in relation to household e-waste management, such as guidelines for e-waste collection, recycling, reporting, recycling fee, and operation of RFMB
Infrastructure, technology, mechanism, law involved	The project found that there is sufficient collection and transportation infrastructure, and that a network had been built by the existing collectors; the household e-waste collection system was assumed along with the existing infrastructure and network of collectors for cost analysis.

Table 5. List of existing initiatives related to EPR in Malaysia – DOE & JICA E-waste Project (Phase 3)

Government Lead: Department of Environment (DOE)	
Project Title	The Project for Institutionalisation of The Household E-Waste Recycling Fund Management Mechanism in Malaysia (Phase 3)
Stakeholders/Organisation Setup	With the support of Japan International Cooperation Agency (JICA) and other stakeholders such as manufacturer/importers, retailers, waste collector and transporter, recovery facility, NGO and relevant association or government agencies
EPR waste targeted	The Project targets items such as TVs, refrigerators, washing machines (including cloth dryers), air conditioners, Personal computers (including desktop and laptop types), and mobile phones including feature phone, smart phone, and tablet PCs
Objective/Target/Goal/ Progress	The official administration publication of 'Scheduled E-Waste Regulation, enhancement of guidelines and roadmaps developed, with the expectation for environmentally sound and sustainable management will be carried out for the 6 scheduled E-waste items (televisions, refrigerators, washing machines, air conditioners, personal computers and mobile phones) under the fair and transparent financial mechanism.
Infrastructure, technology, mechanism, law involved	Designed and built E-waste manifest system for collection and recovery management

Table 6. List of existing initiatives related to EPR in Malaysia – NREB Used Tyre Project

Government Lead: Natural Resources and Environment Board of Sarawak (NREB)	
Project Title	Establishment of a Collection and Treatment System for Used Tyres in Sarawak
Stakeholders/Organisation Setup	With the support of Danish Cooperation for Environment and Development (DANCED) and other stakeholders such as manufacturers and importers of tyres, producers of used tyres, transporters, collection sites, treatment and special storage facilities.
EPR waste targeted	Used tyres
Objective/Target/Goal/ Progress	To facilitate the authorities' establishment of a system for the collection and treatment of used tyres in Sarawak
Infrastructure, technology, mechanism, law involved	A levy fee is imposed on imported and locally manufactured tyres at the selling point and the fee is directed to a used-tyre recycling fund. The recycling fund subsidises the collection and recycling of the collected tyres. A concessionaire was appointed for this system and a used tyre recycling plant was set up. A specific regulation has been enacted under the Natural Resources and Environment Ordinance, The Natural Resources and Environment (Collection And Treatment Of Used Tyres) Rules 2001 (made under sections 18(w) and (z)) to empower the implementation of this mechanism).

Table 7. List of existing initiatives related to EPR in Malaysia – MAREA EPR Feasibility Study Project (Phase 1)

Private Lead: Malaysian Recycling Alliance (MAREA)	
Project Title	EPR Feasibility Study Project, Phase 1: Understand the local waste management and how the current recycling management works in Langkawi Island.
Stakeholders/Organisation Setup	In collaboration with KPKT and Langkawi Municipal Council, this voluntary industry-driven PRO-MAREA currently consist of 12 members of the fast-moving consumer goods (FMCG) companies including Nestlé, Coca Cola, Colgate, Unilever, among others
EPR waste targeted	Post-consumer waste packaging such as PET, HDPE, PVC, LDPE, PP/PS, Multi-layer/laminates and used beverage cartons (UBC)
Objective/Target/Goal/ Progress	Objective of this study is to facilitate designing a sustainable national EPR framework for Malaysia and to provide a systematic and optimised post-consumer product collection system to foster active community engagement to support circular economy initiatives. The conclusion of the feasibility study is that the packaging recycling rate in Langkawi is still low - 22.6%, while the household packaging recycling rate is less than 10%.
Infrastructure, technology, mechanism, law involved	Not relevant

Table 8. List of existing initiatives related to EPR in Malaysia – MAREA EPR Feasibility Study Project (Phase 2)

Private Lead: Malaysian Recycling Alliance (MAREA)	
Project Title	EPR Feasibility Study Project, Phase 2: Intervention and formulation of the EPR mechanism for Langkawi in terms of Operation, Consumer Education & Public Awareness (CEPA), Legislation and Financing
Stakeholders/Organisation Setup	In collaboration with KPKT and Langkawi Municipal Council, selected residential areas, waste concessionaire and MAREA.
EPR waste targeted	Post-Consumer Waste Packaging such as PET, HDPE, PVC, LDPE, PP/PS, Multi-layer/laminates and Used Beverage Cartons (UBC)
Objective/Target/Goal/ Progress	Aimed at promoting community engagement and raising awareness of proper waste management in Langkawi. In addition, the aim is to improve solid waste management and recycling activities with implementation across four residential areas, specifically Taman Sri Aman, Kampung Padang Putih, Simfoni Beliza Apartment and Taman Dahlia, covering over 1,300 households.
Infrastructure, technology, mechanism, law involved	Not relevant

Table 9. List of existing initiatives related to EPR in Malaysia – MAREA Collection Programme

Private Lead: Malaysian Recycling Alliance (MAREA)	
Project Title	Ampang Jaya High-Rise Collection Programme
Stakeholders/Organisation Setup	MAREA has partnered with Ampang Jaya Municipal Council (MCAJ), waste collector and relevant NGOs since December 2023
EPR waste targeted	Recyclable materials such as packaging waste
Objective/Target/Goal/ Progress	To encourage Ampang Jaya residents to embrace better practices in solid waste separation at source and provide collection for recycling To increase the national recycling rate and reduce waste sent to landfills
Infrastructure, technology, mechanism, law involved	This programme is one of the alliance's voluntary Extended Producer Responsibility (EPR) initiatives as an industry-led coalition in collaboration with local authorities to foster shared environmental responsibility among communities. MAREA provides doorstep recycling collection services and allows for direct engagement with residents, educating them in carrying out proper waste separation at the source. Bumi Waste Management (M) Sdn Bhd has been appointed as the collector for this initiative. It employs a buy-back mechanism to compensate janitors for their efforts in sorting recyclables at the high-rise buildings that are participating in this program. This mechanism improves the quality of recyclables collected and ensuring consistent and reliable post-consumer recyclables streams.

Table 10. List of existing initiatives related to EPR in Malaysia – Tan Boon Ming E-waste Recycling Program

Private Lead: Tan Boon Ming Sdn Bhd (Retailers)	
Project Title	E-waste Recycling Program
Stakeholders/Organisation Setup	In collaboration with DOE and JICA since 2017
EPR waste targeted	Household e-waste including personal devices, small and large appliances
Objective/Target/Goal/ Progress	Protecting the environment by safely disposing of electronic waste and reducing the amount of hazardous materials that enter the environment, TBM's e-waste programme includes: • Drop-off: Customers can drop off eligible e-waste at any TBM Electrical store, including small household appliances, personal computers, and mobile phones • Collection: TBM offers a door-to-door e-waste collection service for the Klang Valley • Recycling: TBM sends e-waste to government-licensed recycling facilities for recovery and transform into new resources • Tracking: TBM uses an app to track eligible e-waste to ensure accountable handling • Vouchers: TBM gives customers a RM10 voucher for every e-waste exchange
Infrastructure, technology, mechanism, law involved	Eligible e-waste will be tracked using an innovative app (A pilot project with Department of Environment, Malaysia DOE & JICA), ensuring accountable handling. The recyclable items will be securely stored in TBM's warehouse, awaiting the next phase. These items will be responsibly sent to government-licensed recycling facilities, where they will undergo recovery processes. Through this process, e-waste collected will be transformed, contributing to the creation of new resources and reducing environmental impact.

5. NATIONAL CONSULTATIONS AND STAKEHOLDER ENGAGEMENTS

The overall objective of the Technical Assistance (TA) provided by SWITCH-Asia to Malaysia is to advance Extended Producer Responsibility (EPR) in the Asia-Pacific region by identifying the key enabling factors that contribute to its effectiveness and alignment with the circular economy. The TA includes determining success factors, identifying gaps, and providing recommendations for effective EPR systems and enhanced material circularity through stakeholder consultation. To ensure a successful implementation and functioning of EPR system, it is necessary to identify key experts and stakeholder groups.

5.1. Individual and national interviews and workshop

An important aspect of this effort will be to understand how these groups can be empowered and enabled to play an effective role within a circular EPR system, ensuring their meaningful contribution to the overall success and sustainability of the framework.

Under this TA, engagement is carried out in the following manner:

- Individual stakeholder interviews
- National consultation workshop

The discussions and results from the interviews and national consultation conducted are documented and analysed in this section.

Figure 12. Stakeholder interviews with key stakeholders

The engagement interviews carried out with relevant key stakeholders in Malaysia through individual interviews are listed in Table 11 below.

Table 11. List of stakeholder engagement interviews conducted

Stakeholder	Organisation	Date	Agenda
Government	Environmental Management Division, Ministry of Natural Resources and Environmental Sustainability of Malaysia (NRES)	October 4, 2024	Status of the ongoing legal framework to phase out single-use plastics and e-waste management mechanism in Malaysia, which emphasises the concept of 'shared responsibilities' among the stakeholders, through the implementation of the principle of extended producer responsibility (EPR)
	Hazardous Waste Substances Division, Department of Environment (DOE)		
	Ministry of Housing and Local Government (KPKT)	October 4, 2024	Status of the ongoing specific and comprehensive policy framework related to the circular economy and EPR scheme implementation covering product lifecycle from production to post-consumer products and which can be adopted by all states in Malaysia
	Delivery Management Unit, Ministry of International Trade and Industry (MITI)	December 6, 2024	Status of the ongoing circular economy framework for the manufacturing sector, with the concept of EPR highlighted as a key strategy to ensure that local producers take responsibility for the entire life cycle of their products until their eventual disposal
Producer Responsibility Organisation (PRO)	Malaysian Recycling Alliance (MAREA)	November 15, 2024	Status of the initiative related to EPR implementation to obtain insight into gaps, challenges and suggestions for EPR implementation in Malaysia
Recycler	Naturaall Glass Solutions (M) Sdn Bhd – Glass Recycler	September 12, 2024	Challenges with regards to the secondary raw material market (SRM) in Malaysia, including recommendations for SRM market improvement and EPR implementation
	Malaysia Plastics Recyclers Association (MPRA) – Plastic Recycler	October 24, 2024	
Waste Management Expert	Dr Theng Lee Chong	September 2, 2024	Perception of EPR implementation in Malaysia for e-waste and solid waste

5.2. National Consultation Workshop, March 26, 2025

The National Consultation Workshop was held on 26 March 2025 via a virtual meeting platform, and involved country-level consultations with representatives of governments responsible for EPR oversight; monitoring agencies; operations and development of waste management systems; capacity development and awareness; and EPR organisations, business associations, and development agencies. A total of 27 stakeholders attended and contributed to this national consultation workshop.

The workshop presented the enabling condition assessment outcome including issues, gaps and challenges that have been documented and analysed so far with the stakeholders. After the current assessment outcome had been presented, the workshop leaders moderated the discussion on possible solutions and recommendations to address the gaps and challenges, additional recommendations for enhancing EPR implementation for Malaysia from stakeholders and experience sharing from other SWITCH-Asia team experts. Because Malaysia is in the process of developing specific legislation on extended producer responsibility (EPR), the workshop also included an experience for the stakeholders sharing EPR legislation development experiences in the Philippines as a cross-country learning experience and discussion opportunity.

5.3. Existing perceptions of and inputs towards EPR implementation by stakeholders

To gather the local perceptions of stakeholders towards EPR implementation, the relevant stakeholders were interviewed, and discussions from the national consultation workshop were also gathered and summarised. Furthermore, perceptions and inputs were also extracted from previously published reports or papers by the stakeholders concerned by EPR implementation. Tables 12 a, b, and c, below, describe the perceptions and inputs gathered from the selected stakeholders with regards to the implementation of EPR in Malaysia.

Table 12a. List of stakeholders' perceptions of and inputs regarding future implementation of EPR in Malaysia extracted from previous publications

Stakeholders	Key points and inputs
Producers – MAREA	*Source: MAREA Position Paper - Recommendations for an Effective Extended Producer Responsibility (EPR) Implementation and Policy in Malaysia* MAREA, in a published position paper, expressed their ideas and recommendations on developing and implementing an effective 'extended producer responsibility' (EPR) policy in Malaysia. In the long-term, MAREA believe that a successful EPR scheme will require a common legal and policy framework that can be applied homogenously across Malaysia. The EPR scheme will also need to take an inclusive approach to include all post-consumer packaging categories (plastics, metal, paper-based packaging, glass), which will increase the recovery and recycling rate of overall packaging waste and support optimising cost efficiency in the collection and recycling value chain. All producers/brand owners with products and inputs to the market shall be included in the EPR scheme. The EPR model needs to cover the total packaging waste scope, the majority of which comes from other/local fast moving consumer goods (FMCGs), e-commerce and service packaging, including and not limited to takeaway food. It is also important to ensure that there is an EPR framework that can progress and develop into mandatory EPR requirements to ensure a level playing field for all producers and avoid 'free riders'. Local, State or Federal governments shall be in charge of securing municipal waste management in an environmentally sound manner including clear and tangible enforcement rights once the EPR system becomes mandatory. EPR implementation can be more effective and efficient when it is executed through an industry-led producer responsibility organisation (PRO) that also takes on the role of the fund management body where the obligated industries take on the direct management responsibility and ownership of the fund management.

Stakeholders	Key points and inputs
Other Stakeholders – World Bank	*Source: The Role of Extended Producer Responsibility Schemes for Packaging towards Circular Economies in APEC > Case Study – Accelerating EPR in Malaysia (2022)* The World Bank maintains that Malaysia has a reliable foundation for mandatory EPR implementation, achieved through multi-stakeholder engagement, capacity building and shared understanding. This groundwork is complemented by Malaysia's twin-track approach through actions from the public and private sectors, as well as the broader contextualisation of EPR in the overarching transition to a circular economy (CE). Critical issues for the future progress of the implementation are achieving alignment between involved ministries and agencies, translating objectives into workable requirements and targets outlined by the legal basis, and setting appropriate incentives to increase the recycling of low- and non-valuable plastics. In summary, the crux of Malaysia's further development towards a mandatory scheme is to ensure clear responsibility within the government while continuing to hold broad-based stakeholder discussions to find the appropriate balance between an ambitious yet practicable legal framework.
Other Stakeholders – NGO (WWF)	*Source: Study on EPR scheme assessment for Packaging Waste in Malaysia (2020)* WWF identifies the extended producer responsibility (EPR) scheme as a critical and effective policy tool in holding manufacturers accountable for the end-of-life impact of their packaging products such as plastics, paper, metals, and composites from households and equivalent places of origin (e.g. service packaging), to create a financial and organisational basis for treating critical products and to avoid undesired substitution effects in packaging design. EPR as a policy instrument also encourages the adoption of holistic eco-design within the business sector. WWF also proposes a customised EPR scheme to address Malaysia's plastic waste pollution. The first step is developing a mandatory scheme to provide a reliable financial basis for the large-scale collection, sorting and recycling of packaging, which is crucial for creating sufficient business cases along the value chains. For this customised EPR scheme to work, WWF also emphasises the responsibility of implementing the scheme to be assumed by a non-profit producer responsibility organisation (PRO) as the system operator to ensure a holistic, reliable and fair manner for waste management, in which the responsibility is collectively assumed through one single industry-led system operator, with members from all stages of the value chain. To avoid fraud, it is necessary to establish strict and enforced monitoring; and controls and penalties are indispensable and should be handled by the Ministry of Environment and Water together with the Ministry of Housing and Local Government to ensure the compliance of all actors, including the PRO. Other than that, WWF also recommends fee modulation in the steered recycling market through the application of reduced EPR fees for high-value recyclable packaging (bonuses) and an increased EPR fee for low-value and non-recyclable packaging, to be paid by the obliged companies in a mandatory EPR scheme.

Table 12b. Stakeholders' perceptions of and inputs regarding future implementation of EPR in Malaysia collected during individual interviews

Stakeholders	Key points and inputs
Government – Ministry of Natural Resources and Environmental Sustainability of Malaysia (NRES) & Department of Environment (DOE)	*Source: Stakeholder Engagement meeting on 4 October 2024* NRES shared their opinion that Malaysia has multiple ministries & departments involved in developing EPR & circular economy (CE) as these are cross-cutting sector developments. Hence, the clarity of roles and responsibilities among government agencies is a challenge for EPR & CE. NRES cites the Philippines as an example of a country with more advanced EPR implementation progress compared to Malaysia, attributing the EPR progress of the former country to having one institutional body to manage all environment-related issues, and this has resulted in a more streamlined direction. NRES and DOE are now studying the options for establishing a producer responsibility organisation (PRO) operations system for household e-waste EPR based on these three alternatives: fully government-led, government-plus industry-led, and fully industry-led but guided by government. Furthermore, DOE also mentioned other challenges they face throughout their e-waste management system: one is the transportation costs to collect bulky items; another is DOE's limited role as an enforcement agency under Act 127, in that they do not have the power to control electrical and electronic (EE) products until they reach their end of life cycle and become a scheduled waste categorised under the Environmental Quality (Scheduled Wastes) Regulations 2005 enacted under the Environmental Quality Act 1974 (Act 127). This situation has created some problems in collecting and reimbursing the EPR fee, which according to DOE, should be regulated by another organisational body for the electrical and electronic (EE) products that will be put on the market (POM). DOE are reviewing the solution to resolve this legislation issue, which falls under another ministry's jurisdiction. Finally, NRES communicated that they have received some feedback from stakeholders, especially small and medium-sized enterprises (SME), on their low willingness and commitment to pay EPR fees for any EE product that will be put back on the market.
Government – Ministry of Housing and Local Government (KPKT)	*Source: Stakeholder Engagement meeting on 4 October 2024* As mentioned previously, KPKT communicated that Malaysia is moving towards harmonising existing legislation and introducing new legislation, the Circular Economy Act, under which EPR legislation will be drafted. This legislation will involve a multi-ministry approach, and each ministry will have its own function and role. However, KPKT states that there is no specific or urgent timeline to make EPR mandatory, and thus there is less pressure in the industrial sector currently following the launch of the Circular Economy Blueprint for Solid Waste (CEB) in August 2024. Moreover, the Economy Planning Unit (EPU) of KPKT will conduct a study on the 'Polluters Pay Principle' or Pay-as-you-throw (PAYT) policy for the commercial, industrial and institutional (ICI) sector if the budget is approved by the Ministry of Economy (MOE) in 2025. Several projects with international third parties have also been undertaken, such as Germany's GIZ involvement in communication, education and public awareness (CEPA) and capacity-building programmes, and South Korea's support in SWCorp's EPR project. For local EPR projects, KPKT is also encouraging industry-led organisations such as Malaysia Recycling Alliance (MAREA) to work with all stakeholders, including waste-collection service concessionaires to ensure better chances of success. As highlighted by KPKT, the major gaps or challenges in making progress toward CE or EPR are 1) the introduction and adoption of the new Circular Economy act, 2) establishing a framework or mechanism for EPR to work, 3) funding on the government side, 4) capacity building of government & the private sector + industry, and 5) human capital, especially as regards regulations to monitor EPR. Another long-standing issue is the quality of the waste and the limited number of facilities to recover recycled materials in the first place. However, through the stewardship of the current National Circular Economy Association, KPKT is optimistic that this situation can be improved. As for secondary resource materials (SRM) or recycled materials, there is as yet no regulation to incorporate SRM into manufacturing and no substantial SRM market in Malaysia. Most SRMs are exported. In the event that a regulation is set up to drive the SRM market, KPKT is of the opinion that MITI's involvement will be required in specifying the requirements to incorporate a minimum percentage of SRM into manufacturing. An example can be drawn from Malaysia's Biofuels Industry Act 2007, which creates a blending mandate for palm oil biodiesel with petroleum diesel (B5 blend) for the transport sector.

Government – Ministry of Investment, Trade and Industry (MITI)	*Source: Stakeholder Engagement meeting on 6th December 2024* As previously mentioned, the purpose of the Circular Economy Framework for Manufacturing Sector (CEF) is to give direction and a strong signal to the industry to prepare for the future implementation of the initiatives. However, MITI faced some challenges during the drafting of CEF, because there was pushback from the industry because of concern over recycling costs/prices if EPR were to be implemented. MITI is of the perception that such concerns could cause a longer gestation period for EPR in Malaysia. Besides industry pushback on EPR fees, government coordination on CE policy is the next challenge for MITI. However, MITI is optimistic that the CE transition would improve if MOE took the lead. According to MITI, MOE is currently undertaking an overarching policy study related to CE for Malaysia that will consider all the current CE frameworks from other ministries, which is set to be completed next year. As stated by MITI, the issue of lead agency for EPR remains unresolved. It is believed that generally EPR is under KPKT, however the agency does not have direct ties with or power over the manufacturing industry. MITI also highlights that they are not involved in setting up the Producer Responsibility Organisation (PRO) or introducing a mechanism for EPR fees; however they want to be part of the engagement process. As a step forward after the engagement session with various stakeholders, MITI plans to present the gaps/issues within the policy as well as EPR implementation in the next NCEC meeting. At this stage, there is no specific instrument in place to enable utilisation of SRM. MITI welcomes any relevant studies that would be helpful in implementing some of the initiatives and is interested in working together with SWITCH-Asia on using recycled material such as economic instruments to promote utilisation. MITI agrees that demand for recycled material is the key driver or enabler in CE.
Recycling Sector **Glass: Naturaall Glass Solutions (M) Sdn Bhd** **Plastic: Malaysia Plastics Recyclers Association (MPRA)**	According to a summary of the interviews conducted with Naturaall Glass Solutions and Malaysia Plastics Recyclers Association, two players in Malaysia's recycling sector, the main challenges in Malaysia's secondary raw material market are mainly the fluctuation of market prices of recycled waste feedstock compared to virgin material (virgin material is cheaper than recycled material) and the low quality and quantity of waste material in Malaysia. On the other hand, the informal sector in Malaysia is the main source of local waste material for recycling. However, because collection and recycling are done 'informally', it is difficult to establish data on the amount of waste collection and recycling. Hence, the opinion of the two players interviewed is that the informal sector should be formalised to improve the quality of the collection and recycling of secondary raw material market and provide clearer reporting of waste flow. Naturaall Glass Solutions and Malaysia Plastics Recyclers Association also provided the following suggestions for SRM market improvement and EPR implementation: 1. Standards and regulations for recycled material content are needed to create local demand for SRM 2. Improvement of source segregation and collection rates are needed to increase local material source for recycling 3. A formal EPR regulation is needed because the local market is regulation driven. *Source:* • *Glass Recycler Stakeholder Engagement meeting on 12 September 2024* • *Plastic Recycler Stakeholder Engagement meeting on 24 October 2024*

Producers – MAREA

Source: Stakeholder Engagement meeting on 15 November 2024

A stakeholder engagement was also conducted to interview the CEO of MAREA, Mr. Roberto Benetello. MAREA stated that initially, under Malaysia Plastics Sustainability Roadmap 2021–2030, Malaysia has stipulated nationwide, for 2023–2025, the adoption of Voluntary EPR specifically for plastic, and targeted the transition into a mandatory EPR scheme in 2026. However, based on the latest Circular Economy Blueprint for Solid Waste in Malaysia (2025–2035), the plan for mandatory EPR has been extended to solid waste in general without specifying which waste is prioritised first, and the timeline is targeted between 2025–2035 instead. According to MAREA, this has led to a slowdown in mandatory EPR implementation as well as less commitment from other producers in partaking of EPR. Currently, MAREA is working with the Ministry of Housing and Local Government (KPKT) to take a lead role as a PRO in a simulated mandatory EPR phase in 2025, and is looking for more direction and support from the government.

MAREA thinks there are currently not enough producers in their PRO in terms of EPR fees and scale to enable proper PRO operation in a simulated mandatory EPR phase. According to Mr. Benetello, MAREA needs at least 50–60 large-scale producers compared to the current 13 main contributors. Moreover, working with existing waste collection infrastructure is proving to be challenging because of misalignment of interests in promoting waste separation at source.

It is MAREA's opinion that the best way for a PRO to pay the informal sector is through the recycler, because with this the PRO does not need to deal with individual informal workers; it must also be noted that they cannot work with illegal immigrants. They believe that the recycler will deal with the informal sector and trinkle down the payment to the informal sector. Once the supply is established, they will go in to monitor the supplier of the recycler to look at their social condition and improvement options.

Last but not least, MAREA also provided some suggestions for EPR implementation in Malaysia.

1. An association/platform for the informal sector is missing in Malaysia
    a. In Malaysia, it is impossible to achieve higher collection/recovery rates if the informal sector is excluded
    b. An association for the informal sector is needed to advocate and represent the informal sector to deal with EPR on their behalf instead of individuals within the informal sector
    c. This association will also help to onboard, formalise and offer training programmes to the informal sector
2. Governance system that looks into the data reported by PRO/producers is needed
    a. Currently GIZ, KPKT and MAREA are collaborating to create a web-based database that will monitor performance of companies including:
        i. Packaging footprint (material input and product output) of company
        ii. Target set by government (collection, recycling etc.)
        iii. Actual collection of materials by companies
    b. In addition, an audit process is a requirement for the integrity of the performance by companies
3. Study and registry of participants in the EPR Ecosystem
    a. A formal structure (registry, for example) is needed to understand the ecosystem of the EPR system and map the participants who are involved, for example recyclers and people in informal sectors
    b. The study will also determine what needs to be done to improve the current condition of the recyclers and informal sectors for the EPR ecosystem
    c. The registry will need to certify the participants and monitor their recycling condition & output

Table 12c. Stakeholders' perceptions of and inputs regarding future implementation of EPR in Malaysia during the National Consultation Workshop on 26 March 2025

Stakeholders	Key points and inputs
Government - Ministry of Housing and Local Government (KPKT)	KPKT mentioned that policy-making for SWM is under KPKT. The Circular Economy Act can be co-created by multi-ministry commission and serve as a 'Mother Act' for CE-related legislation. KPKT also stated that the EPR Regulation will be prepared for different types of waste by each of the relevant ministries. Moreover, the EPR policy framework will be industry-friendly and EPR will be industry-driven.
Government - Ministry of Investment, Trade and Industry (MITI)	MITI is focusing on upstream-related EPR development such as product design. MITI shared that concern about cost is the main issue for industry transition to CE. The industry requires a push factor – which is the mandate/ regulation – and the pull factor – which is a government incentive such as an eco-design incentive to encourage this transition. To enable the implementation of government incentive for CE activity, MITI is of the opinion that the government needs to define the taxonomy to classify activities that are relevant to CE first. MITI also agrees that availability of data is an important enabler for EPR in terms of tracking and monitoring of performance, especially for transition to mandatory EPR implementation.
Government - Ministry of Economy (MOE)	MOE highlighted the need to consider the provision of social security to the informal sector as part of the inclusion of informal sector in EPR and CE.
Malaysia Plastics Manufacturers Association (MPMA)	MPMA highlighted the concern regarding packaging waste from the e-commerce sector, which is substantial in Malaysia. MPMA said that the Malaysia Design Council (MDC) together with SIRIM had developed an industry standard which aims to define good circular design practices: MRM04:2024. According to an article by *The Edge*,[8] this standard sets out strategies for how companies can become circular by recycling or reusing internally generated waste as materials, or implementing minimum recycled material content, for instance. It includes a series of questions to support circular product design requirements and a circular design evaluation score sheet, among other things. MPMA also said that the categorisation of waste in the existing Malaysia legislation may limit the treatment options (e.g. recycling) of the waste; for example, plastic medical packet waste, which is classified as scheduled waste, already has a specific prescribed treatment method. For the waste to have a recycling option, coordination with stakeholders is needed to allow recycling instead of prescribed treatment method.
Lasaju Consulting Sdn Bhd	This stakeholder highlighted the need for flexibility in waste collection solutions along with EPR, while also not compromising on the standards for waste management (e.g. safety, quality).
SWITCH-Asia Expert - Mr. Sachin Joshi	Mr. Sachin agrees that the social security of the informal sector should be considered, and the stake of these waste collectors in the informal sector should be protected so that they do not lose their livelihood, and so that their lives are also improved. The EPR system should also consider the sustainability and stability of financing the inclusion of the informal sector to include a minimum level of income and fair funding mechanisms instead of having to depend on the market price of recycled materials.

8 https://theedgemalaysia.com/node/741307

6. ASSESSMENT OF ENABLING FACTORS FOR EPR WITH RESPECT TO CIRCULAR ECONOMY IN THE COUNTRY

Based on the review of existing policies, roadmaps, regulations as well as findings derived from interviews and consultations with relevant stakeholders, an assessment was carried out to review the current local situation against the enabling conditions for an effective EPR system. The various enabling conditions are summarised in the Figure 13, below.

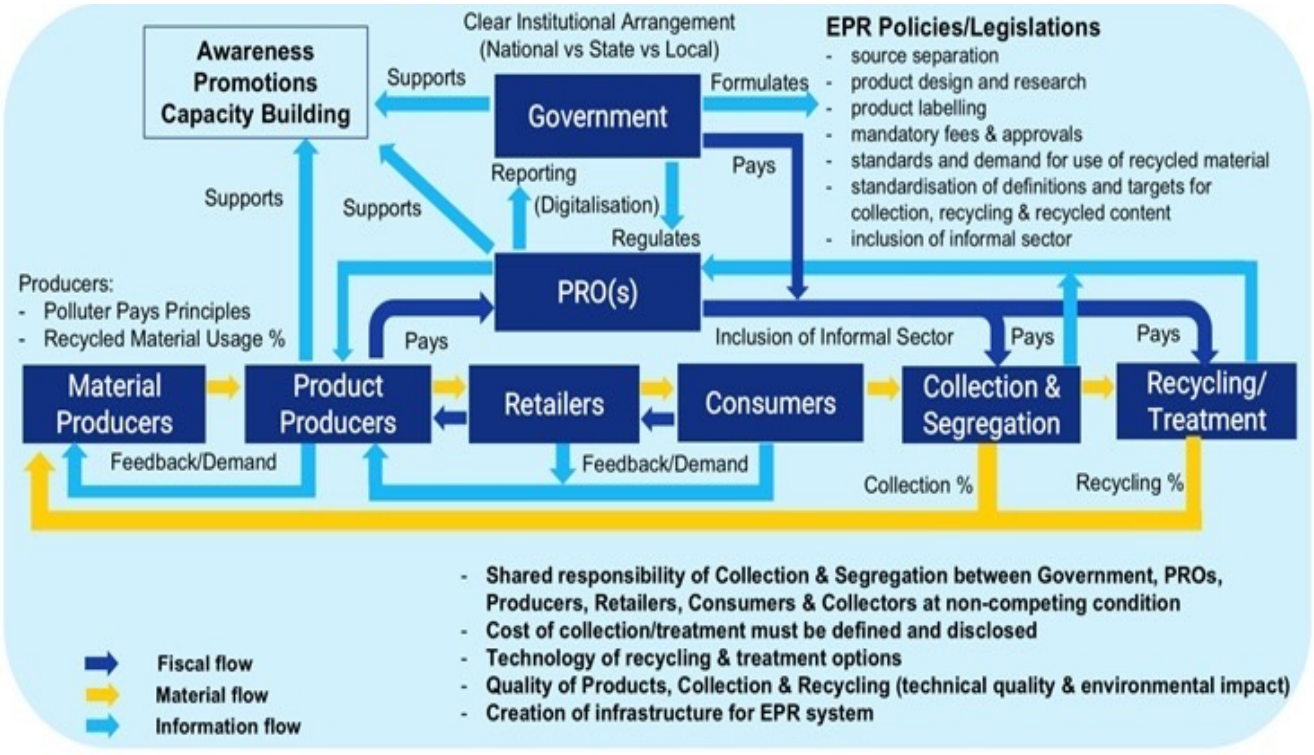


Figure 13. EPR Enabling Conditions Framework

For Malaysia, the general gaps and challenges from this assessment are summarised in Table 13, below.

Table 13. Gaps and challenges regarding EPR enabling conditions with respect to CE

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Clear institutional arrangements, EPR policies & legislation	• Lack of uniform legal framework for circular economy and EPR implementation • Fragmented monitoring and enforcement of SWM due to absence of uniform legislation/ regulations (i.e. different legislation and regulation according to the individual states (Act States or Non-Act States) • Lack of key lead and coordination between government agencies for circular economy and EPR implementation • Lack of capacity building and human capital by government & industry, especially with regard to the regulations for monitoring EPR	**For Legislation and Institutional Arrangements** • The National Circular Economy Council (NCEC) was established in 2023 under the leadership of KPKT as a platform to coordinate national stakeholders towards circular economy and EPR implementation • The Circular Economy Bill is proposed in the Circular Economy Blueprint for Solid Waste (CEB) to address the lack of uniform legislation for circular economy, under which EPR legislation will be drafted. According to KPKT, this legislation will be a multi-ministry approach due to cross-cutting issue of CE; currently the proposed bill is in progress • It was stated in CEB (Initiative CEI 2) that KPKT will lead EPR implementation for solid waste and be supported by other ministries (MOE, NRES, MITI, MTDCL) • The NCEC meeting on 9 May 2025 chaired by KPKT Minister Nga Kor Ming, has approved, in principle, the proposed EPR Policy Framework which KPKT will present the outcomes of the meeting for the Cabinet's consideration and approval. However, details of the EPR Policy Framework are not publicly available at the moment. • Based on the stakeholder engagement and assessment, the institutional arrangement for CE and EPR is moving in the right direction, but clarity regarding the roles and responsibility of each stakeholder will need to be provided.
Mandatory fees & approvals	• The timeline for mandatory EPR implementation is dilated, and EPR is still on a voluntary basis • Concern from the manufacturer regarding the transparency of use for EPR fee collected • Feedback on low willingness and commitment to pay EPR fee for any electrical and electronic (EE) product that will be put on the market from stakeholders, especially small and medium-sized enterprises (SMEs). • Low fee for existing waste management practice	**For mandatory EPR implementation** CEB (Initiative CEI 2) states that the timeline is 2025–2035. It was also stated in Circular Economy Policy Framework for the Manufacturing Sector in Malaysia (CEF) (Initiative C3) that MITI will also prepare industry to transition from voluntary EPR schemes to a mandatory EPR schemes over a 3–5 year timeframe in key sectors such as E&E and packaging. There is awareness of the need for uniform legislation for circular economy and creation of EPR legislation by the government which is also highlighted in CEB. However, the timeline to develop the required legislation that will lead to mandatory EPR implementation urgently needs to be defined.

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Standards and demand for use of recycled material	• There is a lack of government focus on the upstream processes of products, i.e. product design, requirements for recycled content in products, design for ease of sorting and recycling • Lack of local demand from manufacturers to use recycled materials in products • No regulation to mandate the use of recycled material in manufacturing • Concern about and absence of halal labels for recycled raw materials such as plastic for packaging food • Fluctuating demand for recycled material within local market • Inconsistent availability and quality of local waste material supply • SRM market for low value (e.g. glass) and hard-to-recycle materials (e.g. multilayer flexibles) is not well established due to the lack of technology in Malaysia for recycling and accessing recycled feedstocks; also missing are recyclers/investors to buy into the technology.	**Government focus on mandating the use of recycled material in manufacturing:** The CEF (Initiative A2) states that there will be mandate on specific products contain a minimum percentage of circular/recycled materials. Key activities will include defining eligible types of circular content (e.g. recycled, reused, or remanufactured content), as well as defining the specific threshold for circular content in key product categories such as packaging, E&E, and consumer goods. The aim is to establish gradual increases in minimum content requirements to allow industries more time to adapt. This will be backed by transition programmes to support companies, as well as the introduction of grants, subsidies, or tax incentives to encourage and/or enable the participation of SMEs. However, according to the CEF, this initiative will require an extensive analysis by or coordination with other stakeholders (e.g. industry, cross-ministries) and is dependent on market demand (e.g. upskilling). Based on the CEF, the legislation on minimum circular content requirements is targeted to be completed in 2027. **Market creation for local recycled material** It was stated in the CEB (Initiative CEI 10) for MITI to lead on planning the market development for local recycled material. The timeline for this initiative is 2025–2030. This initiative includes: 1. Exploring suitable incentives, grants and aids for the industry to build market and local supply chain for recycled material 2. Promoting GGP by encouraging government agencies to use products made of recycled materials 3. Encouraging involvement of GLIC and GLC in funding for R&D projects focusing on developing technologies to recycle materials and circular economy-based businesses. Also paired with the CEB (Initiative CEI 16) is the introduction of economic instruments to encourage private sector involvement in CE business activities. The timeline for this initiative is 2025–2030. This initiative includes: 1. Identifying and exploring schemes for tax incentives, subsidies or grants that can be offered to start-ups and SMEs 2. Listing the qualification criteria and expectations for start-ups and SMEs to receive incentives, subsidies or grants, while setting key performance indicators (KPI) for performance monitoring 3. Promoting schemes to startups and SMEs to encourage more production of products based on recycled materials through compliance to GGP 4. Encouraging strategic cooperation between start-ups and SMEs with GLIC and GLC regarding knowledge and technology sharing for businesses based on recycled materials.

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Inclusion of informal sector	• Competition from informal sector for recyclable waste collection • Significant informal sector presence • Lack of safety procedures and environmental standards of waste handling by informal sector • Distrust of the informal sector with authority • Difficulty in obtaining information from informal sector • Lack of initiative to integrate the informal sector • Lack of association or platform for informal sector	None, according to best knowledge
Collection and segregation	• Low value and hard-to-recycle material such as composite plastics, multilayers and laminates are not sorted at source and recycled. • Limited awareness of sorting and segregation at source (SAS) • Low success rate of SAS implementation due to the lack of enforcement as well as the lack of proper recycling supply chain ecosystem execution • Fragmented implementation of SAS at various states	**Separation at source (SAS) implementation** • Under Act 672, SAS is enforced only for the Act States, but not for Non-Act States. Non-Act States will implement SAS at their discretion. The government has continuously promoted the improvement of SAS, which is also evident through highlighted strategies in the National Cleanliness Policy 2020–2030 as well as the CEB to promote waste separation and reinforce its implementation • It was stated in CEB (Initiative CEI 17) that PAYT (pay-as-you-throw) schemes for the commercial, institutional, industrial and construction sectors will be implemented to reduce waste sent to landfill and to encourage SAS with a timeline between 2025–2035. The action plans include: 1. Conducting feasibility study on PAYT scheme for all of Malaysia consisting of: readiness of parties involved; infrastructure and facilities; implementation mechanisms; enforcement, reporting and traceability 2. Engagement sessions with industry to ensure PAYT mechanisms can be implemented 3. Enforcing PAYT based on the feasibility findings throughout Malaysia

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Recycling/Treatment	• Absence of reporting and monitoring mechanism for recycling materials • Lack of proper mapping of participants involved such as recyclers and the informal sector • Recycling capacity is focused mainly on imported waste material, and faces barriers for expansion due to lack of local demand	**Reporting and monitoring for recycling materials** It was stated in CEB (Initiative CEI 11) that the data gathering and analysis of waste ecosystem need to be streamlined and undergo full digitalisation. The timeline for this initiative is set for 2025-2030. The action plans include: 1. Evaluating current state of data gathering and analysis in SWM to identify the gaps and fields that needs to be improved through gap analysis 2. Identifying the data that need to be gathered to ensure transparency and traceability in SWM. The required data include waste generation, collection, transportation, treatment, disposal and recycling including imported waste, and exported recycled products 3. Determining the system and digital platform that can integrate with existing systems **Proper mapping of recyclers and informal sector** CEB (Initiative CEI 05) states that the licensing system for SWM ecosystem will be reinforced to register all parties involved in the SWM supply chain to facilitate monitoring and training. The timeline for this initiative is 2025–2035. The action plans include: 1. Engagement and consultation with industry players, including solid waste collectors, aggregators and recyclers 2. Developing a suitable licensing framework/guideline for each category of licensee 3. Promoting digital applications for solid waste collectors, aggregators and recyclers involved in the application and approval of online licenses (i.e. digitally) However, it was not specifically mentioned that the licensing system for the SWM ecosystem will include the informal sector in the SWM supply chain, as this sector also drives the recyclable waste market in Malaysia.
Consumer awareness, responsibility and accountability	• Lack of awareness of their responsibility to ensure waste generated is sent to authorised recycling facilities • Lack of awareness of their responsibility to ensure waste is separated at source	**Consumer awareness** CEB (Initiative CEI 20) states that the government will empower industry-led CEPA programmes including EPR, PAYT initiatives, eco-labels, SAS, recycled material, and the benefits of recycling. This initiative is to be led by industry associations to carry out CEPA programmes at all levels of consumers involved in the CE supply chain. The government will support consumer awareness in terms of promoting CEPA programmes and disseminating information to the public. The timeline for this initiative is 2025–2035. The action plans include: 1. Developing a CEPA plan comprising a comprehensive communication strategy through various channels of public service campaigns, social media, conventional media and public events 2. Involving social media influencers in the promotion of CE initiatives 3. Regularly monitoring the effectiveness of the communication strategy being employed and conducting analysis on CEPA effectiveness as well as identifying gaps for improvement

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Establishment of PRO(s)	• Lack of trust between government and industry • Lack of commitment from local producers • Lack of capacity for CE and EPR from local producers • Working with existing waste collection infrastructure is proving challenging because of misalignment of interest in promoting waste separation at source	**Dialog and communication between industry and government** CEB (Initiative CEI 3) states that the government will establish the National Circular Economy Association (NCEA) as a platform for industry players to implement, plan, and lead CE initiatives in Malaysia. The NCEA will work closely with NCEC at national level. The role of this industry association is to facilitate fixed dialog sessions between members as well as to coordinate CE initiatives for implementation. Meanwhile the government will receive NCEA suggestions and take them into consideration for the development of CE policy and laws. The timeline for this initiative is 2025–2026.
Product design	• Limited government focus on correlating or incorporating product design improvements with EPR implementation to enable circularity of products (including prolonging product lifecycles through durability, reuse, repairability, and the return of materials to new uses)	**Mandatory Implementation of Eco-Design** The NCEC meeting on 9 May 2025 chaired by KPKT Minister Nga Kor Ming, has agreed to the proposal for the mandatory implementation of eco-design submitted by NRES. However, details of the proposal on mandatory implementation of eco-design are not publicly available at the moment. **Circular economy product design awareness** The circular design practice standard, MRM04:2024, developed by Malaysia Design Council (MDC) together with SIRIM, is an industry standard that has set out strategies for how companies can become circular by recycling or reusing internally generated waste as materials, or implementing minimum recycled material content, for instance. However, this standard is only a guideline for the industry in terms of the general concept of circular design for products and which product attributes are considered circular. No specific specification or product design criteria defined for any product group exists yet with which companies may comply. **Product design improvement** CEB (Initiative CEI 6) states that the government will establish legislation on packaging to ensure the material contents as well as the recycling value of the product is transparently indicated. The recycling label will display the type of material used, its recyclability, steps to recycle, and post-consumer collection locations. The timeline for this initiative is 2025–2030. The action plans include: 1. Formulate and implement packaging laws that mandate labelling requirements for certain product 2. Examining the suitability of certifications for products that meet labelling requirements 3. Establishing a monitoring and enforcement mechanism to ensure compliance with packaging law Furthermore, CEB's (Initiative CEI 7) stated that MITI will take the lead in developing guidelines for specifications on product design and packaging for referencing by manufacturers. The timeline for this initiative is 2025–2030. The action plans include: 1. Development of design guidelines that set out best practices for sustainable product and packaging design, including materials, manufacturing processes, and treatment and disposal methods 2. Conducting stakeholder engagement or public consultations to obtain feedback from industry, manufacturers, and consumers, including occupational safety and health considerations in the production of products

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Product design (cont.)		The CEB also stated under Initiative CEI 8 that Zero-Waste-to-Landfill certification will be introduced to acknowledge producers' initiatives for product designed based on resource-efficient and waste-minimisation principles. According to CEB, this will encourage waste diversion from landfill (medium-term). This initiative will be led by KPKT; the estimated timeline for this initiative is 2025–2030. The action plans include: 1. Establishing certification criteria and process for Zero-Waste-to-Landfill status 2. Develop an auditing mechanism via the relevant government agency 3. Implementing promotional programmes to encourage companies to apply for Zero-Waste-to-Landfill certification The CEF (Initiative: D1) states that the target is to develop standardised CE certification for labelling and reporting. However, it was highlighted that mandatory eco-labelling would require legislation, starting with labels indicating the recyclability of products and expanding to other aspects of circular economy (e.g. *rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose and recycle*). This initiative will ensure that labelling schemes align with upcoming international standards by monitoring and informing industry about new international eco-labelling and digital product passport requirements. It will also examine how the improved labelling scheme will fit into existing frameworks such as SIRIM's eco-labelling scheme and MyHIJAU. A playbook will be developed to advise companies on how to comply with international standards. This initiative also aims to increase outreach and encourage adoption of voluntary CE certifications among SMEs by providing subsidies for them to adopt these schemes. This initiative is categorised as high in relative impact on CE and high on relative ease of implementation by CEF and will require extensive analysis or coordination with other stakeholders (e.g. industry, cross-ministry). The timeline is targeted to be Q2 2025 until 2030.

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Monitoring and verification of targets	• Absence of proper baseline and target setting benchmark for EPR compliance • Absence of reporting and monitoring system for recycling materials • Absence of governance system for EPR reporting and compliance	**Digital infrastructure** Included in CEB (Initiative CEI 11) above. Governance system for EPR Reporting and Compliance According to MAREA, currently GIZ, KPKT and MAREA are collaborating to create a web-based database that will monitor the performance of companies including: 1. Packaging footprint (material input and product output) of company 2. Target set by government (collection, recycling etc.) 3. Actual collection of materials by companies This initiative will also require an audit process for the integrity of the companies' performance, and can be seen as progress towards ensuring monitoring and verification of targets that will be set in EPR. It was stated in CEF (Initiative: A2) that mechanisms for monitoring and verification of circular content will be established as part of the implementation of minimum circular content requirements. Regular audits and inspections will be enabled to ensure compliance. Provisions will be included for a third-party certification scheme to support these efforts, including funding and transition mechanisms. Penalty mechanisms will also be established for non-compliant companies. This initiative is categorised as high in relative impact on CE, but low on relative ease of implementation by CEF because it will require extensive analysis and/or coordination with other stakeholders (e.g. industry, cross-ministry). The timeline is targeted to be Q2 2025 until 2030. It was also stated in CEF (Initiative: D5) that MITI also aims to develop national-level metrics to track CE progress across Malaysia, with clear accountabilities and reporting. It will (1) align on CE indicators to track and monitor, (2) set up mechanisms for untracked data, (3) establish alignment on collection and reporting responsibilities, and (4) build a centralised dashboard for CE. This initiative is categorised as high in relative impact on CE and high on relative ease of implementation by CEF and which can be kick started by MITI teams, but may require setting up of new systems or undertaking additional detailed studies. The timeline is targeted to be Q1 2025 until 2030.

EPR enabling conditions	Gaps and challenges	Relevant policies, Actions in effect, Progress
Preferential policies for business in material recovery / value retention / enhancement	• Unattractive business/market environment for establishing or expanding circular-economy related business • Lack of incentive to encourage adoption of CE into business • Lack of disincentive to discourage business with less CE incorporation	**Preferential policies** Included in CEB (Initiative CEI 10 and 16) above. Although there are existing incentives programmes such as Pioneer Status (PS), Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE) available, these incentives programmes include only specific eligible activities, and these may not cover all CE-related activities, and they are catering to mainly larger-scale investment. The CEF (Initiative: D2) stated that the government plans to identify high-value CE activities and provide support to manufacturers producing exports that are affected by CE requirements in destination markets. This initiative will (1) identify key CE activities to prioritise high-value FDI and exports, (2) adapt existing incentive lists and other support mechanisms, (3) encourage international cooperation to promote business partnerships, and (4) provide support to Malaysian companies looking to remain competitive in the changing global CE landscape. However, according to MITI, a taxonomy to create standardised definitions and criteria for CE-related activities is required to serve as the foundation for regulatory measures, incentives, financing programmes and other initiatives within the CE roadmap, and should be incorporated into nationwide investment promotion and FDI-attraction activities. This is listed as an initiative in the CEF (Initiative D4). An example of CE taxonomy was referenced by the CEF to the EU taxonomy for sustainable activities (Commission Delegated Regulation (EU) 2023/2486 of 27 June 2023 supplementing Regulation (EU) 2020/852), the CEF mentioned that the example referenced has set clear definitions of CE activities under the objective of 'transition to a circular economy'. Initiative D2 and D4 are categorised as low in relative impact on CE and high on relative ease of implementation by CEF, which can be kick-started by MITI teams but may require setting up new systems or undertaking additional detailed studies. The timeline is targeted to be Q1 2025 until 2030. Furthermore, it was also stated in the CEF (Initiative D7) that there is a proposal to set up a platform for companies to jointly participate in and partner with Government to raise awareness on their CE products and business models to consumers and other businesses. This initiative is currently ongoing until 2030 and can leverage ongoing/ existing efforts, programmes and infrastructure.

7. CONCLUSIONS AND THE WAY FORWARD FOR EPR TO WORK FOR CE IN MALAYSIA

Overall, the implementation of extended producer responsibility (EPR) in Malaysia is still in its infancy. The policy directions for considering EPR as a tool enabling circular economy (CE) can be seen in the various roadmaps and blueprints already established. However, with no EPR-related regulations in place, applying EPR remains quite limited.

Specific laws related to CE are being proposed, and coordination among the cross-cutting sectors is improving, but as yet nothing has been optimised for the time being.

In general, the focus on EPR is currently more on waste collection but the actual recycling and circularity of material has yet to be a focus.

Recommendations to enhance EPR enabling conditions

EPR Enabling Conditions	Recommendations
Awareness and capacity building	• Awareness raising across different stakeholders will be required to ensure blueprints and roadmaps are clearly communicated to the affected parties • Capacity building programme involving learning from countries that has implemented similar EPR mechanism
Clear institutional arrangement, EPR Policies or Legislation	• Develop a holistic circular economy regulation that incorporate EPR implementation which cover different types of targeted waste • Determine clear lead agency (champion) of EPR implementation and delineate clear roles and responsibilities of the various stakeholders involved • Allocation of sufficient financial and human resources dedicated to implementing selected EPR schemes
Mandatory fees & approvals	• Set a progressive timeline including transition period to kick-start the entire EPR system in preparation of mandatory EPR scheme • EPR fees setting to consider not only collection and recycling rates, but also on the quality of recycling (circularity rather than downcycling) • Government to provide EPR fee incentive for SME of targeted sector
Standards and demand for use of recycled material	• Conduct study to assess the readiness of different manufacturing sectors to implement minimum circular content requirement • Market creation of secondary recycled material by law, including setting standards and regulation for recycled material content in product design • Improve source segregation and collection rate to increase local recycled materials as feedstock for recycling • Government to empower promotion and adoption for Halal-Certified recycled packaging within relevant sectors, based on existing initiative recognised by the Department of Islamic Development Malaysia (JAKIM) • Encourage innovation and researches into product design to incorporate secondary recycled material into manufacturing

EPR Enabling Conditions	Recommendations
Inclusion of informal sector	• Establish association or platform and formalise relevant informal sector as they are the backbone of the recycling industry contributing a lot in terms of environmental sustainability and circular economy • Provide information and training for informal sector workers in health and safety issues including environmental standards of waste handling • Ensure social security and its ability to sustain long term for informal sector are considered
Collection & segregation	• Enhance recycling collection infrastructure throughout the country
Recycling/treatment	• Improve existing standards of recycling and implement close reporting and monitoring mechanism • Improve existing recycling capacity by addressing the gap in local demand
Consumer awareness, responsibility and accountability	• Improve and empower industry to lead awareness programme on benefits of recycling • Improve awareness along with consumer responsibility and accountability through awareness campaigns, incentivisation schemes, or regulatory measures (e.g. enforcement)
Establishment of PRO(s)	• Incorporate every manufacturer or brand owner from the FMCG sector whose products are sold in the market as part of the EPR scheme • Establish a PRO operation system within target sectors, by means of which the government takes the lead on policy direction, while industry can oversee the role of the fund management • Appoint third party as neutral bodies that can help to co-ordinate and audited the work of PROs by ensuring that collection is provided everywhere to avoid cherry picking • Clear targets and compliance requirement must be set to ensure performance of PRO
Product design	• Require that a certain percentage of recycled materials be included in new products • Set various design requirements, such as specifying what materials are to be used (and not used) and for ensuring that materials are easier to dismantle at end of their life cycle • Incentivise manufacturers to reflect circularity elements in product design to ensure ease of implementing circular practice/closing the loop (e.g. recycling, reusing, repairing, reducing), and create mandatory standards for the quality of the recycled materials being used, to avoid specific environmental fees.
Monitoring and verification of targets	• Define clear definitions for data reporting and targets among stakeholders • Introduce a governance system to audit the data reported, such as actual collection and recycling rate, circularity of recycled material by PROs or producers, etc.
Preferential policies for business in material recovery, value retention, enhancement	• Create the market condition for business in material recovery, value retention, and/or enhancement by addressing the gaps in demand for use of recycled material • Expand coverage of CE-related activities eligible for incentives • Explore appropriate incentives, grants and assistance to be provided to industries that meet standards in developing local markets and supply chains for recycled materials

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