



# EXTENDED PRODUCER RESPONSIBILITY GUIDELINE ON PLASTIC PRODUCTS AND PACKAGING FOR INDUSTRIES IN INDONESIA

Published by:

Plastic Smart Cities

WWF-Indonesia, Jakarta 2022

<https://www.wwf.id/>

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## Acronyms and Abbreviations

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ADUPI	Indonesia Plastic Recycling Association	NPWRSI	National Plastic Waste Reduction Strategy Actions for Indonesia
APRINDO	Indonesian Retail Merchants Association		
BAU	Business as Usual	OECD	Organization for Economic Cooperation and Development
CH <sub>4</sub>	Methane		
CMMIA	Coordinating Ministry for Maritime and Investments Affairs	PE	Polyethylene
CO <sub>2</sub>	Carbon Dioxide	PET	Polyethylene Terephthalate
EPR	Extended Producer Responsibility	PHRI	Indonesian Hotel and Restaurant Association
g	grams	PP	Polypropylene
GGP	Great Giant Pineapple	PRAISE	Packaging and Recycling Association for Indonesia's Sustainable Environment
IBCSD	Indonesia Business Council for Sustainable Development	PRO	Producer Responsibility Organization
IPR	Individual Producer Responsibility	PS	Polystyrene
IPRO	Indonesia Packaging Recovery Organization	PVC	Polyvinyl Chloride
kt	kiloton	R&D	Research and Development
l	liter	SMEs	Small and Medium-sized Enterprises
ml	milliliter	t	metric ton
Mt	Megaton	TPS <sub>3</sub> Rs	Material Recovery Facility/MRF
MoEF	Ministry of Environment and Forestry of the Republic of Indonesia	WWF	World Wide Fund for Nature
MoEFCC	Indian Ministry of Environment, Forest and Climate Change		
MNCs	Multinational Corporations		
NGO	Non-governmental Organization		
NPAP	National Plastic Action Partnership		

## Glossary

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**Circular Economy:** a system change framework which aims to address global challenges, including climate change, biodiversity loss, waste, and pollution. Circular economies are designed to circulate products and materials so that they are used continuously at their highest value and to prevent the production of 'waste', as all by-products are utilized.

**Extended Producer Responsibility (EPR):** a policy framework that regulates the significant financial and/or physical responsibility of producers to reduce and manage waste generation from their products and packaging. In principle, assigning such responsibilities to producers brings several advantages in preventing waste at sources, combating waste litter, promoting product design for the environment, and supporting the recycling and material management goals of the respective country.

**Producer Responsibility:** a scope of responsibility for producers to reduce and manage waste generation from products and packaging manufactured from non-reusable, recyclable, and biodegradable material. These producer responsibilities are regulated under 'Law No. 18/2008 on Solid Waste Management' and 'Government Regulation No. 81/2012 on Domestic Waste and Similar Waste Management'.

**MoEF Regulation No. 75/2019:** a legal framework issued by the Ministry of Environment and Forestry of Indonesia (MoEF) as a basis for EPR regulation in Indonesia, outlined in the 'Roadmap for Waste Reduction by Producers'. The regulation contains stepwise guidance for producers to comply with 'Law No. 18/2018' and 'Government Regulation No. 81/2012'. Furthermore, this regulation sets out a target for producers to reduce the waste generated from the sales of products and packaging by 30% before 2029. The scope of producers regulated in this roadmap includes: 1) manufacturers, such as food and beverage industries, consumer goods, and personal care; 2) food and beverage services, such as cafés, restaurants, catering, and hotels; and 3) retail, such as shopping centers and modern and traditional markets.

**EPR Regulation:** a shortened term referring to 'MoEF Regulation No. 75/2019'.

**Producers:** a group of business entities or organizations that are incorporated into the scope of 'MoEF Regulations No. 75/2019', including manufacturers, food and beverage services, and retailers.

**Producer Responsibility Organizations (PRO):** an organization's operators work – on behalf of producers – in full compliance with EPR schemes, handling EPR fees, engaging producers, and issuing contracts with waste management operators.

### Sources:

Ellen Macarthur Foundation. Circular Economy Glossary. <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/glossary>  
Organization for Economic Cooperation and Development (OECD). Extended Producer Responsibility. <https://www.oecd.org/env/tools-evaluation/extendedproducerresponsibility.htm>  
World Wide Fund for Nature (WWF) Thailand. (2020). Scaling Up Circular Strategies To Achieve Zero Plastic Waste in Thailand.

# ABOUT THE REPORT

## **Purpose**

This report intends to strengthen business readiness, both in the sense of EPR implementation and in the transition towards a more collaborative, fair, and impactful circular waste management system for all involved actors, by reviewing and assessing the current progress of EPR development and circular economy direction in Indonesia. This report also seeks to provide key insights into overcoming barriers encountered by producers and recommendations for identifying opportunities in the upstream and downstream business of establishing a mandatory EPR scheme.

## **Desired outcomes**

- To extend the socialization of the issuance of 'MoEF Regulation No. 75/2019' as a basis for EPR regulation in Indonesia.
- To serve as a knowledge base for stakeholders and better understand the current state of EPR implementation in Indonesia;
- To bring together stakeholders across the plastic packaging value chain to connect, collaborate, and participate in a strategic action plan.
- To provide support and guidance for multinational corporations (MNCs), local/national companies, and small and medium-sized enterprises (SMEs) during the transition period of EPR implementation and compliance.
- To generate awareness on a wider level around the benefits of reducing product and packaging waste.
- To serve as key performance indicators (KPIs) for future EPR policy evaluations.
- To build a case for empowering formal and informal waste actors in their efforts to support national EPR targets.

## **How to read this report**

The first half of this report (Chapter 1 and 2) is intended to provide an overview of ongoing product and packaging waste management and expanding upon the general challenges posed by EPR implementation in Indonesia. Both chapters discuss Indonesia's product and packaging waste management, efforts taken by producers on reducing their product and packaging waste, and identification of opportunities to support Indonesia's transition towards a circular economy.

The second half (Chapter 3) is intended to provide producers with guidance towards EPR compliance and the circular economy. This half covers guidelines, key considerations, and a range of suggested activities for scaling-up circular strategies to achieve EPR targets beyond the national baseline.

# METHODOLOGY

## **Secondary Research**

Both desk research and a literature review were conducted in this study to collect existing information related to the waste management of products and packaging and enforcement of the 'EPR regulation' as a basis for an EPR roadmap in Indonesia. The general search terms selected for the literary analysis consisted of 'plastic and circularity', 'National Plastic Action Partnership' (NPAP), 'EPR', 'EPR global practice', 'waste management system', 'circular economy', 'producers responsibility', 'MoEF EPR regulation', 'informal sector', 'producer responsibility organization', and 'plastic and packaging value chain'. The keywords were combined in various ways specific to the study context to obtain a selection of narrowly determined and relevant articles, such as 'contribution of the informal sector to the waste management system in Indonesia', 'responses from producers related to the issuance of MoEF regulation No. 75/2019', and 'global best practice in EPR system'.

Relevance, credibility, and date of publication were primary considerations during source selection. Information sources were reviewed using the following criteria: 1) recentness of the article(s); and 2) quality and degree of information corresponding to the study's objectives and goals. The majority of articles cited were published within the last ten years of. The remaining gaps in data and information were addressed through methods of primary research, including stakeholder consultation.

## **Primary Research**

The information and data obtained from primary research was generated via semi-structured interviews, focus group discussions, and public consultation with relevant stakeholders. The consultation process included information gathering, verification, and clarification from key stakeholders across the plastic and packaging value chain in Indonesia.

## **Analysis**

The data and information generated through literature review and stakeholder engagement was analyzed and used as a foundation for identifying the core problems of and opportunities for EPR implementation in Indonesia. Furthermore, this analysis was extended to form the guidelines and recommendations for EPR implementation, with also include the comparative analysis on global EPR best practices and lessons learned.

# LIMITATIONS

The following are several obstacles encountered during the data collection and analysis process:

- **Data availability and confidentiality:**  
When trying to collect information related to financial frameworks (e.g., the waste management budget of producers and waste reduction partners), obtaining detailed data on fees, costs, and revenues proved particularly challenging.
- **Lack of representatives from SMEs:**  
A number of SME representatives were unable to attend to give information related to their perspective on the implementation of EPR in Indonesia during the stakeholder engagement period.



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## Background

Plastic waste management is considered a global issue. As much as 79% of the world's plastic waste is currently left to accumulate in the environment, mostly as a result of poor waste management systems and low collection and recycling rates.<sup>[1]</sup> Should this trend continue, 12,000 megatons (Mt) of plastic waste is forecasted to have leaked into the environment by 2050.<sup>[2]</sup>

Plastic waste leakage not only harms ecosystems and marine life, but also their ecosystem services, impacting human health, food production, and tourism among many other spheres of everyday life.

Indonesia is one of the world's plastic waste leakage hotspots. Four of Indonesia's rivers, the Brantas, Solo, Serayu, and Progo, are in the world's top 20 most-polluted rivers.<sup>[3]</sup> About 55% of fish sampled in a market in Makassar were found to have ingested plastic debris.<sup>[4]</sup> There are various statistics for plastic waste leakage in Indonesia, with one source in 2015 claiming as much as 1.29 Mt of unmanaged plastic waste ends up in the ocean per year.<sup>[5]</sup> Plastic also makes up a substantial portion of Indonesia's waste, constituting around 10.6% of Indonesia's total waste per year.<sup>[6]</sup>

<sup>[1]</sup> Geyer, Jambeck, & Law. (2017). National Plastic Waste Reduction Strategy Actions for Indonesia (NPWRSI) Document, Kementerian Lingkungan Hidup Republik Indonesia, 2020, 1–2.

<sup>[2]</sup> Ibid

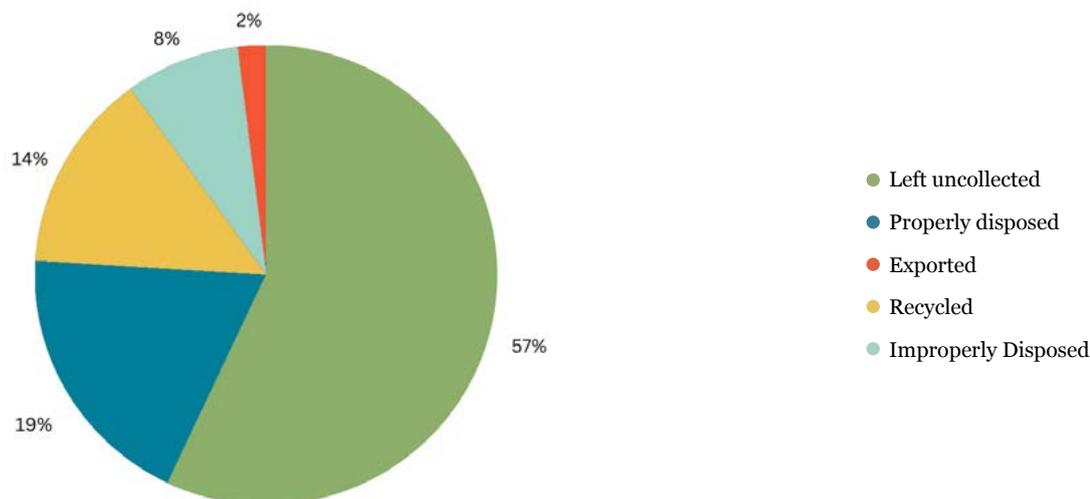
<sup>[3]</sup> Association of Southeast Asian Nations (ASEAN). (2017, July). Data from Nature Communications. NPWRSI. (2020).

<sup>[4]</sup> NPAP, 2020 - World Economic Forum (WEF). 2020. Insight report: Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan National Plastic Action Partnership

<sup>[5]</sup> Jambeck et al., 2015 dalam NPWRSI, 2020

<sup>[6]</sup> Sistem Informasi Pengelolaan Sampah Nasional (SIPSN). (2018). NPWRSI, 2020.

In 2019, 2,281 kt of post-consumer plastic packaging waste was generated in Indonesia, with only 19% of the waste was properly disposed and only 14% was recycled. Most of the waste which is 57% was left uncollected<sup>[7]</sup> (see Figure 1 below).



**Figure 1.** Product and Plastic Packaging Waste Management in Indonesia

Extended Producer Responsibility (EPR) policies are being viewed increasingly as an important tool for improving plastic waste management. The overarching aim of an EPR policy approach is to place the financial and/or physical responsibility of post-consumer waste management treatment or disposal onto the producers that manufacture these consumer products.<sup>[8]</sup> The idea is that this shift in responsibility would incentivize waste reduction and/or prevention at-source, e.g., through product design or support for recycling, reuse, and waste material management. On the other hand, EPR policy is seen as essential in transitioning to a circular economy<sup>[9]</sup> as EPR is said to be one of the most promising mechanisms in scaling-up finance for essential collection, sorting, and recycling activities until a redesign can be conducted at scale.<sup>[10]</sup>

As of 2019, Indonesia has implemented a roadmap for EPR system, otherwise known as the 'Roadmap to Waste Reduction by Producers' under the Ministry of Environment and Forestry of Indonesia Regulation No. 75/2019.<sup>[11]</sup> The roadmap established a target for producers to reduce the waste generated from the sales of products and packaging by 30% by 2029. Implementation of this roadmap is currently at the point wherein industries and producers must submit a long term EPR plan. At this juncture, the implementation of EPR in Indonesia will come with a host of challenges and barriers that will test the business readiness of industries or producers in scaling up their waste reduction strategies and meeting the national EPR target. A comprehensive guideline with a step-by-step approach towards EPR compliance could, therefore, provide essential support during the transition period while the EPR scheme is implemented in Indonesia.

The guideline is built on thorough analysis of both current EPR policy (i.e., the 'EPR regulation') and waste management systems and policies in general, on opportunities and barriers encountered by producers during the implementation period, and on the identification of opportunities in optimizing the role of actors across the product and plastic packaging value chain. Ultimately, the findings and strategic recommendations from the proposed study shall provide reference and support for accelerating the transition of Indonesia to a circular economy by way of the EPR scheme.

<sup>[7]</sup> PLASTEAX 2019 Indonesia report, [www.plasteax.org](http://www.plasteax.org)

<sup>[8]</sup> OECD, 2016 - Extended Producer Responsibility: Updated Guidance for Efficient Waste Management, NOECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264256385>

<sup>[9]</sup> Millette, S. & Morawski, C. (2017). EPR: The Cornerstone of a Circular Economy. Re Loop Platform. <https://www.reloopplatform.org/wp-content/uploads/2017/10/Member-Article-EPR-The-Cornerstone-of-a-Circular-Economy.pdf>

<sup>[10]</sup> WEF, Ellen MacArthur Foundation, & McKinsey & Company. (2016). The New Plastics Economy: Rethinking the future of plastics. <https://ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics>

<sup>[11]</sup> Permen LHK No.75/2019 - Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor P.75/MENLHK/SETJEN/KUM.1/10/2019 Tentang Peta Jalan Pengurangan Sampah Oleh Produsen. Find at [http://jdih.menlhk.co.id/uploads/files/P\\_75\\_2019\\_PETA\\_JALAN\\_SAMPAH\\_enlhk\\_12162019142914.pdf](http://jdih.menlhk.co.id/uploads/files/P_75_2019_PETA_JALAN_SAMPAH_enlhk_12162019142914.pdf).

# WASTE MANAGEMENT AND EPR IN INDONESIA

## STAKEHOLDERS IN THE WASTE MANAGEMENT SECTOR IN INDONESIA

There are many actors involved in the solid waste management sector in Indonesia, including the central government, local governments (at both the provincial and municipal levels), various industry associations, private waste management industries, and civil organizations. Table 1 summarizes these actors and their respective involvement in solid waste management in Indonesia.

**Table 1.** Summary of Roles and Responsibilities of Respective Actors in the Indonesian Waste Management Value Chain

Stakeholder name	Roles
<b>Ministry of Environment and Forestry (MoEF)</b>	<ul style="list-style-type: none"> <li>• Formulate, implement, coordinate, and synchronize policies regarding the reduction, recycling, and reuse of municipal waste</li> <li>• Formulate standards, procedures, and criteria for the reduction, recycling, and reuse of municipal waste</li> <li>• Provide and evaluate technical guidance for the reduction, recycling, and reuse of municipal waste</li> <li>• Supervise the implementation of municipal waste reduction, recycling, and reuse<sup>[12]</sup></li> </ul>
<b>Ministry of Public Works and Housing</b>	<ul style="list-style-type: none"> <li>• Prepare the formulation of policies in the development of solid waste management and drainage systems</li> <li>• Prepare the implementation of policies and construction quality assurance in the development of solid waste management systems</li> <li>• Prepare and supervise technical guidance in the development of solid waste management and drainage systems<sup>[13]</sup></li> </ul>

<sup>[12]</sup>MoEF. (2021). Ditjen PSLB3. Direktorat Jenderal Pengelolaan Sampah, Limbah dan B3. (2018). <http://pslb3.menlhk.go.id/ditjen-pslb3>

<sup>[13]</sup>Coordinating Ministry for Maritime and Investments Affairs (CMMIA). (2021). Deputi Bidang Koordinasi pengelolaan Lingkungan Dan Kehutanan. Kemenko Kemaritiman dan Investasi RI. (2021, July 5) <https://maritim.go.id/unit-kerja/deputi4/>

**Table 1.** Summary of Roles and Responsibilities of Respective Actors in the Indonesian Waste Management Value Chain

Stakeholder name	Roles
<p><b>Coordinating Ministry for Maritime and Investments Affairs (CMMIA)</b></p>	<ul style="list-style-type: none"> <li>• Coordinate and synchronize the formulation, setting, and implementation of policies from ministries related to issues in the environmental and forestry sector</li> <li>• Supervise the implementation of policies from ministries related to issues in the environmental and forestry sector<sup>[14]</sup></li> </ul>
<p><b>Ministry of Home Affairs</b></p>	<ul style="list-style-type: none"> <li>• Formulate overarching policies in the solid waste management sector for local governments, such as policies the structure of tipping fees and domestic waste management</li> </ul>
<p><b>Local governments</b></p>	<ul style="list-style-type: none"> <li>• Formulate, implement, coordinate, and synchronize policies in municipal waste management at the provincial and municipal levels</li> <li>• Supervise the implementation of policies in municipal waste management at the provincial and municipal levels</li> </ul>
<p><b>Industry associations</b> (e.g., recycler associations and recyclable collector associations, including informal sector associations)</p>	<ul style="list-style-type: none"> <li>• Synergize efforts in recycling between the government and members/industry players (e.g., the Indonesian Retail Merchants Association [APRINDO], the Indonesia Business Council for Sustainable Development [IBCSD], the Indonesian Hotel and Restaurant Association [PHRI], the Indonesian Plastic Recycling Association, and the Indonesian Plastics Recyclers)</li> </ul>
<p><b>Private waste management industries or producers</b></p>	<ul style="list-style-type: none"> <li>• Implement waste management activities, including disposal or recycling</li> </ul>

(Source: South Pole Compilation, 2021)

<sup>[14]</sup> Ministry of Public Works and Housing (MoPWH). (2021). Kementerian Pekerjaan Umum dan Perumahan Rakyat, Direktorat Jenderal Cipta Karya, Direktorat Sanitasi.

# REGULATORY FRAMEWORKS OF WASTE MANAGEMENT IN INDONESIA

1

## 'Law No. 18/2008 on Solid Waste Management' and 'Government Regulation No. 81/2012 on Domestic Waste and Similar Waste Management'

'Law No. 18/2008' is the policy umbrella for all waste management activities in the country. It sets out the central and local government's roles and responsibilities with regard to waste management and states the responsibility held by producers in managing their own waste. More specifically, Article 20 of 'Law No. 18/2008' states that, in an effort to reduce waste, businesses are required to use materials that produce the least amount of waste, i.e., those that are expressly reusable, recyclable, and/or biodegradable.

'Government Regulation No. 81/2012' further emphasized the responsibilities producers have towards waste reduction activities, particularly in relation to production materials and product packaging, as set out in 'Law No.18/2008'. Article 13 to 15 of the regulation mandates that producers gradually implement waste reduction activities laid out via roadmap over a 10-year period. This culminated in the establishment of the 'Roadmap to Waste Reduction by Producers' under the 'EPR regulation'.

2

## 'Presidential Decree No. 97/2017 on National Policy & Strategy on Management of Household Waste and Household-like Waste (JAKSTRANAS)' and 'Presidential Decree No. 83/2018 on Marine Debris Management'

'Presidential Decree No. 97/2017 on National Policy & Strategy on Management of Household Waste and Household-like Waste (JAKSTRANAS)' regulates policies and strategies concerning the management of household and household-type waste, setting a target of 30% waste reduction and 70% waste handling by 2025, while 'Presidential Decree No. 83/2018 on Marine Debris Management (Plan of Action on Marine Plastic Debris 2017–2025)' aims to reduce marine plastic litter by 70% between 2017 and 2025.

The national government has formulated the 'National Plastic Waste Reduction Strategic Actions for Indonesia' as a means of providing further directions for the implementation of each of these Presidential Decrees. The document outlines the '5-Year Action Plan for Plastic Waste Reduction in Indonesia' from 2020–2025, along with its accompanying monitoring and evaluation plans. EPR was also mentioned in the strategic action as one of the proposed solutions to the plastic problem in Indonesia.



**Figure 2.** Legal Framework of the 'EPR Regulation' in Indonesia

(Source: MoEF presentation at 'Advancing the Extended Producer Responsibility (EPR) for Packaging in Indonesia Towards the Implementation of the Roadmap for the Waste Reduction by Producer' thematic session of the 4th Indonesia Circular Economy Forum Day 2, July 22, 2021)

### 3

#### MoEF Regulation No. P.75/2019 on Roadmap to Waste Reduction by Producers

This regulation outlines the 'Roadmap to Waste Reduction by Producers' with the goal of achieving waste reduction of 30% by 2029 and is often referred to as the 'EPR regulation' in Indonesia. The roadmap aims to guide waste producers in implementing their responsibilities in reducing plastic, paper, aluminum, and glass waste generated from their good, packaging, and services.

The 'EPR regulation' outlines three possible components to producers reducing their waste:

1. Preventing and limiting potential waste generation as much as possible by implementing sustainable design (in the form of redesigned products and packaging), phasing-out single-use plastics, eliminating unnecessary and excessive packaging, making packaging more recyclable and reusable, creating packaging out of more recycled content, and producing more durable, returnable, rechargeable, and refillable goods;
2. Taking back post-consumer products and packaging for reuse; and
3. Taking back post-consumer products and packaging for recycling.

Producers are obligated under the 'EPR regulation' to submit their waste reduction roadmap in 2020, instigate piloting activities in 2022, and proceed with a full implementation of this roadmap from 2023–2029. The 'EPR regulation' provides the basis for a mandatory scheme in Indonesia through which plastic producers are to be held responsible for the waste generated from their own products. Going forward, robust monitoring and evaluation should be provided to those industries and producers that have already submitted their waste reduction roadmap, while intensive awareness raising activities and technical assistance should be administered to those that have not to ensure that the waste reduction target of 30% by 2029 is achieved.

This regulation targets producers in three sectors: manufacturing, food and beverage services, and retail.

"...THE WASTE  
REDUCTION  
TARGET OF  
**30%**  
BY 2029  
IS ACHIEVED"



**Figure 3.** Scope of Industry Sectors Regulated by the 'Extended Producer Responsibility Regulation'

(Source: MoEF Regulation No. 75/2019)

The aim is to guide waste producers in implementing their responsibilities in reducing plastic, paper, aluminum, and glass waste generated from their goods, packaging, and services.

In addition to the above, there are several other regulations in the waste management/reduction sector, as outlined in Tabel 2 in the following page:

**Table 2.** Summary of National Regulation of the Waste Management System in Indonesia

<b>National Law</b>	Law No. 18/2008 on Solid Waste Management		Law No. 32/2009 on Environmental Protection and Management		
<b>Government Regulation</b>	PP No. 81/2012 Government Regulation on Management of Household And Household-Like Waste	PP No. 101/2014 Government Regulation on Hazardous Waste Management	DRAFT Government Regulation on Excise on Plastic	PP No. 27/2020 Government Regulation on Specific Waste Management	
<b>Presidential Regulation</b>	Perpres No. 97/2017 Presidential Regulation on National Policy and Management Strategy of Household Waste and Household-like Waste	Perpres No. 83/2018 Presidential Regulation on Marine Debris Management	PP No. 18/2015 Presidential Regulation on Income Tax Facilities for Investment in Certain Business Fields and/or Certain Regions	Perpres No. 15/2018 Presidential Regulation on Acceleration of Damage and Pollution Control on Citarum River Basin	Perpres No. 35/2018 Presidential Regulation on Acceleration of Development of Waste-to-Energy Installation using Environmentally sound Technology
<b>Presidential Decree</b>	Keppres No. 61/1993 and No. 47/2005 Presidential Decree on Ratification of the Basel Convention on the Control of the Transboundary Movement of Hazardous Waste and Their Disposal				
<b>Ministerial Regulation</b>	Ministry of Trade Regulation No. 31/2016 on Non-Hazardous Waste Import	Ministry of Public Works Regulation No. 3/2013 on Implementation of Solid Waste Infrastructure and Facilities	Ministry of Environment and Forestry Regulation No. P.75/2019 on Roadmap to Waste Reduction by Producers	DRAFT Ministerial Regulation (MoEF) on Plastic Shopping Bag Reduction	
	Ministry of Trade Regulation No. 48/2016 on General Provisions in the Import Sector	Ministry of Trade Regulation No. 70/2015 on Importer Identification Number		Ministry of Trade Regulation No. 48/2015 on Requirements for Income Tax Facilities Implementation	
<b>Regional/ Local Regulation</b>	Regional/Local Regulations on Single-use Plastic Nan: • Pergub Bali No. 97/2018	<ul style="list-style-type: none"> <li>• Perwali Denpasar 36/2018</li> <li>• Perwali Bogor 61/2018</li> <li>• Perwali Banjarmasin 18/2016</li> </ul>		<ul style="list-style-type: none"> <li>• Perwali Balikpapan 8/2018</li> <li>• Perwali Padang 36/2018</li> <li>• Perda Purwakarta 37/2016</li> </ul>	

(Source: SWI Analysis in NPWRSI, 2020)

# EXISTING PLASTIC WASTE MANAGEMENT INITIATIVES OFFERED BY THE PRIVATE SECTOR

Prior to the enactment of the 'EPR Regulation', Six companies in Indonesia have set up initiatives to responsibly manage their waste prior, namely:

1. Coca-Cola Indonesia
2. Danone Indonesia
3. PT Indofood Sukses Makmur Tbk
4. PT Nestlé Indonesia
5. Tetra Pak Indonesia
6. PT Unilever Indonesia Tbk

The six companies are part of an organization called Packaging and Recycling Association for Indonesia's Sustainable Environment (PRAISE)<sup>[15]</sup>, an organization which, in a greater effort to fight the waste problem in Indonesia, PRAISE also launched the Indonesia Packaging Recovery Organization (IPRO) initiative in 2020.

Some of the activities they have performed include:

- Tetra Pak recycled more than 10,000 t of the 50,000 t of packaging waste it produced in 2018, achieving a recycling rate of roughly 20%, and increased their recycling rate target of 24% for 2020.
- Danone, collaborated with PT Veolia Services Indonesia to build the biggest plastic recycling factory in Indonesia, with a capacity of 25,000 t per year.<sup>[16]</sup>
- Between 2008 and 2020, Unilever Indonesia trained 3,859 waste banks across 37 cities in 12 Indonesian provinces. Unilever also managed to process 68 t of plastic waste through the use of recycled packaging, collect 13,200 t of plastic waste from their waste banks network, and work together with several local governments and a private company to collect and reutilize 3,070 t of plastic waste as refuse-derived fuel (RDF) in a cement factory.<sup>[17]</sup>

Other industries or producers external to PRAISE have also implemented waste reduction initiatives. In 2018, The Body Shop, following the launch of its 'Bring Back Our Bottle' initiative, saw 1.4 million used bottles brought back to its stores to be recycled,<sup>[18]</sup> while various restaurant chains, such as KFC (48 t), McDonalds (470 t), and Sate Khas Senayan (32.83 t), managed to reduce their waste through self-mandated initiatives in 2019.<sup>[19]</sup> PT Great Giant Pineapple (GGP), an agriculture company exporting fruits internationally, have also adopted circular economy practices in their business by using recyclable packaging for their fruit products and running take-back initiatives for their beverage products. As 100% of GGP products are exported to regions where consumers are more environmentally aware, adopting sustainable measures has proven crucial to maintaining their markets.

To help implement their own waste reduction initiatives, the industries or producers above work with various private organizations already involved in the plastic collection and recycling industry. The Body Shop, for instance, has been working with Waste4Change on its 'Bring Back Our Bottle' initiative. Waste4Change also operates a tipping-fee-based household waste collection and treatment service in Bekasi, West Java. Another private company working in the waste management sector is BaliPET, which collects polyethylene terephthalate (PET) bottles from waste pickers and drop boxes at retailers in Bali. It also has a plastic crushing factory with a capacity of 500 t PET/month.

As of June 2021, only 23 producers, or 16 from the manufacturing industry and seven from retail, have submitted their implementation plan for the waste reduction roadmap 2020–2029<sup>[20]</sup>, Indonesia needs to more producers to overcome its plastic waste issue.

<sup>[15]</sup> PRAISE is not currently accepting additional members. More information on PRAISE can be found on <https://praiseindonesia.com/>

<sup>[16]</sup> Ministry of Industry. (2021). Menperin Resmikan Pabrik Daur Ulang Plastik Terbesar di Indonesia [Press release]. <https://kemenperin.go.id/artikel/22621/Menperin-Resmikan-Pabrik-Daur-Ulang-Plastik-Terb Besar-di-Indonesia->

<sup>[17]</sup> Purningsih, D. (2019, September 3). Inisiatif Pengelolaan Sampah Perusahaan Swasta Terhadap Produk Kemasan. Greeners.co. <https://www.greeners.co/berita/inisiatif-pengelolaan-sampah-produk-kemasan/>.

<sup>[18]</sup> KLHK, 2020 - 23 Produsen Tunjukkan Komitmen Laksanakan Kewajiban Pengurangan Sampah [Press release]. [https://www.menlhk.go.id/site/single\\_post/4151/23-produsen-tunjukkan-komitmen-laksanakan-kewajiban-pengurangan-sampah](https://www.menlhk.go.id/site/single_post/4151/23-produsen-tunjukkan-komitmen-laksanakan-kewajiban-pengurangan-sampah)

<sup>[19]</sup> Waste4Change. (2019, September 13). Program Tanggung Jawab Produsen yang Diperluas (EPR) beserta Implementasinya di Indonesia. <https://waste4change.com/blog/epr-di-indonesia/>

<sup>[20]</sup> MoEF. (2020). 23 Produsen Tunjukkan Komitmen Laksanakan Kewajiban Pengurangan Sampah [Press release]. [https://www.menlhk.go.id/site/single\\_post/4151/23-produsen-tunjukkan-komitmen-laksanakan-kewajiban-pengurangan-sampah](https://www.menlhk.go.id/site/single_post/4151/23-produsen-tunjukkan-komitmen-laksanakan-kewajiban-pengurangan-sampah)





# Moving Forward with the 'Roadmap to Waste Reduction by Producers' under 'MoEF Regulation No. 75/2019'

Indonesian government is catching up with other countries in Asia by incorporating an EPR system into its national policy in an effort to combat plastic pollution, especially that which stems from products and packaging. 'MoEF Regulation No. 75/2019' (the 'EPR regulation') and the 'Roadmap to Waste Reduction by Producers' regulate the obligation for producers to reduce their waste from products and packaging by 30% before 2029. Through consultations with key stakeholders, including the MoEF, producers, and members of the formal and informal waste sectors, this section will present the implications of enforcing the 'EPR regulation', the opportunities made available during its implementation, and recommendations for overcoming potential barriers to implementation.

## **Implications of the EPR Scheme for Producers**

Indonesia's EPR scheme is still in an early stage of implementation. As such, it is difficult to provide judgements and evaluation as to the effectiveness of this EPR program in reducing waste production from products and packaging. However, since it was first launched, the 'EPR regulation' has received various responses from producers identified as obligated companies for EPR and key players within the product and packaging value chain.

Responses from larger, top-brand producers have mostly been positive, as they have already had initiatives related to waste reduction and the circular economy in place prior to the enforcement of regulations following commitments made by their directorate.

In general, the implications of the 'EPR regulation' on producers currently relies on administrative obligations. Producers targeted by the MoEF have an obligation to submit a 10-year waste reduction plan corresponding to the waste reduction guidelines presented in the 'EPR regulation'. While some producers complain that the regulations are ambiguous and contain guidelines that are unclear with regard to how EPR schemes should be administered, the MoEF offers coaching and consultation sessions to producers that need assistance with their EPR compliance. However, there is currently no punishment and penalty scheme for non-compliant industries or producers incorporated into the EPR system, meaning that these entities tend to 'avoid' their EPR obligations.<sup>[21]</sup> The enforcement of EPR regulations in Indonesia, therefore, has less significant implications for producers in Indonesia as it does not yet operate on a fully mandatory basis, with enforcement duties and effects falling more frequently upon administrative obligations.

This study identifies some of the challenges and opportunities that can either hamper or escalate the implementation of EPR in Indonesia. The obstacles and opportunities presented in this section onwards were derived from consultation with key stakeholders involved in the product and packaging value chain.

<sup>[21]</sup> Johannes, H. P., & Mizuno, A. (2021, November 17). Fighting plastic waste: Voluntary initiatives no longer enough. The Jakarta Post. <https://www.thejakartapost.com/opinion/2021/11/16/fighting-plastic-waste-voluntary-initiatives-no-longer-enough.html>.

# BARRIERS FOR INDUSTRIES IMPLEMENTING THE 'EPR REGULATION'

As discussed in previous sections, there are numerous challenges faced by industries in implementing the 'EPR regulation' in Indonesia. This section discusses these challenges further, suggesting how producers can either address them or transform them into opportunities.

## 1. Ambiguity around the 'EPR Regulation'

Although the 'EPR regulation' is in effect in Indonesia, the results of its implementation and enforcement remain to be seen, as the full implementation of the regulation will only start in 2023 as per the regulation timeline. However, the progress made on preparation activities can still be improved. During consultations with multi-sectoral players in the Indonesian waste sector, it was revealed that a few aspects stated in the regulations are not clear and need further clarification from the MoEF. Firstly, the scope of the regulation is unclear. Although it mentions targeted stakeholders, it does not further classify certain eligibility criteria and obligations for industries and producers under the regulation. Based on its current iteration, all industries and producers, regardless of size, should comply with the regulation. This is challenging, as smaller organizations may not have the necessary capacity to comply with the regulation.

Despite the MoEF advancing its efforts in capacity-building initiatives, yet more is still required, as several entities interviewed stated that more guidance and training from the MoEF would be useful both in preparing necessary documentation and initializing implementation of the waste reduction roadmap. Additionally, stakeholders need clarification as to whether the regulation will be set at a regional level and, if so, whether the MoEF will ensure there are adequate public dissemination activities for regional governments. According to the NPAP, only 23 companies have submitted their waste reduction plans, most of which are MNCs. It was also revealed that there is a substantial gap in information received by targeted companies and particularly those that are smaller, as many of them were not aware of the regulation's existence even after its launch. As a result, the government is still working on implementing workshops and awareness campaigns, activities that could have been avoided had there been a clear roadmap and timeline prior to the launch of the regulation.

As a consequence of this delay, the MoEF is currently implementing the 'EPR regulation' on a voluntary basis, only targeting large national and multinational producers. Although the MoEF plans to gradually make it mandatory, the 'EPR regulation' itself lacks strict measures to incentivize producers to follow the regulation. Thus, there is currently a significant risk of failing to meet the targets set out in the 'EPR regulation'.

Furthermore, although the 'EPR regulation' has set out guidelines on how to fill in the waste reduction plan form, including guides for determining waste baselines and setting targets and timelines, it still does not specify exact timelines for targets and/or interim targets for waste reductions (e.g., 50% of plastic waste recycled by 2025 or 20% waste reduction by 2025).

To address this issue, and following changes brought about by the COVID-19 pandemic, the government could establish an interim plan for a more effective implementation. The interim plan could include a list of priority targets, along with a revised timeline and KPIs for each target. Setting interim targets with a clear timeline could help ensure that the regulation is on the right track for meeting its targets, with scope for corrective actions, including amendments and additional measures under consideration, to be made if not.



## 2. Lack of Plastic Waste Management Infrastructure and Low Collection Rate

According to the NPAP (2020), about 72% of plastic pollution originates from rural areas or small to medium-sized cities where waste collection centers and recycling facilities are scarce.<sup>[22]</sup> This finding was corroborated by stakeholders interviewed for this study. It was revealed that producers were struggling to implement their take-back programs in smaller cities or regions outside of Java island due to the absence of these infrastructures. Stakeholders also mentioned that the low collection rate has contributed to the lack of recyclable materials distributed to recycling centers. This has led to communities in coastal regions often resorting to burning or simply dumping their plastic waste into the ocean, as the nearest recycling facility is located hundreds of kilometers away. This was the case for villagers in the Wakatobi and Selayar regions in Southeast Sulawesi.<sup>[23]</sup>

Furthermore, as plastic recycling plants are currently concentrated on Java island, waste banks in other parts of the country are required to send their plastic waste to these plants, resulting in additional costs for transportation. This adds to the financial burden placed on waste banks often already operating either within tight margins or at a financial loss. Indeed, plastic waste producers revealed that it was difficult for them to find waste banks or collection centers for long-term partnerships as many of these waste banks permanently closed down due to poor financial performance (among other reasons).

On the other hand, there are only a limited number of collection centers in cities. This makes it difficult for households who separate their recyclable waste at source to deposit this waste in its proper place. These households would prefer to leave their recyclable waste with their other waste types to be collected by garbage trucks run by the city government. This poses a problem, especially considering that garbage trucks collecting waste from households are rarely separated by types of collected waste, i.e., recyclable and non-recyclable. Thus, while waste may have been separated at the household collection point, both waste types would be transported in the same vehicle, with the recyclable waste often ending up in the same landfill as the non-recyclable waste.

Therefore, It is clear that, in order to address these issues, the relevant stakeholders should endeavor to establish more recycling facilities across the country, while city governments should start investing in specialized garbage trucks to maximize the plastic waste collection and recycling rate. The Government (e.g., the Ministry of Transportation, in collaboration with city governments) and producers can also consider providing incentives, such as a deduction in costs when transporting recyclable waste from islands outside of Java to Java island.



<sup>[22]</sup> NPAP, 2020.

<sup>[23]</sup> Ross, et al, 2020 - Ocean plastic crisis—Mental models of plastic pollution from remote Indonesian coastal communities. PLoS ONE, 15(7), Article e0236149. <https://doi.org/10.1371/journal.pone.0236149>

### 3. Lack of Coordination and Synergy Between Stakeholders

Numerous line ministries and government stakeholders are involved in the waste management sector in Indonesia, resulting in inconsistent communication, policies, and enforcement. In terms of implementing the 'EPR regulation', the local government is responsible for the monitoring and evaluation of catering and retail industries, whereas the central government is responsible for overseeing manufacturing industries. This set-up is at risk of ineffective implementation, as local governments often have differing levels of ambition to the central government in tackling waste management problems. For instance, some jurisdictions, such as the provinces of Bali and Jakarta and the city of Balikpapan, are more advanced, having enacted a single-use plastic ban in retail, while others have not yet followed suit.

Despite the several existing initiatives helmed by producers and various business alliances, the lack of coordinated efforts within the private sector following the absence of a centralized national multi-stakeholder platform/institution has hindered the effectiveness of those initiatives at having a significant impact on plastic waste reduction. This lack of coordination was repeatedly identified as an issue by stakeholders, as there are various initiatives from existing platforms, such as the IBCSD, APRINDO, GAPMMI, PRAISE, PHRI, and the NPAP, that run independently of each other. Stakeholders believe that an umbrella platform is needed to centralize efforts and coordination in tackling the plastic waste problem.

To address this issue, the government can build a national EPR platform and scale it up to include more players (e.g., local governments, industries, or producers) as a first step towards achieving synergy between stakeholders. Alternatively, the government can set up a new specialized advisory government committee working group consisting of the MoEF, the Ministry of Industry, the Ministry of Home Affairs, the Coordinating Ministry of Maritime Affairs and Investment, and multiple provincial governments for the monitoring and evaluation of the 'EPR regulation'.



### 4. Limited Awareness of Plastic Waste amongst from the General Public

Lack of awareness from the general public has proven to be a considerable challenge for plastic waste management in Indonesia. Limited knowledge surrounding the environmental harm caused by plastic has resulted in low participation in waste segregation and recycling and an increased use of single-plastic packaging. Indeed, stakeholders involved in the waste management sector, including business associations, manufacturing industries, and waste banks that were interviewed for this study, agreed that the lack of awareness from the general public is one of the biggest issues that needs to be tackled.

Governments at both a national and local level play a vital role in raising awareness among the public and should therefore work together to champion awareness-raising activities around reducing waste problems. This could be achieved by embedding waste management in school curriculums or collaborating with community or religious leaders to raise awareness at a community level.



## 5. Limited Financial Support from the Government and Waste Producers

Indonesia needs significant investment to address its plastic waste issues. According to the NPAP, Indonesia would need a capital investment of USD 5.1 billion and operating costs of USD 1.1 billion per year to reduce its ocean plastic waste leakage by 70% before 2025.<sup>[24]</sup> However, budgeting for plastic waste management is often deprioritized by local governments to make way for other sectors, such as infrastructure, health, and education. This has led to insufficient monitoring, control, and enforcement of plastic waste management.<sup>[25]</sup>

To close the gap, support from brand owners is also needed. Although some industries or producers have supported waste banks or recycling companies as part of their corporate social responsibility, such contributions are often insufficient and demand scaling up. During stakeholder consultations, it was revealed that only a few producers have included waste management in their product cost components. By including plastic waste management fees in product cost components, industries or producers can both secure and directly channel these funds to waste banks or recycling companies as part of their take-back programs.

Furthermore, the implementation of a mandatory EPR scheme can provide a stable revenue stream for waste reduction and management activities by way of EPR fees borne by waste producers. Emphasizing the waste producers' responsibility to managing their product's end-of-life usage via take-back initiatives can also further reduce the financial burden on the government.



## 6. COVID-19 Pandemic Further Hampered Plastic Reduction Efforts

The COVID-19 pandemic has forced people to change their behavior. For hygiene reasons, the use of plastic has increased by 22% since the outset of the pandemic, primarily as a result of online shopping and food and beverage takeaway packaging.<sup>[26]</sup> Coinciding with this is a decrease in both the collection rate and public participation in recycling in the last year, owing to the cumulative effects of multiple lockdowns and the permanent closure of many collection points owned by waste banks or brand owners. Furthermore, as industries and producers are recovering from economic downturns post-pandemic, the MoEF, as the implementing agency of the 'EPR regulation', permitted deadline extensions to 2021 as leeway for these parties in fulfilling their waste reduction obligations.

In light of these factors, there should be a collective effort between the government, industries, and producers to compensate for the lagging progress in waste reduction as the economy recovers. The government can double its efforts in engaging industries and producers to fulfill the EPR requirements, while brand owners and waste banks, in collaboration with community organizations, can intensify their efforts in raising the general public's awareness of plastic waste management. Brand owners in particular can provide incentives encouraging more people, including the general public and brand owners' supply chain partners, to segregate waste and participate in take-back programs.



<sup>[24]</sup> NPAP, 2020.

<sup>[25]</sup> Indonesia SEA Circular, n.d. - UN Environment Programme. <https://www.sea-circular.org/country/indonesia/>

<sup>[26]</sup> Media Indonesia. (2021, June 30). Pandemi dan Belanja Daring Bikin Sampah Plastik Meningkat 22 Persen. <https://mediaindonesia.com/humaniora/415515/pandemi-dan-belanja-daring-bikin-sampah-plastik-meningkat-22-persen>

## 7. High Demand for Products with Low After-use Packaging

As mentioned in the 'EPR regulation', one of the ways waste producers and brand owners can reduce their plastic waste production is through redesigning or changing the size of their products' plastic packaging. This, however, is not easy to implement. Stakeholders interviewed mentioned that completely eliminating small plastic sachet packaging will be difficult as there is high demand for more economical packaging (e.g., shampoos, ketchups, soy sauces, and detergents in 5-20 milliliter plastic packaging), particularly from low-income households who may not necessarily be able to afford bigger-sized products.

As small sachet packaging will be prohibited from January 2030, it provides an opportunity for brand owners and other stakeholders involved to gradually phase out the use of such packaging and encourage behavioral changes. This can be done by gradually redesigning (e.g., by using biodegradable materials) or changing the size of plastic packaging. Waste producers can coordinate with the Centre for Environmental and Forestry Standardization under the MoEF with issues related to product packaging and labelling standards in Indonesia. It is also recommended that waste producers expand the limited number of existing refilling stations for household products while raising awareness of plastic waste issues in collaboration with the Government and/or other relevant stakeholders.



# OPPORTUNITIES FOR PRODUCERS TO PARTICIPATE IN THE IMPLEMENTATION OF THE 'EPR REGULATION'

Industries and producers who have not submitted their waste reduction roadmap are encouraged to reach out to the MoEF directly or through an industry association and participate in the training and readiness activities supplied alongside the 'EPR regulation'.

Producers can take advantage of this opportunity to demonstrate leadership in waste reduction efforts and can thereby develop a competitive edge over their competitors. As stipulated in the 'EPR regulation', producers who have successfully submitted and implemented their waste reduction plan will receive incentives from the MoEF, including an award given by the MoEF and the announcement of this achievement in the national media. This, in turn, will have a positive brand impact for these entities, the perception of which is particularly important to younger generations who are increasingly aware of environmental issues and would consider changing their buying habits in favor of more eco-friendly products, industries, or producers.<sup>[27]</sup>

The planning and implementation of the regulation' is still in its voluntary phase. producers sufficient time to gain expertise and build their capacity on plastic waste management activities before they are made mandatory. This would also provide obligated entities with an opportunity to familiarize themselves with the technical and financial aspects of an EPR program with some leeway for trial and error. Thus, when the 'EPR regulation' enters into full force, an industry or producer would be ready to implement their plans smoothly and avoid hiccups that could potentially lead to the failure of EPR plan implementation and penalties being imposed by the authority.

Additionally, the increase of start-ups offering waste management services, such as Waste4Change, Rekosistem, Duitin, Octopus, Mallsampah, EcoBali, and Griya Luhu, opens up opportunities for collaboration. Producers could enter into an agreement with these start-ups to assist them with waste collection, recycling, and take-back programs or provide waste management training to employees within the company.

**Table 3.** Summary of Key Challenges and Opportunities Faced by Industries and Producers during the Implementation of the 'EPR regulation' in Indonesia

Summary of Key Challenges	Summary of Recommendations
Unclear scope and target of the 'EPR regulation'	<ul style="list-style-type: none"> <li>The government can establish an interim plan following the changes made during the pandemic for a more effective implementation</li> </ul>
Lack of plastic waste management infrastructure	<ul style="list-style-type: none"> <li>The government should establish more recycling facilities and waste collection points</li> <li>Strengthen collective actions among producers to contribute via take-back mechanism or funding waste infrastructure project</li> <li>The government and producers can collaborate to establish cost reduction mechanisms for the transportation of recyclable waste from outside of Java to Java.</li> </ul>
Lack of coordination and synergy between stakeholders	<ul style="list-style-type: none"> <li>The government can consider building a national platform for EPR and scaling it up to include more players in the plastic waste sector</li> </ul>

<sup>[27]</sup> Nielsen. (2018, December 17). Was 2018 the year of the influential sustainable consumer? NielsenIQ. <https://nielseniq.com/global/en/insights/analysis/2018/was-2018-the-year-of-the-influential-sustainable-consumer/>.

**Table 3.** Summary of Key Challenges and Opportunities Faced by Industries and Producers during the Implementation of the 'EPR Regulation' in Indonesia

Summary of Key Challenges	Summary of Recommendations
Limited awareness of plastic waste from the general public	<ul style="list-style-type: none"> <li>• Raise awareness through school curriculums and collaborations with NGOs and religious or community organizations</li> </ul>
Lack of financial support from the government and waste producers	<ul style="list-style-type: none"> <li>• Brand owners can start incorporating waste management into their product cost components</li> <li>• The government should better prioritize waste management in the annual budget</li> </ul>
COVID-19 pandemic hampered plastic reduction efforts	<ul style="list-style-type: none"> <li>• Collective efforts from stakeholders needed to make up for the lagging progress caused by the pandemic</li> </ul>
High demand for products with low after-use packaging	<ul style="list-style-type: none"> <li>• Gradually redesign (e.g., by using biodegradable materials) or change the size of plastic packaging and expand the limited number of existing refilling stations for household products while raising awareness on plastic waste issues in collaboration with the Government and/or other relevant stakeholders</li> </ul>

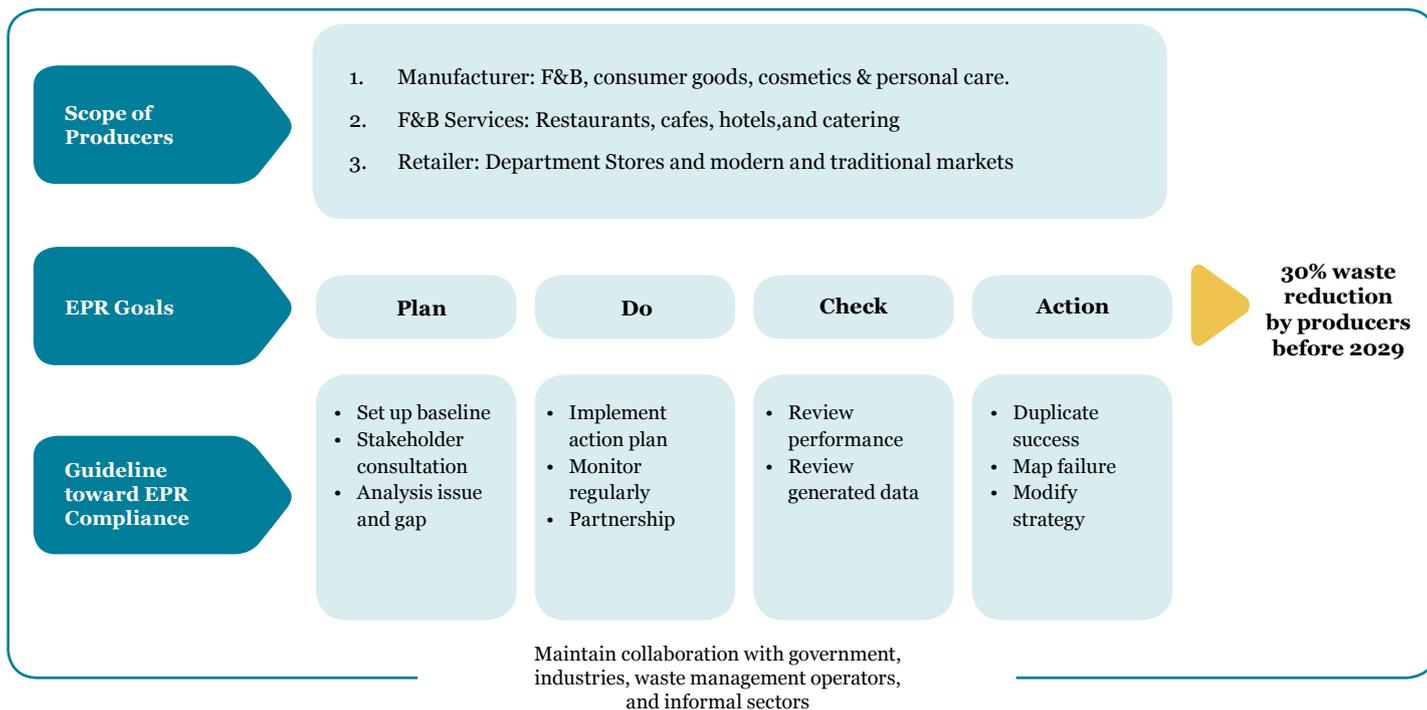
(Source: South Pole, 2021)





# Industry Guide for Implementing EPR and Circular Economy in Indonesia

This section provides a package of guidelines for producers to comply with under the 'EPR regulation' in Indonesia. This guidance is translated into two scenarios whereby industries are encouraged to comply as a starting point before continuing to act beyond mere compliance. These scenarios are based on both the 'EPR regulation' and on global best EPR practices as derived from EPR stakeholder consultations. Figure 4 visualizes the general framework of the EPR guideline for producers in Indonesia. The system stipulates a 30% waste reduction target for producers within 10 years.



**Figure 4.** General Framework of EPR in Indonesia

(Source: South Pole Compilation, 2021)

## KEY TERMINOLOGIES

The following are key terminologies used in this chapter:

**Producers:** A group of business entities or organizations that are incorporated into the scope of the 'EPR regulation', including manufacturers, food and beverage services, and retailers.

**Recyclable:** Type of packaging or packaging component that can be recycled in practice and at scale when its end-of-life stage, collection, sorting, and recycling are managed successfully.

**Recycled content:** Mass or fraction of post-consumer recycled material in a product or packaging.

**Reuse:** Operation by which packaging is refilled or used for the same purpose for which it was conceived with or without the support of auxiliary products present on the market that enable packaging to be refilled.

**Biodegradable material:** Material that can be biologically transformed by microorganisms (e.g., bacteria and fungi) into water, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and biomass.

**Waste reduction partners:** All strategic partners involved with the product and packaging waste reduction effort. These partners can include collection partners (e.g., waste banks, municipalities, junkshops, and aggregators), NGOs, start-ups, recyclers, or PROs.

(Source: Ellen MacArthur Foundation, 2021; Global Tourism Plastic Initiative, n.d.; South Pole Compilation, 2021)

# CONCEPTUALIZING AN EPR STRATEGY FOR PRODUCERS IN INDONESIA

## Scenario 1: Compliance-based

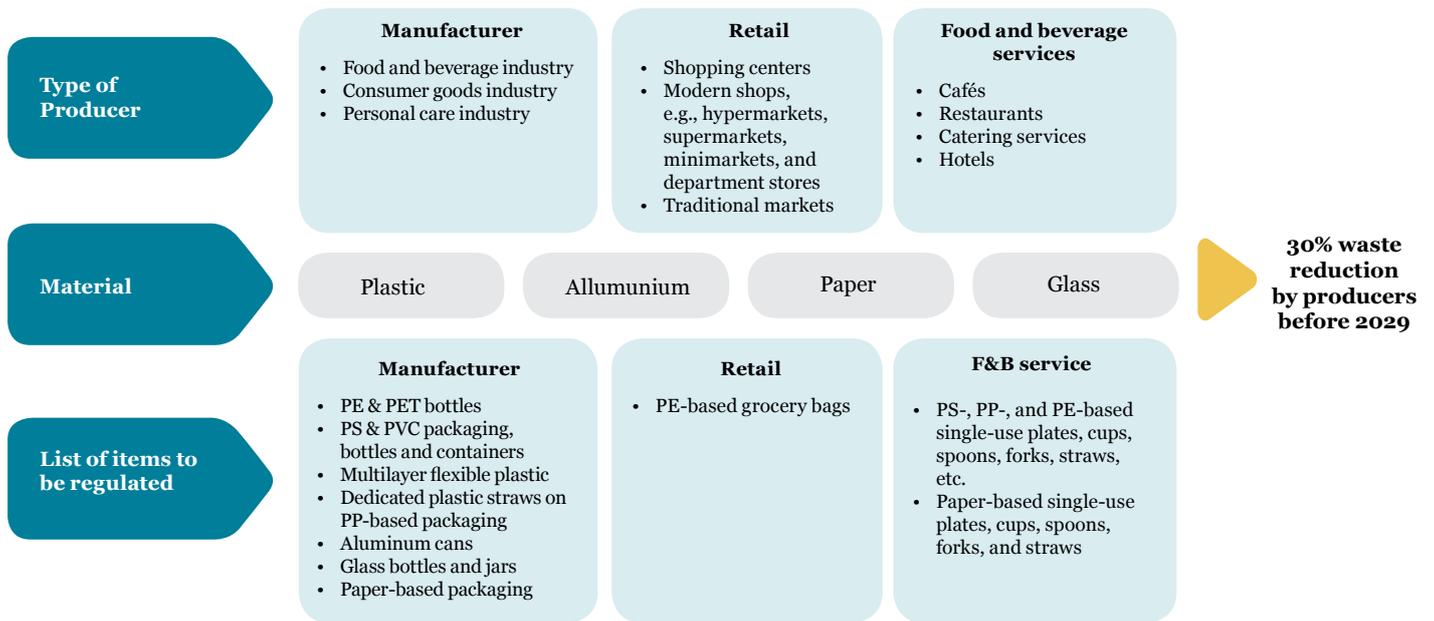
Scenario 1 is an interpretation of the 'Roadmap to Waste Reduction by Producers' under the 'EPR regulation'. The purpose of this scenario is to provide industries with a step-by-step guideline for complying with the current iteration of the 'EPR regulation'.

### 5 Guiding Principles of EPR Regulation in Indonesia:

1. Alignment with waste hierarchy practices, i.e., prioritizing reducing, reusing, and recycling interventions.
2. Applying best practices tailored to each industry and producer sector, e.g., manufacturer, food and beverage services, and retailer.
3. Alignment with the Indonesian context, e.g., regulation framework, industries and producers, and waste management system.
4. Promoting sustainable upstream business of products and packaging, requiring massive transformation of product and packaging materials.
5. Strengthening collaboration with and the responsibility of multi-level governance, including central and local governments, private sectors, waste management operators, NGOs, and the community.



Before considering the step-by-step guideline, however, it is important to take a closer look at the scope and boundaries of the producer obligations stipulated by the 'EPR regulation', as shown in Figure 5.

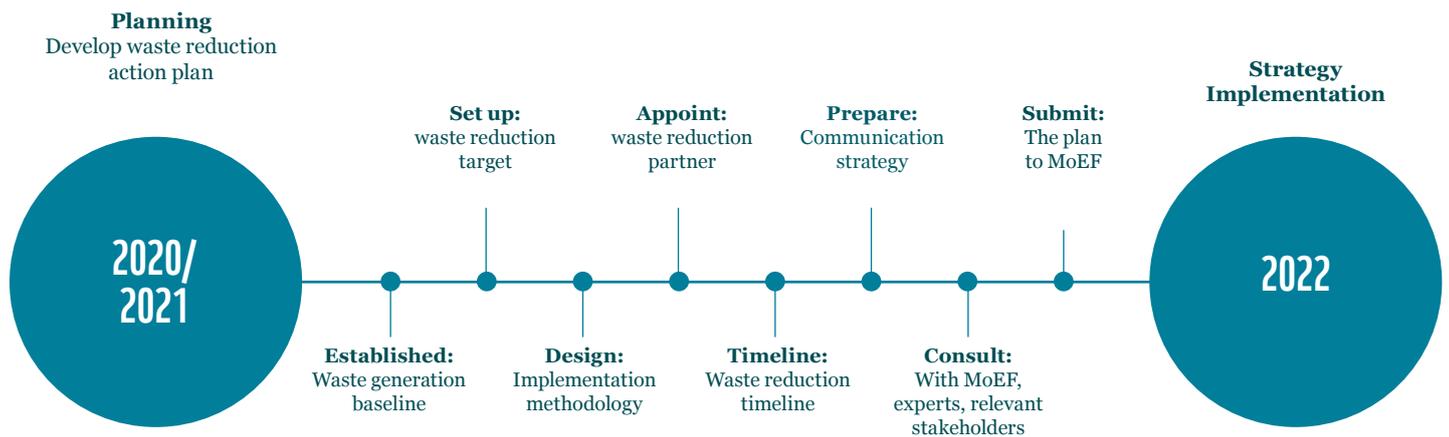


**Figure 5.** Overview of the 'EPR regulation' in Indonesia

(Source: MoEF presentation at 'Advancing the Extended Producer Responsibility (EPR) for Packaging in Indonesia Towards the Implementation of the Roadmap for the Waste Reduction by Producer' Thematic Session of The 4th Indonesia Circular Economy Forum Day 2, July 22, 2021)

### Steps to Comply to the 'EPR Regulation'

In an effort to comply with the regulatory requirements, industries and producers should follow the steps listed below. A summary of the step-by-step guideline can be found in Figure 6 dan Table 4.



**Figure 6.** Step-by-step Summary of Compliance with the 'EPR Regulation'

(Source: South Pole Compilation, 2021)

**Table 4.** Summary of the Step-by-step Guidance in Alignment with the 'EPR Regulation'

Step	Guideline	Alignment with the 'EPR regulation'
1	<p><b>Developing a waste reduction plan</b> When developing waste reduction guidelines, industries and producers should include:</p> <ul style="list-style-type: none"> <li>• The waste generation baseline;</li> <li>• The waste reduction target;</li> <li>• The design implementation methodology</li> <li>• The appointed waste reduction partner(s)</li> <li>• The waste reduction timeline</li> <li>• The prepared communication and education strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Article 7 (3, 4, 5): industries or producers should prepare waste reduction infrastructure facilities or appoint a relevant partner who can do the same</li> <li>• Article 9: in order to comply with the regulation, industries or producers should conduct planning, implementing, monitoring, evaluation, and reporting</li> <li>• Article 10 (1): industries or producers are obligated to develop and submit a waste reduction plan</li> <li>• Article 10 (2): industries or producers set out waste reduction targets individually</li> <li>• Article 15: industries or producers should prepare communication strategies to help improve public engagement with waste reduction activities</li> </ul>
2	<p><b>Tailor the strategy plan for waste reduction mandates to each entity:</b></p> <ul style="list-style-type: none"> <li>• Manufacturing</li> <li>• Food and Beverage Services</li> <li>• Retail</li> </ul>	<ul style="list-style-type: none"> <li>• Article 3: list of obligated industries or producers covered by the regulation: manufacturing, food and beverage services, and retail</li> <li>• Article 4 (1): industries or producers should conduct waste reduction activities for materials that are: non- reusable, non-recyclable, and non-biodegradable</li> <li>• Article 4 (2): limitation on material types, such as plastic, aluminum cans, glass, and paper</li> <li>• Article 5: detail on limitations for each material type</li> </ul>
3	<p><b>Consultation, monitoring, evaluation, and review:</b></p> <ul style="list-style-type: none"> <li>• Consult the relevant parties, especially the MoEF, about the strategic plan</li> <li>• Implement and monitor the action plan</li> <li>• Evaluate and review the action plan</li> <li>• Modify the strategy based on the evidence and findings</li> </ul>	<ul style="list-style-type: none"> <li>• Article 13: industries or producers should conduct regular monitoring of their waste reduction activities</li> <li>• Article 14: based on this monitoring activity, the industry or producer should then conduct an evaluation</li> <li>• Article 16: industries or producers should create a report on waste reduction activities and submit the report to the relevant ministry, governor, and local government</li> </ul>

(Source: 'MoEF EPR Regulation No.75/2019'; South Pole, 2021)

## Strategic Waste Reduction Plan

Waste reduction plan by the industry or producer should include the following aspects:

1

### Waste Generation Baseline

Producers should assess and disclose their annual plastic usage per product and packaging type in order to define a baseline year. This assessment should include the quantity of waste generated, compiled according to level, status, and trend, along with a waste generation projection for several periods of time. The baseline assessment will eventually be used as a point of comparison when determining the waste reduction achievement. This baseline should be highly detailed and laid out in a clear and consistent manner so as to effectively ease the tracking and monitoring progress of the waste reduction efforts.

#### How to accomplish:

- Scope: producers should clearly determine the system boundaries and material(s) of the plastics considered.
- Data collections: producers can compile data related to the following information, including:
  - Quantity of product and packaging sold over the previous one or two financial years per product and packaging category (e.g., quantity of PET packaging sold in 2020, or the quantity of packaging with recyclable material sold in 2019);
  - Quantity of product and packaging placed on the Indonesian market over the previous one or two financial years per product and packaging category (e.g., quantity of product with polyvinyl chloride [PVC] packaging placed on the market by 2020, or the quantity of packaging with 50% or less recycled content placed on the market by 2019);

For more advice on shaping waste generation baselines, producers can refer to the 'Guidelines for Corporate Plastic Stewardship'.

2

### Establish a Waste Reduction Target and Timeline

Producers should establish regular, periodical goals (e.g., every six months to a year) for reviewing progress made towards meeting a 30% waste reduction target or circular economy by 2029.

#### How to accomplish:

Targets can be individually defined by producers or by the business associations that they are members of. The target should correspond to the criteria employed when defining the baseline year. For example, in the financial year 2021, a total of 2000 t of PET bottles were placed on the market, while the waste reduction target set for PET bottle waste is 10% by 2022.

### 3

#### Design a Methodology for the Waste Reduction Plan by Prioritizing Intervention along Higher Value Chains

Using reusable, recyclable, and biodegradable materials.

##### How to accomplish:

Producers can mobilize budgets and investment in research and development (R&D) to redesign products and packaging for reduction, reuse, and recycling. Furthermore, these new design choices should also consider local situations, such as the sorting facilities and recycling markets available in a particular area.

### 4

#### Appoint a Waste Reduction Partner that can Help Cover the Market Share across Indonesia

The appointment can be through direct hiring or Producer Responsibility Organization (PRO).

##### How to accomplish:

- Producers can collaborate to establish PROs or become a member of an existing PRO. The PRO model should not be centralized on one island but should instead aim to spread strategically across a few islands.
- Producers can invest in and secure agreements with existing waste and informal sector operatives, such as the Indonesia Plastic Recycling Association (ADUPI), waste banks, Tempat Pengolahan Sampah–Reduce Reuse Recycle sites (TPS3Rs), start-ups, other legal entities, and other informal sectors.
- Producers can expand collaboration with waste reduction partners outside of Java island.
- Before appointing a waste reduction partner, producers must conduct a feasibility study to ensure the project's partners can cover the market share of producers for the purpose of waste collection, recycling, and treatment.
- Producers must set a regular waste collection and recycling treatment target for their respective partners (e.g., a monthly collection target for sachet packaging).
- Producers should ensure that transparent and non-discriminatory procurement practices are implemented during the selection of waste management services, irrespective of whether collectors, sorters, or recyclers are being engaged.<sup>[28]</sup>
- Producers can build close partnerships with municipalities in the form of investments in waste infrastructure, fostering collaborations over collection and recycling mechanisms, and exercising mutual contributions to litter management.

<sup>[28]</sup> EXPRA, 2013 - Extended Producer Responsibility Alliance (EXPRA), 2013. Best practices for successful EPR for packaging. [https://www.expra.eu/uploads/downloads/Best\\_practices\\_for\\_successful\\_EPR\\_for\\_packaging.pdf](https://www.expra.eu/uploads/downloads/Best_practices_for_successful_EPR_for_packaging.pdf)

## 5

### Prepare a Communication and Education Strategy

Prepare a communication and education strategy designed to help raise community awareness around products and packaging materials that have a detrimental impact on the environment, socialize waste segregation at source, and clarify information on take-back systems for products and packaging. Preparing the communication strategy can also be done via a PRO.

#### How to accomplish:

- Producers can engage in collaborative actions with the international community and NGOs to better foster community empowerment on waste segregation, collection, transportation, and disposal.
- Producers must first identify target audiences to ensure that any prospective communication strategy remains focused on this audience.
- Producers can provide incentives for behavior change in the customer.
- Producers should develop a communication strategy that is easy to understand and touches the needs and interests of customers.<sup>[29]</sup>

## 6

### Consultation, Monitoring, Evaluation, and Review

#### 1. Consult the relevant parties about the strategic action plan, especially the MoEF.

the MoEF is a government institution that has full authority over EPR implementation in Indonesia.

#### How to accomplish:

Producers should arrange active consultation sessions with the MoEF and other relevant parties, including operatives with expertise or in academia, local government, and the informal sector, to better facilitate reappraisals of and improvements to the strategic action plan.

#### 2. Implementation and monitoring of the strategic action plan

#### How to accomplish:

Industries and producers should:

- Actively socialize the strategic action plan through public engagement activities.
- Monitor the production or utilization quantity of products and packaging
- Quantify the total amount of non-biodegradable products and packaging that has been reduced, along with the methods used during the reduction effort.
- quantify the total residue produced during the reuse and recycling process for products and packaging.
- establish KPIs for relevant partners in the EPR implementation process (e.g., setting monthly PET bottle collection targets for waste bank partners).
- conduct regular monitoring procedures (i.e., at least once every six months) to assess the progress of the action strategy plan and incorporate KPIs for evaluative purposes.

<sup>[29]</sup>SEA of Solution, 2020 - Partnership week for marine plastic pollution prevention 24-26 November 2020. Report. Coordinated by UN Environment Program, COBSEA; Supported by Sweden Sverige; Co-hosted by SEA Circular. Find the document at <http://sos2020.sea-circular.org/wp-content/uploads/2021/01/sos2020-report.pdf>

### 3. Evaluation and Review of Action Plan

#### How to accomplish:

- Producers should identify, assess, and compare the progress and effort made in waste reduction projects against baseline targets.
- Producers should undertake a strengths, weaknesses, opportunities, and threats analysis of the strategic action plan.
- Producers should review collaborations and agreements with stakeholders involved in the action plan.

### 4. Modify the Strategy Based on the Evidence and Finding

#### How to accomplish:

- Producers should replicate, expand, and scale-up successful aspects of the plan.
- Producers should acknowledge failures and prepare strategies better suited to addressing emerging challenges
- Producers should submit the revised strategy plan to the MoEF for further review and feedback.

## Scenario 2: Acting Beyond Compliance

This section provides guidance for producers on acting beyond a mandatory degree of compliance. This guidance is designed for each producer sector that would need to mandatorily adopt a higher level of environmental responsibility. The guiding principles of this scenario include:

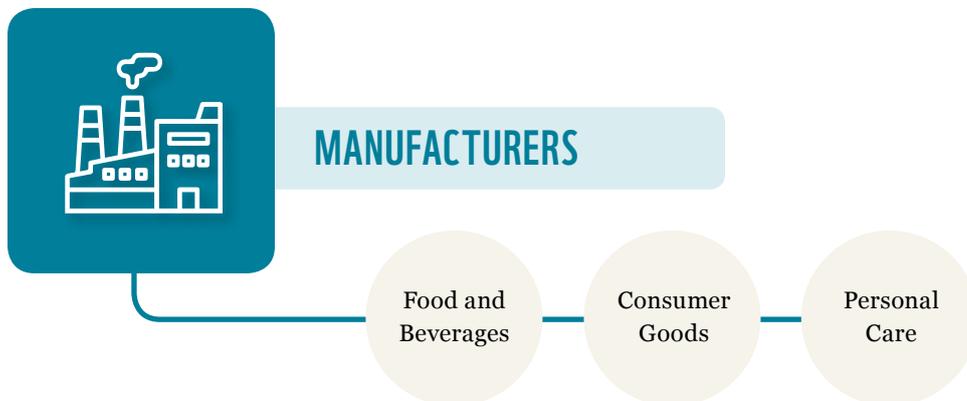
**1** Encouraging producers to generate significant impacts and solutions to waste management problems, so as to avoid merely complying with regulations and protect against non-contributory members.

**2** Designing waste management solutions tailored to the specific geographical characteristics of Indonesia by extending responsibilities to rural and remote areas.

**3** Strengthening collaborations between industries and producers by building coalitions and developing PROs.

**4** Building upon existing initiatives and engaging optimally with all of the key players in the informal waste management sectors

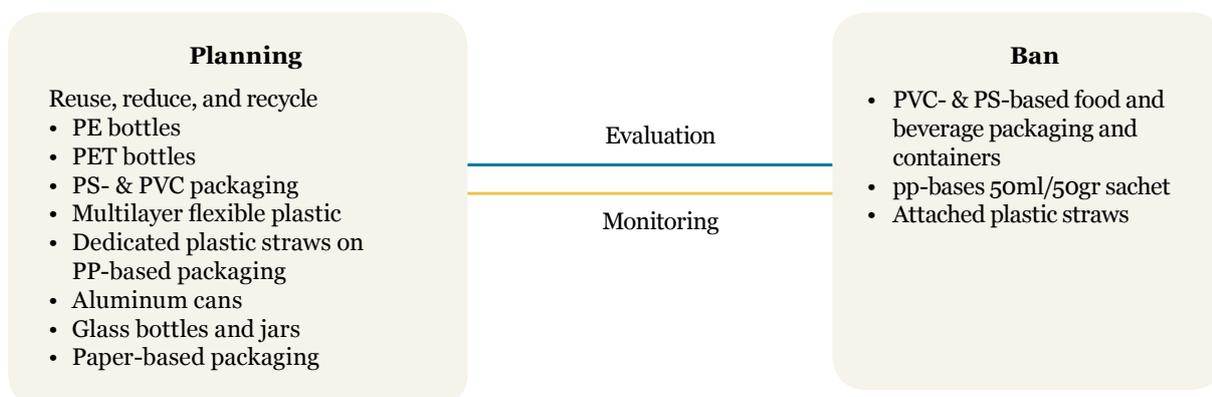
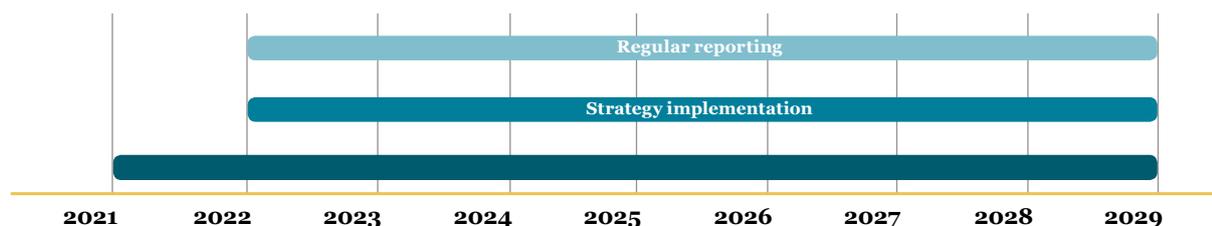
# SCENARIO 1 AND 2 FOR EACH INDUSTRY OR PRODUCER



## Scenario 1 for Manufacturers

### Gradually Reduce the Use of Plastic Labelling

- Use mono-materials that are easy to tear and embossed labeling on bottles.
- Improve take-back mechanism of plastic labeling currently circulating in Indonesia's market, This can be achieved through collaboration with the informal sector, waste banks, start-ups, TPS3Rs, and municipalities.
- Increase public knowledge of plastic labeling treatment.



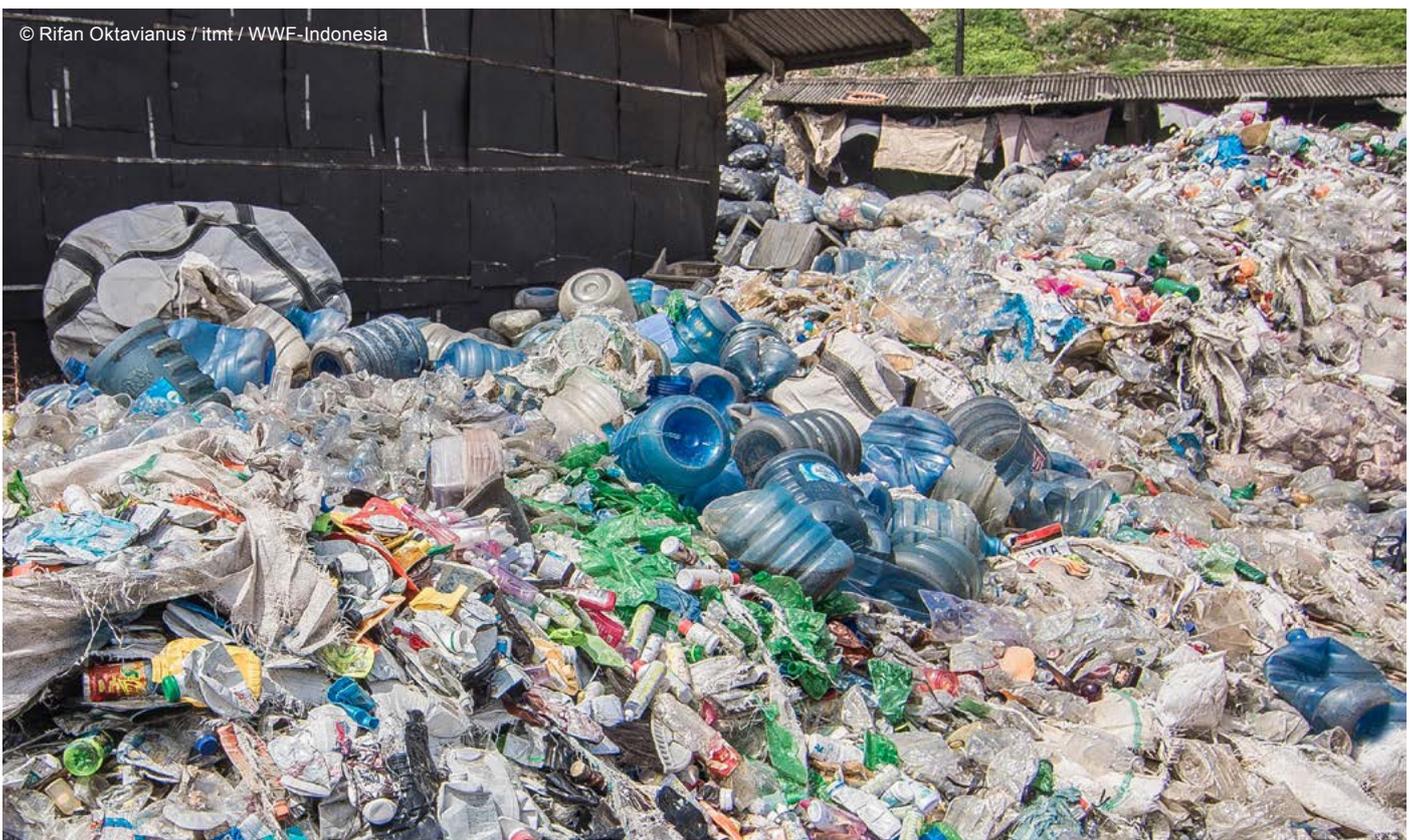
**Figure 7:** Scope of packaging materials restricted for manufacturing businesses under the ‘EPR Regulation’

(Source: Modified from MoEF presentation, 2021)

### Gradually Reduce Waste Generated from Single-use Materials through the Redesign of Products and Packaging

- Reduce the amount of packaging uses in the business
  - Perform in depth analysis and eliminate unnecessary components in product packaging
  - Increase the volume of the products, e.g., increase the volume to a minimum of 1 liter packaging for drinks.
  - Where packaging is unavoidable, redesign this packaging to be as lightweight as possible, to thin bottles, foils, and other packaging that use less plastic.
- Prioritize the use of transparent or white plastic for products and packaging where possible and reduce difficult to recycle (i.e., dark) colored plastics.
- Redesign single-use material packaging to increase its level of recyclability while simultaneously accounting for its actual fate in an end-of-life scenario such as:
  - Recyclable packaging is only a benefit to waste reduction efforts if it can be collected, sorted, processed, and used as a raw material for new products. Producers should design their packaging with according to the recycling mechanism available at the are where the products or packaging is marketed.
  - Modifying packaging by switching from multi- to mono-material and recyclable packaging, preferably PET, PP or PE. The recycling process is difficult when different types of plastic are mixed in one packaging. In this case, the packaging will often be landfilled or incinerated, if not discarded into the environment.
  - Ensure that the material of the product or packaging at the end-of-life where the product is marketed can be treated by local waste infrastructure. Redesign packaging into ones that can better be handled locally.

- Aim to use 50% recycled material in products and packaging
  - Gradually introducing recycled content in packaging could lead to the acceleration of recycling industry development due to the increased market demand for recycled materials.
  - Using recycled plastic decreases the overall CO<sub>2</sub> balance of the product and decouples costs from ever-increasing virgin prices, which fluctuate with the oil price.
  - Understanding the role played by a company in the bigger picture of enabling recycled plastics and contributing to the development of sustainable practices, e.g., by supporting policies such as deposit return schemes in market areas.
- Mobilize investment and revenue to explore innovative packaging R&D. Many different forms of sustainable packaging are now available on the market, offering a number of cost-effective.
- Invest in refillable and reusable packaging where possible. Collaborate with retailers to establish refilling stations.
- Strengthen public knowledge on the recyclability and reuse potential of packaging material and refilling stations by providing relevant information with the product and packaging. This can be done via marketing channels and by providing clear and consistent labeling on the product and packaging about post-consumption treatment.



## Scenario 2 for Manufacturers

**1. Corporate investment in waste collection and recycling beyond business as usual (BAU) scenarios:** operate an investment scheme that rewards local collection and recycling capacities for their efforts in removing a specific amount of plastic pollution from the environment. This investment can be made by funding collection and recycling industries for every 1 t of waste collected or recycled. Producers should note that this offsetting mechanism only serves as a 'last resort' waste reduction effort, as the priority should still be on reduction and reuse within value chains.

**2. Collaborate with other producers to design PROs for specific areas:** as Indonesia is an archipelago, managing waste on a number of different islands is one of the most significant challenges facing waste reduction efforts across the country. One solution is to form a coalition with other producers whose products are sold on those specific islands and collaboratively develop PROs for managing these products or packaging.

**3. Extend the waste reduction initiatives to rural or remote areas:** producer initiatives, with regard to post-consumer waste management, should not be centered only on large-sized or megacities. They must also be extended to the rural or remote areas in which their products and packaging can be found. Responsibility can be assumed in this way by collaborating with municipalities and local waste pickers, waste banks, and aggregators

**4. Improve collective collaboration within the manufacturing sector** by coordinating with retailers to establish refilling stations or deposit-refund model collection centers.

**5. Incorporate post-consumer treatment cost into the total production cost of products and packaging:** in many cases, the final price of commercial products is derived from a combination of several cost elements, including cost for product materials, production, packaging, distribution, sales and marketing, and retailer markup. The additional cost for post-consumer treatment can be generated from shifting a proportion of existing budgets for the aforementioned costs or adding extra cost for end-of-life treatment, with the added consequence of increasing the price of the product.

**6. Assigning an independent and legally recognized EPR auditing agent** to bring transparency to the EPR compliance process, to validate efforts to comply with the 'EPR regulation' based on the strategic plan, and to show improvement with regard to the waste reduction effort.

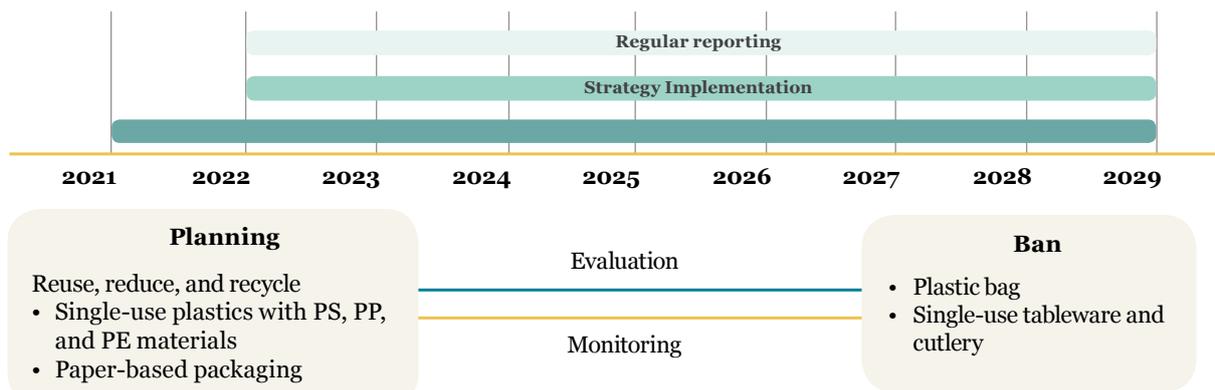
**7. Acquire regular advice and information from collection and recycling partners** on both the environmental performance of products and packaging and the packaging optimization effort.



## Scenario 1 for Food and Beverage Services

### Gradually Reduce the Waste Generated from Single-use Materials in Products and Packaging:

- Perform in-depth analysis of overall business process. Identify possibilities for plastic waste reduction across the business value chain.
- Encourage consumers to bring their own reusable bag and provide non-plastic lined, reusable, and recyclable shopping bags for purchase.
- Provide only reusable containers for takeout and incorporate the cost of the container into the food prices. Completely remove single-use cutlery from deliveries.
- Provide reusable cutlery and tableware, such as stainless steel- or glass-based cutlery and tableware.
- Minimize the use of plastic wrap for food protection and explore the possibility of substituting this with recycled paper bags.
- Invest in communication strategies for socializing the waste reduction initiatives of the company, complete with step-by-step guidance for the consumer to follow when visiting the business entity.



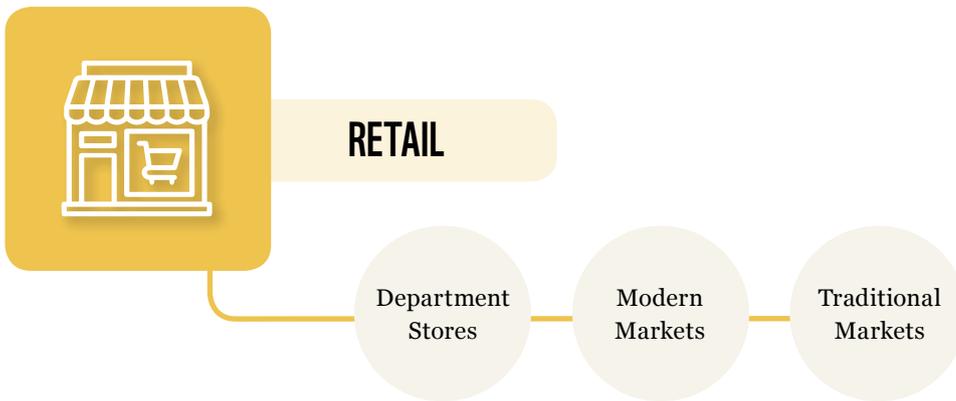
**Figure 8.** Scope of Packaging Materials Restricted for Food and Beverage Service Businesses under the 'EPR regulation'

(Source: Modified from MoEF presentation, 2021)

## Scenario 2 for Food and Beverage Services

### Expand environmental responsibility beyond tableware and cutlery by providing options for sustainable packaging to the customer.

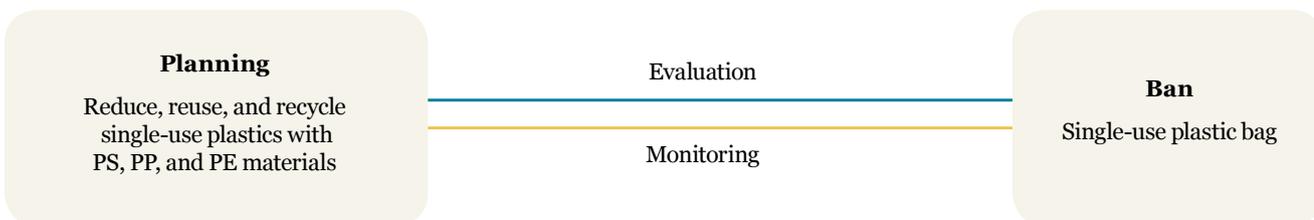
For example, food and beverage services can provide options as to the type of packaging customers want to use for food delivery or takeout. Food and beverage services must provide information concerning the environmental impacts and benefits of each packaging option.



## Scenario 1 for Retail

### Reduce the Waste Generated from Single-use Plastic Bags or Packaging:

- Perform in-depth analysis of overall business process. Identify possibilities for plastic waste reduction across the business value chain.
- Encourage consumers to bring their own reusable bag and provide non-plastic lined, reusable, and recyclable shopping bags for purchase.
- Identify the possibility to reuse existing resources. For example, the composition of waste in retail businesses often consists of a substantial amount of paper and cardboard. This cardboard, usually from manufacturers, can be reused for sending out goods and the paper can be shredded for goods protection in place of plastic bubble wrap.
- Gradually begin selling products without plastic packaging whenever possible.
  - Socialize the introduction of bulk store concepts to the customer via marketing or other communication channels (e.g., posters and social media, etc.).
  - Provide reusable container such as Tupperware or glass-based containers to support a bulk store scheme.



**Figure 9.** Scope of Materials Restricted for Retailer Businesses Under the ‘EPR Regulation’

(Source: Modified from MoEF presentation, 2021)

## Scenario 2 for Retail

**1. Facilitate the establishment and adoption of refilling stations and the deposit-refund model** throughout manufacturing industries, department stores, and modern and traditional markets.

**2. Provide guidelines for manufacturers on products and packaging criteria eligible for introduction into the retailer market**, especially for unbranded products and packaging that proliferates throughout both modern and traditional markets.

**3. Collaborate with local waste management providers** to manage the waste generated by fabric distribution once released onto the retail market.

**4. Corporate investment in waste collection and recycling beyond BAU scenarios:** operate an investment scheme that rewards local collection and recycling capacities for their efforts in removing a specific amount of plastic pollution from the environment. This investment can be made by funding collection and recycling industries for every 1 t of waste collected or recycled. Industries or producers should note that this offsetting mechanism only serves as a 'last resort' waste reduction effort, as the priority should still be on reduction and reuse within value chains.

**5. Educating and raising awareness for end consumers**, such as providing several trash bins for waste segregation and recycling or establishing discount or points programs for customers that bring back bottles or other packaging materials.

# EPR FINANCIAL STRUCTURE

## Recommendations for basic structure in Indonesia

In this section, several indicators will be listed to assist producers with defining basic fees for EPR compliances.

### 1 Waste Management Plan

Waste management plan covers collection, sorting, recycling, or forwarding on for other treatment.

The cost for product and packaging waste management systems will vary depending on:

1. Collection, sorting, and recycling targets
2. The type of product and packaging material
3. The economic value of the product and packaging
4. Labor and operational cost
5. Transport and distribution
6. Litter prevention and management
7. Residual disposal

#### How to accomplish:

- Define specific collection, sorting, and recycling targets for each product and packaging material;
- Collaborate with informal sector operatives and entities, such as waste pickers, waste banks, aggregators, TPS3Rs, and recycling industries;
- Financial schemes for managing after-use products and packaging can be distributed to respective partners as a yearly incentive; and in the case of TPS3Rs, the calculation fee will be slightly different as financial responsibility will have been shared between the industries or producers implementing the scheme and the participating municipalities



### 2 Communication, Education, Information, and Consumer Awareness Campaigns

One reason as to why Indonesia has a low collection and recycling rate is the lack of public participation in waste management. Although certain industries and producers have appointed waste reduction partners, producers are unable to achieve EPR targets in most instances as their chosen organization partners fail to serve public, given that these entities tend to use organizations outside of their EPR partners.

#### How to accomplish:

- Develop a communication strategy that will accompany the financial framework so that public awareness surrounding waste management can be enhanced, information on product and packaging recyclability can be socialized, and the community can be informed about collection, sorting, and recycling partners chosen by the producers that make up their EPR organization.
- Work together with NGOs and municipalities with close ties to the community. The cost can be formulated as a sessional or yearly incentive for respective partners, based on the intensity of the program.



### 3 Enforcement and Surveillance of the EPR System, Including Administration And Auditing



#### How to accomplish:

- Administration: the cost of administration includes any necessary fees related to the government's administration, reporting, revision, updating, monitoring, and evaluation of the strategic action plan, along with any other administrative tasks.
- Audit: appoint an independent firm to audit the validity of EPR implementation and its accountability and transparency.

### 4 Research and Development



#### How to accomplish:

- Identify products and packaging that have a low after-use value and which currently lack or have no secondary market in Indonesia.
- Allocate corporate investment or funding for R&D of more reusable, recyclable, and biodegradable products and packaging.

## Sharing Financial Responsibility for Relevant Stakeholders

"...THE HIGHER THE VOLUME OF WASTE DISPOSED, THE GREATER THE COST FOR GARBAGE."

Outlined below are the eventualities through which both municipalities and taxpayers may have to contribute to EPR financial schemes in tandem with producers:

### 1. Municipalities

Municipalities can act as strategic collection and sorting partners for producers in Indonesia. This cost sharing can be in the form of:

- Financial costs for littering, for instance, as both parties have the potential to influence littering habits.<sup>[30]</sup>
- In terms of waste collection, producers can also negotiate to share the cost if they decide to utilize public infrastructure overseen by the municipalities/

The waste accumulated by municipalities at the point of collection consists not only of waste from products and packaging, but also of a mixture of organic and inorganic waste. It would therefore seem appropriate to engage municipalities in sharing some of the cost for waste collection. Municipalities can conduct some research first to discover the proportion of waste that consists of products and packaging and the proportion that consists of other types of waste before the cost is divided.

### 2. Consumers

Consumers of both products and packaging can also be involved in the cost sharing scheme with producers. For instance, consumer contributions can be provided in the form of a 'pay-as-you-throw' system, the higher the volume of waste disposed, the greater the cost of their garbage. Municipalities can work to collect this money and mobilize the revenue to improve waste management systems and infrastructure or to incentivize industries that promote eco-design to perform beyond a baseline of mere compliance.

<sup>[30]</sup> OECD, 2016

## Summary of Cost Benefits of EPR Schemes

**Table 5.** Summary of Cost Benefits of EPR Scheme

Cost	Benefit
1. Waste management: collection, sorting, recycling, or forwarding on for treatment.	<ul style="list-style-type: none"> <li>Reducing the waste disposal cost of landfills and incineration.<sup>[31]</sup></li> <li>Generating revenue from selling recycling goods and materials.</li> <li>Implementing the EPR by enforcing company payments could also generate revenue that contributes to the optimization of waste management infrastructures.<sup>[32]</sup></li> </ul>
2. Communication strategy	Strengthening the take-back mechanism for products and packaging as base materials for further product and packaging production.
3. Enforcement and surveillance of EPR system	Mapping the financing lost during EPR implementation and regulation compliance.
4. R&D	<ul style="list-style-type: none"> <li>Possibility of discovering more cost-efficient products and packaging.</li> <li>Possibility of receiving an incentive for eco-design products and packaging.</li> <li>Increasing the revenue from material sales, as industries or producers are capable of transforming existing products and packaging with more recyclable materials.</li> </ul>

(Source: South Pole Compilation, 2021)

<sup>[31]</sup> South Korea, for instance, has saved a total of 2 billion USD from landfill expenses and 2.8 billion USD from material sales in 2012, having had an EPR scheme in effect since 2003.

<sup>[32]</sup> Germany mandated that companies pay around EUR 450 per tonne. Using this number to estimate the revenue generated from the EPR system indicates proceeds of around EUR 1,469 million, as Indonesia generates around 3,265 thousand tonnes of household plastic packaging. Despite this being a rough estimation, this figure nevertheless indicates the potency of the revenue stream derived from the EPR scheme in Indonesia.

# POSSIBLE PRO MODEL FOR PACKAGING IN INDONESIA

EPR schemes are designed so that producers can fulfill their EPR obligations either in an individual or collective manner. In Indonesia, producer responsibility has been practiced by industries or producers prior to the enactment of the ‘EPR regulation’ in the form of CSR that covers upstream and downstream product and packaging activities.<sup>[33]</sup> In response to the issuance of the ‘EPR regulation’, where industries or producers have to submit their waste reduction plans, these entities disclosed during the stakeholder engagement process that they would fulfill their waste reduction obligations on an individual basis. However, they would also welcome any potential collaboration with other industries or producers to fulfill their obligations in a cooperative manner via a PRO (Packaging Recovery Organization).<sup>[34]</sup>

The establishment of PROs in EPR schemes has proven to be a common response in various countries, such as Germany, Belgium, and France. In addition, some countries in Southeast Asia, such as Vietnam and Malaysia, have also formed voluntary PROs. Belgium, France, Vietnam, and Malaysia have each elected for a single, industry-led PRO, whereas Germany follows a multiple PRO system. In the case of Indonesia, the members of PRAISE formed the IPRO in 2020. IPRO is a voluntary, non-profit, and independent organization that focus on downstream business by increasing the collection and recycling rate of post-consumer packaging.<sup>[35]</sup> The IPRO's membership consists of members of PRAISE and producers from outside of the PRAISE organization. The IPRO is also currently inviting more producers to join the organization. Announcement of this intention was met with a positive response by other industries or producers in Indonesia, as they showed an appetite to join the IPRO. However, IPRO is still developing and exploring a business model suitable for the Indonesian market.

Besides the IPRO, the ADUPI also facilitates a collective waste reduction effort, serving as a waste collection and recycling partner for producers. ADUPI works as a for-profit PRO. This section is intended to visualize possible options for PRO business models in Indonesia. The option for PRO models in Indonesia was built upon the combination of the IPRO business model with a thorough analysis of best practices for PRO models for packaging around the world, with these two indicators linked to the local Indonesian context. However, before moving forward to the recommended model of PRO in Indonesia, on page 52 and 53 will briefly discuss PROs in general by comparing each type of PRO model available.

<sup>[33]</sup> SystemIQ. (2021). Producer responsibility in Indonesia: what to know, what stakeholders think, and what could happen next. <https://www.systemiq.earth/wp-content/uploads/2022/01/Producer-Responsibility-in-Indonesia2022.pdf>

<sup>[34]</sup> In some countries, the abbreviation ‘PRO’ can also stand for Packaging Recovery Organization.

<sup>[35]</sup> IPRO presentation at the 4th ICEF Thematic Session: Advancing the EPR for Packaging in Indonesia

## Industry-led vs. Government-led PROs

A PRO's scenario operation system can either be industry- or government-led.<sup>[36]</sup>

- **Industry-led PRO:** the PRO has been initiated by industries or producers as an extended association or organization representing these companies. The operationalization of the PRO is not directly connected to the public authority. Instead, the public authority supervises the PRO to ensure it fulfils its role in and responsibility to the EPR system.
- **Government-led PRO:** public authorities operationalize the PRO as an agency or bureau within a department.

**Table 6.** Comparison between Industry-led and Government-led PRO

Kriteria	Industry-led PRO	Government-led PRO
<b>Financial aspects</b>	Producers pay a contribution fee corresponding to the total amount required from the PRO to fulfil its obligation. This fee is not connected to the public fund, meaning transparency and traceability is imperative.	The EPR fee needs to be regulated to ensure that fees are used for the EPR system only. If not, there is the possibility of the fee being utilized as a general public budget, similar to money derived from taxes.
<b>Organizational aspect and practicability</b>	Interacting with private sectors and public authorities requires a great deal of sustained effort.	Requires direct and comparably lower organizational effort, as public authorities are empowered to implement the necessary structures themselves. However, the respective departments/authorities lack the required capacities to do so in many countries.
<b>Free rider Issues</b>	It is in the interest of industry-led PROs to avoid free riders so as to keep a level playing field.	Prone to corruption and inefficiency (particularly in countries with high rates of corruption).
<b>Control</b>	Controlled by a third party, such as a public agency.	Difficult, as there is no independent external party to enforce controls.

(Source: WWF EPR Report Philippines, 2020)

<sup>[36]</sup> WWF EPR Report Philippines. (2020, October). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines. <https://drive.google.com/drive/u/0/folders/1r7yNUyndDRmt8kM0DtIhCpvdCOVkc20v>

## Non-profit vs. For-profit PROs

When considering the operational principles of a PRO, it is important to determine whether the PRO will operate as a non-profit or for-profit entity.

- A non-profit PRO is usually established by its stakeholders as an entity that will direct all waste management responsibilities centrally. A non-profit PRO usually operates as a single PRO system with a monopoly.
- For-profit PROs allow competition amongst several PROs. Producers outsource their waste management to the selected PRO and generate agreements based on that.

**Table 7.** Comparison of Non-profit and For-profit PROs

Criteria	Non-profit	For-profit
<b>Financial Aspects</b>	The fees collected correspond to the costs of implementing and operating the system, and are regularly adapted to the funding spent and revenues collected.	Competition leads to high pressure on prices. Thus, for-profit PROs can make profits but also losses, which can lead to the insolvency of a PRO (in certain cases).
<b>Organizational Aspect and Practicability</b>	No self-determined economic interest, leading to a greater degree of transparency.	Less transparency as some information is not disclosed. Each PRO is self-organized.
<b>Control</b>	Control efforts are comparably lower.	Control efforts are high due to multiple competing PROs and a lower level of transparency.

(Source: WWF EPR Report Philippines, 2020)

According to best practice, non-profit PROs are preferred as they possess several advantages, including:

- Ensuring that the fee collected from the member is proportional to the cost required for operating and implementing the system, as the contribution fee is decided by total expenditure and revenue.
- Facilitating non-discrimination among all obligated member industries or producers as there is no requirement to distribute profit to founding members or shareholders, leaving open the possibility of a fair business for non-shareholders.
- Ensuring that all member industries or producers, including SMEs, receive equal services.
- Ensuring that other industries or producers obligated by the 'EPR regulation' have the right to join.
- Ensuring that the system is protected from non-contributory hangers-on, the presence of Which would be easier to identify than with the single non-profit PRO model.

## Option for PRO Model for Products and Packaging in Indonesia

Industry-led non-profit PRO model like the IPRO that matches the local context and needs of Indonesia. Having a PRO operating across a few islands throughout Indonesia would be preferable over a centralized one. Industry-led PROs allow producers to engage authorities in designing practical solutions that are realistic, achievable, and suitable for their business and targets, conforming to the requirements of both legal frameworks and environmental and social standards. On the other hand, non-profit PRO systems are better suited to an Indonesian market dominated by SMEs. Moreover, considering Indonesia's status as an archipelago, a single PRO could establish branches across numerous strategic island placements by building upon existing waste management industries and infrastructures on each island. It is recommended that all PROs operate under one umbrella organization so as to better facilitate the control and monitoring system. Establishing a collaborative PRO across a number of strategic islands can centralize Indonesia's fragmentary and largely disconnected waste management system.

### PRO operational strategy

In this section, we visualize the organizational structure of the PRO system in Indonesia, as shown in Figure 10. This structure includes:

- An advisory board, consisting of a broad range of government bodies and experts, including the Coordinating Ministry for Maritime and Investment Affairs, the MoEF, the Ministry of Industries, academics, EPR experts, and NGOs.
- An executive board, consisting of representatives from obligated industries and producers that are also PRO members.
- An audit company, or an independent institution charged with certifying and validating the PRO and ensuring its compliance with PRO roles and responsibilities under the 'EPR regulation'.

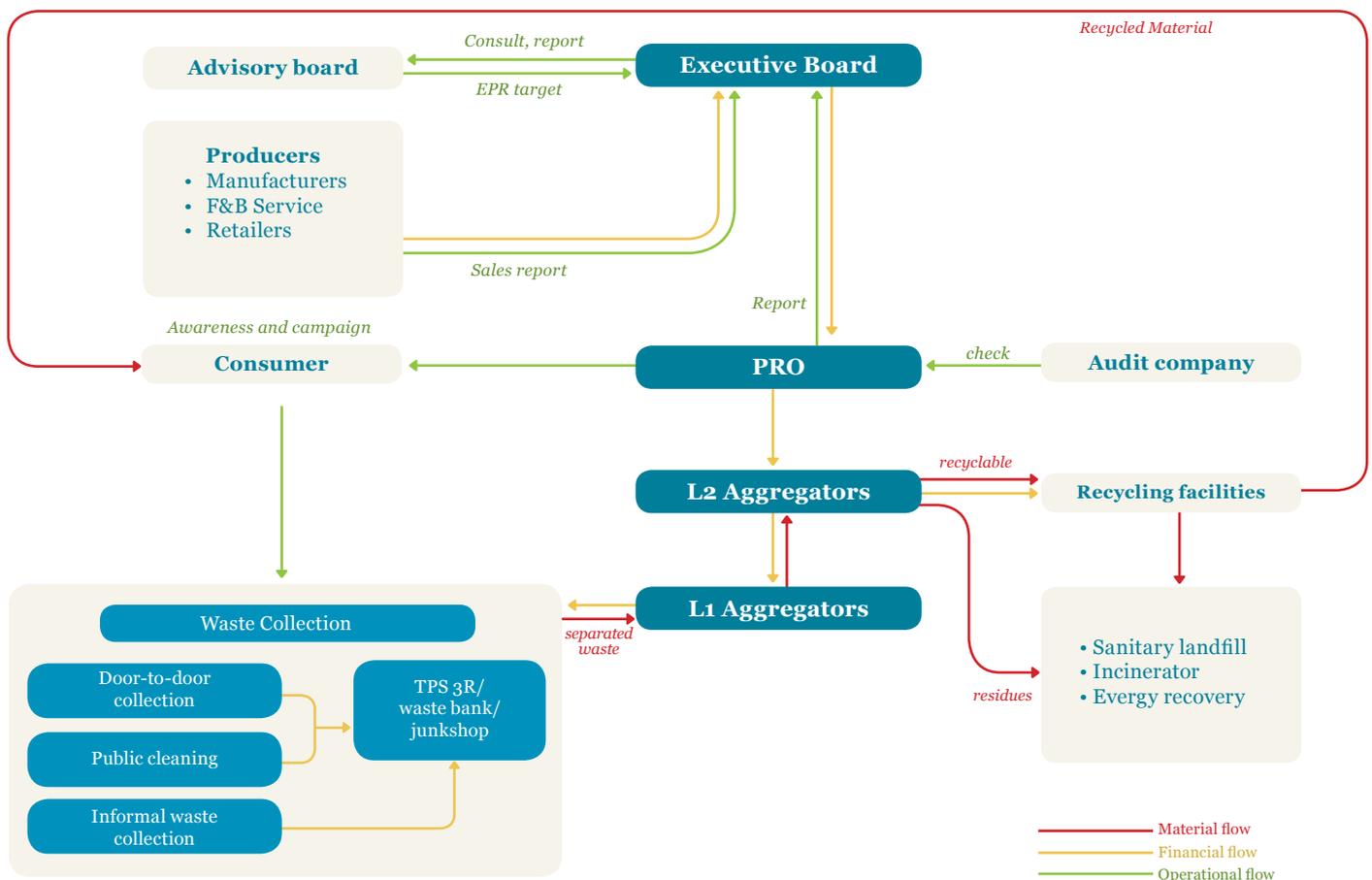


Figure 10. PRO Operational Strategy

(Source: IPRO, 2020; South Pole Compilation, 2021):

## Fee Structure for PRO

The fee structure of a PRO is similar to the fee structure of the EPR system in general. The difference lies with the obligation that producers must pay a contribution fee to cover the entire operational cost required for operating a PRO. There is currently no common guidance used to define contribution fees for producers, with the amounts required often depending on agreements made between the membership, so long as a fair and non-discriminatory practice among members can be achieved and maintained. Listed below are some common practices used to determine contribution fees.

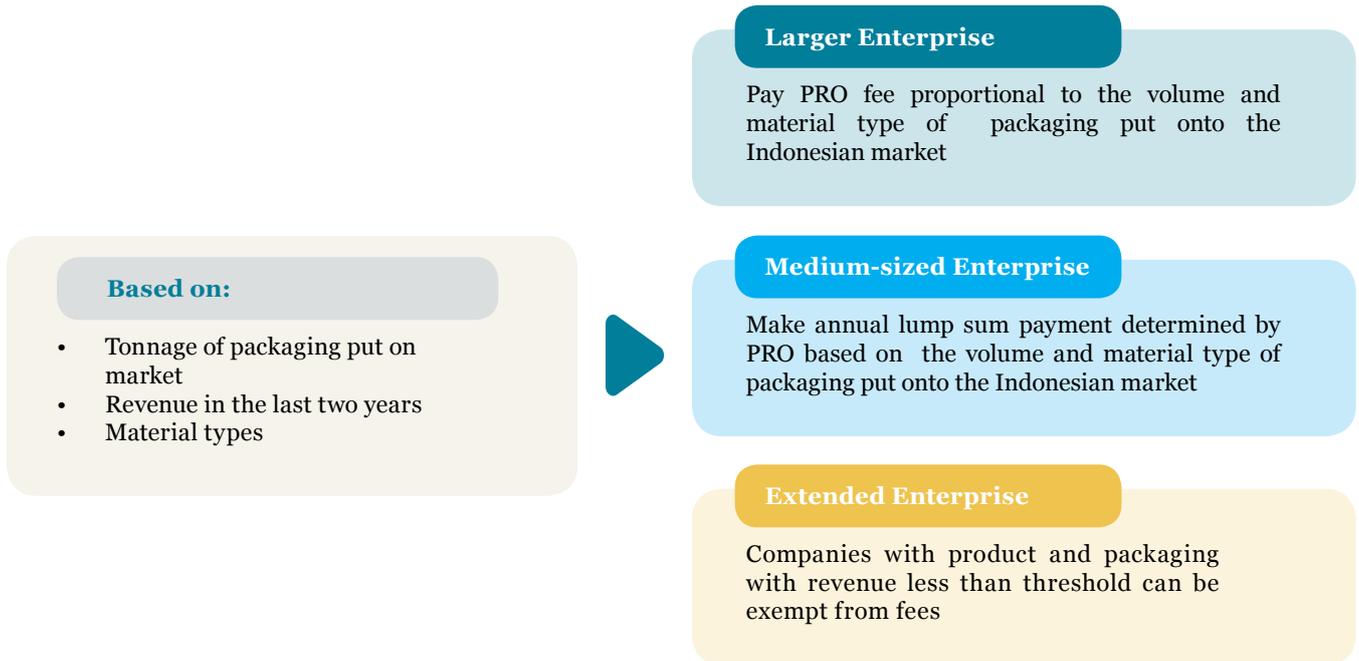
### 1. Fee Modulation

Determines the amount of fees paid by producers based on measurable product and packaging characteristics. Identifying grounds for fee modulation means observing indicators that reach beyond those used for defining more straightforward basic fee structures, including:

- **Recyclability:** fees can be differentiated corresponding to the degree of recyclability that the product or packaging possesses. A comprehensive analysis of product and packaging characteristics, including product format, size, material, transparency, color, and the existence of disruptors (e.g., adhesives, specific inks, and labels), should be conducted to determine the potential that the product and packaging has to complicate existing recycling systems.
- **Recycling rate:** modulation fees that are regulated according to the share of waste that is actually recycled.
- **Recycled content:** products that meet the threshold set for recycled content are eligible for bonuses or reduced fees.
- **Presence of hazardous substances:** an increase in recycling and end-of-life management in general can occur if the presence of hazardous substances is detected. These substances can reduce the value of recycled materials and impact the environment detrimentally if not properly disposed of.
- **Product durability and waste prevention:** the extent to which the lifespan of a product can prevent the product and packaging from being thrown away, thereby reducing the waste management contribution fee in general.

## 2. Fee Quantification Based on Company Size

Aside from fee modulation, qualification criteria based on company size are commonly employed in determining the appropriate contribution fee for each PRO member. Figure 11 elaborates on a few examples of the criteria that can be used for determining PRO contribution fees in Indonesia.



**Figure 11.** Qualification criteria for determining contribution fees

(Source: Anorudh, 2021)

## The Indonesia PRO's Producer Responsibility Organization Model

The IPRO (Indonesia PRO) was first established as an initiative in August 2020 by the members of PRAISE, an extended stakeholder responsibility organization. The IPRO currently operates as a voluntary, non-profit, and independent organization mainly focusing on increasing the collection and recycling of products and packaging at an end-of-life stage.

The IPRO currently operates in East Java and Bali, focusing on funding collection, recycling, and community awareness along with providing complementary funding for municipalities to improve the product and packaging waste management systems in these respective areas.

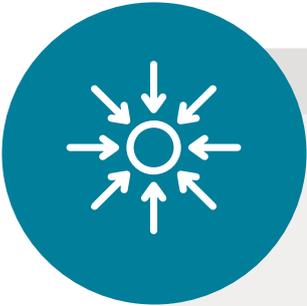


**Figure 12.** The IPRO's Position in the Product and Packaging Supply Chain

(Source: IPRO, 2021)

# SUPPORT REQUIRED FROM THE GOVERNMENT DURING THE TRANSITION PERIOD

This section will provide recommendations to the government on the support needed by industries, producers, and other relevant stakeholders as Indonesia transitions towards a circular economy via EPR implementation.



## Develop a Centralized EPR Portal

to facilitate registration of EPR participation from the targeted industries or producers. Registration is crucial as it can provide governments with the means to compile the information necessary for enforcement and surveillance purposes. It can also help industries or producers with updating their EPR obligation plan and reporting on waste generation baselines for their products and packaging. In this way, it can be clearly determined by how much each entity has to reduce their waste to meet the EPR target. As of January 2022, the MoEF are in the process of developing a national EPR portal to facilitate EPR compliance for producers. The prototype of the portal was shared during the 'NPAP Dialogue Series #2: EPR for Packaging in Indonesia: Policy and Regulation'.



## Provide Financial Incentives for Industries or Producers

conducting green business practices such as eco-design, presenting significant improvements in collection and recycling, and actively conducting intense communication and education activities with the public.



## Provide Financial Incentives, Especially for SMEs

difficulties while planning the 10-year EPR plan, as they both lack capacity building capabilities and have only limited budgets on which to operate. It is important to give financial support to SMEs, especially to those that have put effort into, for example, eco-design, or have conducted post-consumer waste management activities. In addition, support to SMEs can be provided in the form of exemptions on a case-by-case basis.



## Build a Research and Development Center

to facilitate innovation and technology transfer towards more sustainable products and packaging, such as eco-design innovation, advanced recycling technologies related to plastics-to-plastics chemical recycling, plastic-free packaging flow or reuse systems, and technologies geared especially towards a product or packaging traceability mechanism. In addition, facilitating capacity development, coaching, and skill building in the waste management and recycling sector in Indonesia would complement international practices, especially in terms of efficiency, cost-efficiency, safety, a transparent and accountable financial framework, global environmental standards, diversity, equity, and inclusion.<sup>[37]</sup>



### **Strengthen the Capability of Lower Levels of Government**

to handle their environmental responsibility with regard to carrying out EPR tasks at a local level, including offering required financial resource opportunities and providing concrete and specific capacity building programs to account for the needs of a particular region.<sup>[38]</sup>



### **Continue to Expand Efforts to Formalize the Informal Sector**

by minimizing the complex administration and reporting schemes required by the informal sector. In addition, a tax privilege scheme for recycling products and industries should be provided.



### **Maintain the Price Stability of Collected Raw Materials**

to allow informal sectors to have access to a stable income and support preventive healthcare, education, and financial inclusion.<sup>[39]</sup>

<sup>[38]</sup> OECD Korea, 2017.  
<sup>[39]</sup> SEA of Solution, 2020.

# KEY ACTIVITIES IN EPR IMPLEMENTATION

Strategic Action	Central and Local Government	Private Sectors
<b>A. Waste Reduction Strategy</b>		
1. Develop waste reduction plan	1. Provide coaching and consultation session for private sectors	1. Make strategic plan to meet the EPR goals by 2029
	2. Central government facilitates capacity development of local government regarding EPR system readiness	2. Initiate regular consultations with government, experts and other stakeholders regarding the development of the strategic plan
	3. Allocate funding and investment to increase waste infrastructure, especially in villages and rural	3. Mapping potential EPR partners (eg recycling industry, waste bank, TPS3R, NGO)
	4. Prepare communication strategy to socialize EPR system with private sector and the public	4. Allocate budget for R&D on sustainable products and packaging
	5. Develop KPIs for enforcement and surveillance purposes	5. Join multi-stakeholder platform initiated by the government
	6. Prepare draft for packaging and labeling guidelines for industries	
	7. Establish central EPR portal	
	8. Initiate multi-stakeholder platform to facilitate coordination and regular dialogue toward EPR implementation	
2. Strengthen waste management system at a local level	1. Mobilize funding and investment to improve waste infrastructure, especially in rural and remote areas	1. Mapping potential EPR partners (e.g., recycling industries, waste bank, TPS3R, NGOs)
	2. Central government facilitates capacity building for local governments in terms of waste management in general and readiness for the EPR system	2. Explore potential for collaborating with municipalities in terms of supporting them with capacity building, collection points, and incentives for waste infrastructure
<b>B. Implementation stage</b>		
3. Pilot project on waste reduction implementation	1. National and local governments support monitoring and evaluation on pilot project	1. Identify gap and analysis problems that may have occurred during implementation of the pilot project
	2. Review implementation report and provide feedback and suggestions	2. Review performance of the waste reduction partner
		3. Collaborates with NGOs and municipalities to socialize EPR organizations partner to the community
4. Review on the implementation of pilot project	1. Review the performance of the local government in carrying out EPR mandates at a local level	1. Provide feedback and suggestions to the government on what they can support during the transition
	2. Facilitate consultation and guidance for companies after pilot project implementation	2. Actively consult with the government and experts on the findings from the pilot project
	3. Provide financial incentives for companies who implement green business practices and go beyond the baseline target	3. Review and set a new target for waste reduction partners, including recycling industries, waste banks, TPS3Rs, or NGOs
	4. Initiate regular stakeholder dialogues regarding the EPR implementation progress	4. Replicate successes and map failures

<b>Public</b> (e.g., NGOs, Informal Sector, and the Community)	2021	2022	2023	2024	2025	2026	2027	2028	2029
1. Coordinate and collaborate with the government and the private sector to prepare a communication strategy for the public in relation to EPR enforcement in general									
2. Prepare communication strategy with regard to raising awareness around at-source waste segregation									
3. Improve waste management database systems in the downstream value chain									
4. Join initiative related to take- back or deposit refund mechanisms initiated by retailers or companies									
1. The general public can find information related to the closest collection point in their neighborhood									
2. NGOs can prepare communication strategy with regard to raising awareness around at- source waste segregation									
1. Support companies with socializing EPR partners available in the neighborhood									
1. Review the participation rates of the community in the EPR implementation									
2. Mapping possible measures to improve and increase people's participation in the EPR implementation									

# KEY ACTIVITIES IN EPR IMPLEMENTATION

Strategic Action	Central and Local Government	Private Sectors
<b>C. Implementation, Review, and Monitoring</b>		
<b>D. Policy Options and Recommendations</b>		
5. Evaluation of 'MoEF Regulation No. 75/2019'	1. Review the overall policy, mapping what should stay and enforcing more rules where necessary based on the evaluation of the EPR implementation	1. Provide feedback and suggestions to central and local governments with regard to EPR policy
	2. Identify industries that should be regulated under the 'EPR regulation'	

(Source: South Pole compilation)

Public (e.g., NGOs, Informal Sector, and the Community)	2021	2022	2023	2024	2025	2026	2027	2028	2029
1. Provide feedback and suggestions to companies and central and local governments with regard to EPR policy									

# Conclusion

An extensive study on the current implementation of EPR in Indonesia has been conducted to identify the gaps in escalating Indonesia's transition to a circular economy via EPR. This study revealed that many things need to be done to strengthen the foundation of EPR implementation in Indonesia, from ensuring clear roles and responsibilities for relevant stakeholders to establishing sufficient implementation support, such as waste infrastructure, a secondary market for plastic, and capacity building.

The findings of this study indicate that:

- Indonesia is currently at an early stage of EPR implementation as the 'EPR regulation', or the legal framework of the EPR, was only issued in 2019. The EPR implementation is now at the phase wherein obligated companies have to submit their 10-year waste reduction plans. Despite the relative infancy of EPR in Indonesia, several barriers and opportunities have already been observed that can both hinder and accelerate EPR implementation.
- The ambiguous 'EPR regulation' challenges industries or producers to fulfill the administrative obligations of the EPR scheme. To assist with this, the MoEF provides one-on-one consultations and coaching for industries or producers, offering the possibility for obligations to be adjusted and negotiated on a case-by-case basis.
- Many industries or producers, especially big and top-brand companies, have initiated waste reduction activities prior to the issuance of the 'EPR regulation' following commitments made by their directorate. However, these existing initiatives are currently unable to significantly reduce the waste generation stemming from products and packaging;
- The 'EPR regulation' set out a waste reduction target for industries or producers of 30% by 2029. However, this roadmap was not accompanied by a stepwise approach that could guide industries or producers towards achieving this target.
- The struggle to follow EPR regulations in Indonesia impacts SMEs most, as a lack of financial resources, knowledge, and technical capabilities with regard to sustainable business practices can often pose insurmountable barriers.

Building upon these opportunities and barriers, the present study has proposed guidelines and recommendations that aim to fill the gaps in Indonesia's development towards a circular economy using science and evidence-based analysis. These guidelines and recommendations include:

- Establishing two EPR scenarios and preparing corresponding guidelines for industries or producers with step-by-step advice on how best to comply with an EPR scheme. The first scenario is the result of an interpretation of the 'EPR regulation' that assists producers with conforming to the legal framework of an EPR, complete with a stepwise approach for each mandate. The second scenario allows producers to apply a high level of mandatorily adopted environmental responsibility as part of a push towards climate leadership.

- Including costs during determination of the EPR financial structure for:
  - Waste management plans: collection, sorting, recycling, and forwarding for other treatment
  - Communication strategy: education and raising awareness around product and packaging waste
  - Enforcement and surveillance of the EPR system, including administration and auditing
  - Research and Development
- Promoting an industry-led non-profit PRO built upon an existing PRO (i.e., the IPRO) across multiple islands in Indonesia is the preferred outcome, as it is well-suited to producer characteristics often found in Indonesia and the archipelagic traits of the country.
- The success of EPR implementation should not be classified solely as the responsibility of producers, but the responsibility of all stakeholders involved along the plastic and packaging value chain. A series of lists containing support required from the government has been organized to accelerate the transformation of Indonesia toward a circular economy.

The focus of EPR compliance should lie with increasing the value of the product and packaging life cycle by optimizing packaging design and increasing its after-use value for recycling, all while creating product and packaging waste management that is sustainable, financially rewarding, and operated in a transparent and auditable manner. In addition, EPR compliance should carry a public service message, reinforcing that EPR targets can only be achieved through strong collaborative processes between all relevant stakeholders, be they government, the general public, or waste operators, and with clearly defined roles and responsibilities assigned to each stakeholder.





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