SOUTHEAST ASIA RECYCLING COALITION

POLICY RECOMMENDATION PAPER

Strengthening Indonesia's Waste Management Roadmap

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presents

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FOUNDING MEMBERS OF THE COALITION

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This policy paper was developed by Vriens & Partners for the Southeast Asia Recycling Coalition.

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References to specific laws, regulations, or policies related to Extended Producer Responsibility (EPR) in Indonesia are based on publicly available information as of the date of writing and may be subject to change.

Any errors or omissions are the sole responsibility of the drafting team.

Southeast Asia Recycling Coalition is an industry association dedicated to coordinating efforts leading Fast Moving Consumer Goods companies to tackle ongoing challenges in managing and recycling packaging waste across the region.

The Coalition works with policymakers, academics and stakeholders from across the recycling value chain to support efforts around EPR policy development and implementation, towards improving recycling outcomes in Southeast Asia.

The founding members of the Coalition represent leading global consumer goods brands, including Royal FrieslandCampina, Pernod Ricard, Danone, Mars Incorporated, and PepsiCo. The paper is supported by Circulate Capital, the Southeast Asia Public Policy Institute, the Indonesian Packaging Recovery Oragnization, and Vriens & Partners.

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Executive Summary

Strengthening Indonesia's
Waste Management Roadmap as the
Foundation for EPR in Indonesia

1 Indonesia continues to make progress on enhancing its waste reduction policies, having issued the Minister of Environment and Forestry's Regulation No. 75 Year 2019 (MR 75/2019) on Waste Reduction Roadmap by Producers.

The regulation covers

- **Several consumer goods sectors** – retailers, food and beverage services
- **Consumer goods manufacturers** including F&B and cosmetics
- **A range of packaging materials** – plastics, aluminum cans, glass, and paper
- Sets a target of **30 percent waste reduction** by 2029.

2 Like many developing countries, Indonesia faces operational challenges in implementing its waste reduction roadmap, including a lenient voluntary regime, fragmented waste management system, insufficient resources, and lack of technical capacity.

Indonesia's large, sprawling, archipelagic geography further exacerbates these challenges.

3 This whitepaper proposes specific policy recommendations to strengthen Indonesia's waste reduction roadmap, namely by:

Expanding the scope of recycling under MR 75/2019

Allowing companies to meet material-specific waste reduction targets in phases, with gradual expansion of the sectors covered to include upstream industries; and by maintaining a flexible recycling framework.

Introducing a strong institutional framework for Producer Responsibility Organizations (PRO)[1]

with clear functions and roles and exploring the introduction of modulated fees that can serve as an incentive for extended producer responsibility (EPR) practices.

EPR policy in Indonesia

In 2019, the Ministry of Environment and Forestry laid the initial foundation for Indonesia's EPR regulation.

The Waste Reduction Roadmap outlined the core framework, including provisions designed to encourage manufacturers, the food and beverage industry, and retailers to take responsibility for managing waste from production to post-consumer disposal.

As of August 2024, 20 producers have already begun executing their roadmaps, collectively reducing approximately 127,000 tons of waste in 2023. There are 556 producers that received technical guidance from the Ministry, 95 have created accounts to develop their waste reduction roadmaps, 52 have submitted their roadmap documents but not yet approved, and 21 producers have had their plans approved and are ready for implementation.[2]

In 2024, the government made some progress, but waste reduction outcomes remain limited. Across 323 districts and provinces, there was a 1.11 percent waste reduction. However, the 390,278-ton reduction remains far below national targets, which include a 70 percent reduction in marine plastic waste by 2025, a 30 percent reduction in waste generation at the source, and a 70 percent improvement in overall waste management.[3]

The Ministry of Environment is currently reviewing the Ministerial Regulation No. 75/2019 on the Waste Management Roadmap and is considering elevating its status to a Presidential Regulation.

This effort aims to:

Establish a stronger legal foundation for Extended Producer Responsibility (EPR) in Indonesia, including the incorporation of provisions related to the establishment of a Producer Responsibility Organization (PRO) and the corresponding fee mechanism.

The rationale for elevating the regulation is also to broaden institutional involvement beyond the Ministry of Environment, enabling coordination with other key government bodies such as the Ministry of Industry, the Ministry of Health, and the National Food and Drug Supervisory Agency to ensure more effective implementation of EPR obligations.

Key Implementation Challenges

As with other developing countries, Indonesia faces implementation challenges in meeting its waste reduction targets.

These challenges relate to the voluntary nature of the regulation, fragmentation in waste management system, lack of resources, and lack of capacity.

1. VOLUNTARY COMPLIANCE MECHANISM

The MoEF Regulation No. 75/2019 could benefit from a more binding approach. Currently, there are no specific penalties, fines, or administrative sanctions for producers who fail to comply with waste reduction targets or neglect to submit their waste reduction roadmaps.

The current policy relies heavily on voluntary compliance without a comprehensive monitoring system. Progress reports submitted by producers are self-reported, and there is no institutionalized third-party verification to ensure accuracy and credibility of reported outcomes.

2. FRAGMENTED WASTE MANAGEMENT SYSTEM

The collection, sortation, and processing of waste, especially plastics, is fragmented between players in the industry. Clarification of the primary waste management objective, whether it is to expand post-consumer collection of packaging waste or to increase recycling rates, will avoid conflicting activities by different actors.

3. INSUFFICIENT FUNDING

A fully operational facility is needed especially for mid-stream processing facilities such as waste banks, sorting centers, and small-scale aggregators. Existing responsibilities of public and private funding for circular waste management leave operational funding gaps and are not sufficient to scale the system in Indonesia.

Agreeing on the waste management objectives and the corresponding funding responsibilities for the private sector, national, and sub-national governments will be key to effectively implementing EPR. Such an agreement should consider each material type and activity, such as collection capacity and maturity of the recycling value chain.

4. LIMITED TECHNICAL CAPACITY

One of the key issues across all sectors in Indonesia is a lack of adequate data to develop and implement a sound EPR scheme.

EPR could make more resources available to help build technical capacity in the waste management system. By involving industry in the funding of waste management, companies' strategic and operational expertise can be more readily shared with other stakeholders in the system.

Recommendations

This paper explores potential mechanisms to strengthen the existing waste management roadmap outlined in MR 75/2019, aiming to establish a more robust foundation for accelerating the EPR regime in Indonesia. The recommendations comprise strengthening the scopes of MR 75/2019 and establishing an effective EPR regime.

Expanding the existing scope of waste management roadmap under MR 75/2019 is needed to ensure producers can support Indonesia's waste reduction targets.

- These expansions should comprise the industry scope to include upstream sectors, a phased approach for all material types, and flexible recycling scope between 3R and 9R.

Effective execution of the waste reduction roadmap in the future also needs the introduction of an institutional backbone for Extended Producer Responsibility (EPR) in Indonesia.

- This includes the establishment of Producer Responsibility Organizations (PROs),[4] the implementation of modulated pricing fees, as well as the possible introduction of a public registry under the authority of the Ministry of Environment to serve as a centralized data source – expanding on existing data and monitoring platforms available in Indonesia, including the National Waste Management Information System (SIPSN) – for listed companies subject to EPR compliance.

While the formal establishment of PROs requires amendments to Law No. 18/2008 on Waste Management, elevating the MR 75/2019 to a Presidential Regulation will provide a strong legal foundation and mandate cross-ministerial coordination.

- The Presidential Regulation should establish core principles, obligations, and institutional frameworks, while delegating technical operational details - such as material-specific targets, fee formulas, and verification protocols - to implementing Ministerial Regulations.

- **Future role of PROs will need to be comprehensive,** including in organizing, coordinating, and providing financing mechanisms for waste management initiatives. Indonesia might consider introducing basic pricing structured on modulated fees based on sustainable materials use, from the beginning. Modulated fees can serve as a powerful incentive mechanism designed to encourage sustainable packaging practices.

SECTION I

Strengthening The Waste Management Roadmap

Scope of industries subject to waste management roadmap

This paper recommends that, to ensure comprehensive management of plastics throughout their entire lifecycle—including efforts to reduce production and enhance circularity—the scope of industries must extend across the upstream, midstream, and downstream sectors. In the current MR 75/2019, only downstream sectors are required to comply with the waste management roadmap, excluding upstream plastic producers from the obligation to develop and implement sustainable business strategies.

The scope of EPR should include brand owners and importers who place packaged goods on the market, and upstream producers such as resin manufacturers and packaging converters, particularly in areas of design innovation, reduction of problematic materials, and recyclability improvements. This is an initiative advocated by the Indonesia Packaging Recovery Organization (IPRO), which seeks to promote voluntary off-take arrangements to ensure the availability of off-takers for recycled materials, thereby reducing reliance on fossil fuels and stimulating demand across the supply chain for recycled inputs supplied by converters.[5]

Article 3 of MR 75/2019 specifies the downstream industries required to submit a waste reduction roadmap.

These include the food and beverage industry, consumer goods, personal care industry, food and beverage services industry (restaurants, hotels), and retailers. **However, waste reduction responsibility should also comprise the upstream packaging industry to ensure that Indonesia can meet its targets.**

Firstly, recycling alone is insufficient to resolve the pollution crisis.

Nearly 80 percent of plastics used in single-use products are not economically viable to recycle. This is often due to product design choices—such as the type of polymer used, the inclusion of color additives, the combination of different materials, or the use of hazardous additives—that hinder recyclability and may also pose health risks to waste management and recycling workers.

Additionally, the lack of adequate recycling infrastructure further limits the effectiveness of downstream recycling efforts.

Addressing upstream production is critical to reduce plastic production in Indonesia.

Plastic production in the country is growing at an annual rate of **4%**[6]

Without innovative and enforceable commitments to reduce plastic use at the production stage, the increasing supply of virgin plastic will only intensify the existing waste crisis, which currently amounts to 7.8 million tons annually.[7] Strengthening obligations for upstream actors will complement and reinforce existing policies issued by the Ministry of Environment, such as the ban on plastic scrap imports, which is aimed at reducing the volume of plastics entering the country.

The government needs to set clear definitions for upstream, midstream, and downstream industries – as has been done in Vietnam,[8] South Africa,[9] – along the following criteria:

upstream

industry producers

are industries involved in activities related to raw material and plastic production, which includes plastics packaging production.

midstream

industry producers

include industries engaged in design, manufacturing, packaging, distribution, and use of plastic products.

downstream

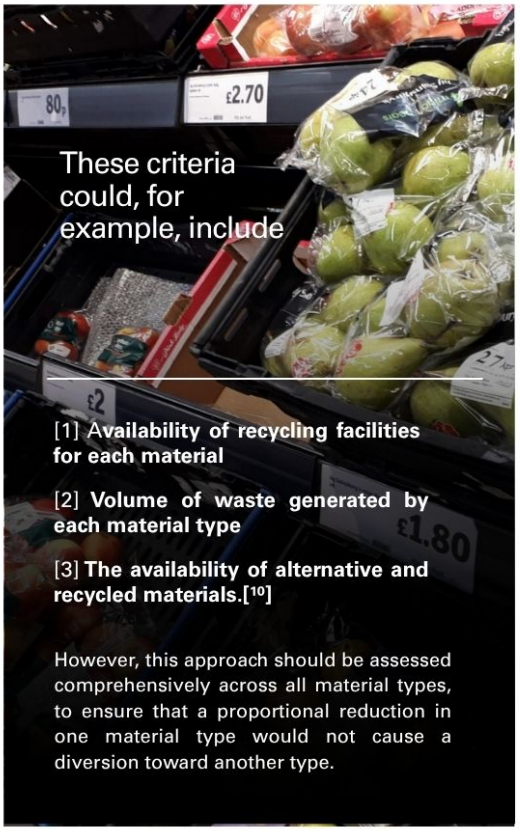
industry producers

include include industries responsible for end-of-life plastic management, including sectoral industry use of packaging, segregation, collection, sorting, recycling, and final disposal.

Scope of materials subject to EPR

The revised regulation should aim at both reducing the overall waste production and incentivizing the development of a solid waste management and recycling infrastructure to manage packaging waste that cannot be recycled.

In principle, this could be done comprehensively for all material types in phases **with realistic reduction targets to ensure gradual, but consistent progress towards Indonesia's waste reduction roadmap.**
These targets should be determined based on a set of criteria for each material type.



These criteria could, for example, include

[1] **Availability of recycling facilities for each material**

[2] **Volume of waste generated by each material type**

[3] **The availability of alternative and recycled materials.[10]**

However, this approach should be assessed comprehensively across all material types, to ensure that a proportional reduction in one material type would not cause a diversion toward another type.

Currently, MR 75/2019 mandates a uniform target, requiring companies to reduce 30 percent of their waste generation by 2029. The target comprises the following key packaging materials – plastics, aluminum cans, glass, and paper. However, with only 21 companies, out of approximately 550 producers that have received technical guidance, having submitted their roadmaps and obtained approval, it underscores the significant challenges in meeting the 30 percent waste reduction target.[11] These challenges are further exacerbated by infrastructure limitations, as current systems do not equally support the recovery and recycling of all material types.[12]

The revised regulation should adopt a material-specific, possibly tiered reduction target.

Waste reduction targets can be tailored to the recyclability of each material and the capacity tier of the company.

The updated system should start simple and avoid overly complex designs that are unlikely to be effectively implemented,

but must apply to all packaging types to ensure fairness.

Incentives should be included for using the most sustainable material and format types.

Targets and timeline should be clear, realistic, binding, and ambitious

to encourage the development of a solid waste management and recycling infrastructure for all packaging materials. The phased approach aims at enabling an efficient and realistic implementation.

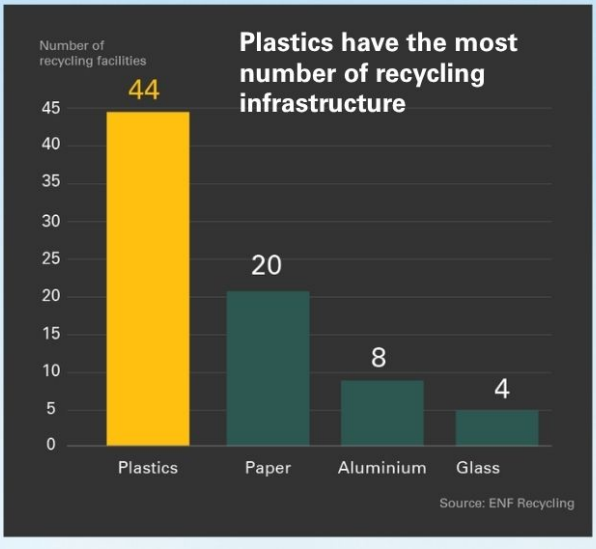
In setting up each material-specific reduction targets, the revision should be data-driven and consider the following criteria:

1 Availability of recycling infrastructure for specific materials.

Reduction targets must reflect the infrastructure needs of different types of materials to ensure that industry players have equal access to the necessary facilities to meet their obligations.

Some material types have limited number of recycling facilities in Indonesia (See Figure 1) and increasing infrastructure investment could be introduced proportionally, as a target, for all material types. This criteria is used, for example, in Vietnam and South Korea.[13]

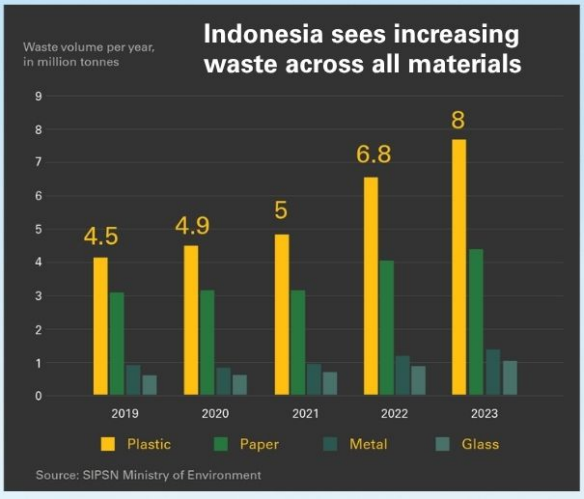
Figure 1. Number of recycling plants based on material types in Indonesia (2024)



2 Volume of waste generated by material types.

To effectively recover overall waste, the roadmap needs to enable a more substantial and gradual reduction of waste across all material types.[14] Since all materials have seen increases in waste production in the country (see Figure 2), each material type could have proportional reduction targets to ensure an equal approach across types.

Figure 2. Waste composition by materials, 2019-2023



3 Availability of alternative and recycled materials.

Waste reduction targets should consider the availability and development of functionally equivalent packaging materials, particularly those suitable for food-grade use, as well as the material's recyclability.[15] The availability of alternatives and higher recyclability could be introduced as a criteria for a shift from virgin materials.

As the foundation to develop circular ecosystem that extends beyond the current focus on single-material plastics outlined in waste management roadmap, **the EPR scheme should incorporate complex, hard-to-recycle, and small volume packaging.** This inclusion raises several important considerations, including:

- the distinct treatment requirements for materials such as multilayer and flexible plastics,[16]
- opportunities to drive innovation in packaging design and upstream producer responsibility
- the need to address cost implications for both industry and consumers, particularly in a price-sensitive market.[17]

EPR incentives such as modulated fees or design-for-recyclability benchmarks can encourage producers to invest in more sustainable alternatives, such as mono-material packaging, compostable materials, or refill and reuse systems. Over time, this can also stimulate upstream investment in local R&D and materials innovation.[18]

Price sensitivity and consumer purchasing power: The inclusion of multilayer materials in the EPR scheme must consider the potential cost implications for both producers and consumers. A transition strategy should be phased and supported by government incentives and industry consultation to ensure a balanced approach that aligns environmental objectives with socioeconomic conditions. The upcoming regulation should mandate a comprehensive cost - benefit and socioeconomic impact assessment.

Scope of recycling: 3R to 9R

The current scope of recycling approach, which is limited to the 3R framework – namely Reduce, Reuse, and Recycle – can be retained, with possible detailing into 9R.

MR 75/2019 does not yet incorporate a broader waste management hierarchy reflected in a possibly expanded 9R framework. Recently, **the Circular Economy National Roadmap and Action Plan Indonesia 2025–2045 issued by the National Development Planning Agency has highlighted the 9R framework.**

This suggested framework incorporates principles of Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, and Recover (see Figure 3). These can serve as reference for producers to adopt diverse and flexible models based on their capacity and specific conditions. There are views, however, from among the regulators that the 9Rs comprise sub-categories of the traditional 3Rs, for example:

- **Reduce** includes mechanisms such **as refuse and rethink.**
- **Reuse** includes mechanisms such **as repair and recover.**
- **Recycle** includes mechanisms such **as remanufacture, refurbish, and repurpose.**

Figure 3. 9R Principles

Source: National Development Planing Agency

9R Principles	Definition	Examples of Application
R0 Refuse	Avoiding redundancy in the creation of products with the same function.	Removal of formwork using modular and precast concrete in construction projects.
R1 Rethink	Using products more intensively.	Utilizing digital platforms by businesses to facilitate product sharing.
R2 Reduce	Improving production effeciency and product utility by using fewer materials	Creating clothing patterns with cutting processes designed to reduce fabric waste in the garment industry
R3 Reuse	Reusing products that are still usable without altering their function.	Using wearable clothing and household textiles (curtains, tablecloths, bedding) from donations
R4 Repair	Repairing damaged products.	Repairing electronic products at service centers.
R5 Refurbish	Refurbishing products, typically older products, to restore their functionality.	Reusing old wooden doors from older buildings that are sanded and repainted for use in new buildings.
R6 Remanufacture	Using components from old, non-functional products in new products with the same function.	Retrieving Smart Meters from PLN (State Electricity Company) customers to replace worn-out components and then reusing them for other PLN customers.
R7 Repurpose	Repurposing non-fuctional products for use in a different function.	Processing food waste into animal feed.
R8 Recycle	Processing materials to produce the same material (with the same or lower quality)	Recycling plastic packaging into secondary raw
R9 Recover	Converting materials into energy.	Recovering plastic packaging into energy in the form of oil, RDF, gas.

To enable a more flexible mechanism that allows companies to implement waste reduction initiatives across the different aspects of the recycling scope, this paper recommends that the following criteria be considered for effective implementation:

1. Tailored implementation according to the material types

While the 9R represents an ideal set of recycling scope, its application will need to be tailored based on industry needs, readiness, and relevance. For example, some of the recycling principles under 9R – such as refuse, rethink, refurbish, or repair – may not be relevant for the food and beverage industry.

2. Investment in technology capacity with improvement in sorting mechanisms

The integration of broader waste reduction mechanisms into the national framework has the potential to enhance investment attractiveness in Indonesia's waste processing sector. The inclusion of Refuse-Derived Fuel (RDF) as a last resort for the waste reduction roadmap could stimulate demand for supporting technologies and infrastructure. As an effective RDF processing requires a consistent stream of clean, pre-sorted materials,[19] the government should adopt a phased implementation strategy for RDF and R9, aligned with local and industrial readiness.

3. Alignment with the waste management hierarchy, including the potential of incorporating RDF into the 3R (see figure 4)

The waste management hierarchy needs to serve as a guiding reference. The hierarchy starts from upstream activities, e.g., packaging, to landfill management in the downstream segment.

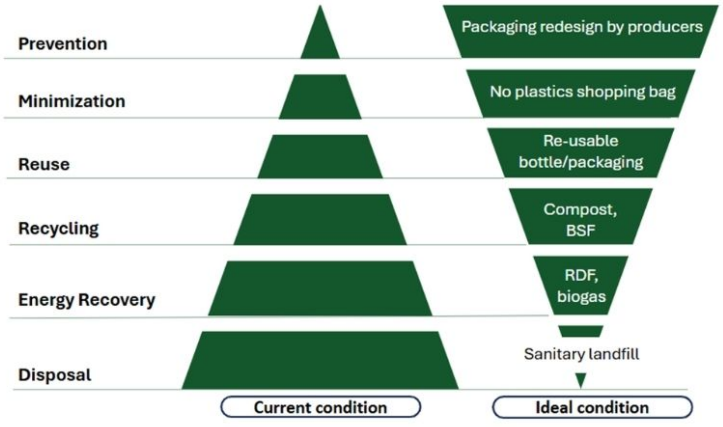
4. Data reporting and monitoring capacity

A robust system for data collection, reporting, and monitoring is fundamental to the integrity of the waste reduction roadmap.[20] This includes transparent tracking of recovered materials, recycled products, and overall waste reduction performance. Without a comprehensive monitoring framework, the possible expansion to the 9Rs will fall short in capturing real-world impacts and providing actionable insights for improving waste management outcomes.

Figure 4.

Waste management hierarchy framework

Source: Ministry of Environment



SECTION II

EPR Governance

EPR governance could be further enhanced by introducing an effective mechanism to better organize and coordinate waste management efforts in Indonesia through the establishment of a neutral PROs that serve as umbrella organizations for producers.[21]
Effective PROs, or a governing body, and/or a public registry, would facilitate cooperation among producers and third parties, ensuring more streamlined, efficient, and standardized implementation of waste management responsibilities.

This chapter discusses the operational and financial aspect of EPR governance, through PRO establishment (PRO authorities, structure between national and municipal, role and responsibilities, supervisory board, and target setting), **as well as the financial aspect in determining EPR fees borne by members.**

PRO Establishment

Indonesia should initiate its Producers Responsibility Organization (PRO) framework with an industry-led approach and an ideally non-profit model.[22, 23]

An industry-led PRO offers a cost-effective platform that facilitates shared responsibility through a dedicated financial structure. The comparison below outlines the advantages of an industry-led PRO across key aspects, including financial structure, resource management, and monitoring and enforcement (See Table 1). The case studies in the annex also highlighted some international experience with different PRO regimes.

Table 1. Comparison of industry-led PRO and government-led PRO

PARAMETER	INDUSTRY-LED	STATE-LED PRO
 **Financial Structure**	**Neutral, third-party entity** with a dedicated financial structure, separate from public funds, ensuring that EPR duties are exclusively funded by its members. **Market-driven** gives room for the establishment of for-profit PROs to drive innovation in waste management mechanisms and pricing strategies. Surpluses generated may be reinvested to manage future waste obligations, improve recycling processes, or reduce EPR fees for participating companies.	**Risks of public fund dependency** If PROs are linked to public funds, it becomes challenging to ensure that funds are strictly allocated to waste management and PRO duties, rather than being treated as a tax. **Potential for Corruption** A single, state-led PRO pooling all financial resources could become susceptible to corruption and inefficiencies.
 **Resource Management**	**Cost efficiency and shared responsibility** The setup costs of a PRO can be distributed among multiple manufacturers and industry players, making it a cost-effective solution.	**Resource allocation and administrative burdens could fall on the government** as it will act as both an enforcer, regulator, and executor. Requires adequate capacity, expertise, financial resources, and human capital to manage the end-to-end waste processing of packaging waste effectively.
 **Monitoring and enforcement**	**Monitored and evaluated by the Ministry of Environment.** The setup costs of a PRO can be distributed among multiple manufacturers and industry players, making it a cost-effective solution.	**No independent and external body to monitor** unless specifically assigned under the Ministry of Environment.

PRO Authorities

PROs play a crucial role in waste disposal management, easing the producers' burden through collective process. Companies should have the flexibility to choose mechanisms in collection and recycling, such as through their own recycling facilities, engaging third-party recyclers, or participating through a PRO, depending on cost-effectiveness.

In general, PROs authorities are divided into: (i) execution – coordination in the waste management chain, (ii) streamlining reporting and evaluation, and (iii) education and public awareness on waste management.[24] Below are the specific authorities that common industry-led PROs should provide to the relevant stakeholders within the waste management chain,[25] including:

PRO's Authorities	Key Responsibilities
Execution 	**A. Fund management** ◦ PROs are responsible for collecting and managing all funding received from obliged companies, ensuring that fees charged are fair and used for the proper processing of packaging waste. **B. Contract and tender management with the supply chain of waste facilities** ◦ PROs oversee tenders and contracts for all activities conducted as part of the EPR system, including collection, sorting, and recycling of packaging waste, as well as developing the necessary infrastructure. PRO also has the flexibility to establish relationship with partners in the life cycle of waste processing from upstream to downstream, including other waste banks, material recovery facilities (MRF) and recycling partners, informal waste pickers. **C. Producer partnerships** ◦ All obligated producers are required to engage with the national PRO to fulfil their recycling obligations.
Reporting and evaluation 	**A. Monitoring and documentation** ◦ PROs need to document all activities related to the collection, sorting, and recycling of packaging waste and monitors service providers to ensure they fulfil their collection and recycling responsibilities, including by adopting standardized audit and digital tracking system and building on existing system like the National Waste Management Information System (SIPSN).[26] **B. Transparency and traceability** ◦ Ensuring data transparency and preventing double counting of collected and recycled materials. While implementation remains flexible under the authority of the national PRO, the PRO may develop a centralized digital platform to track data across the value chain to ensure accountability and prevent double counting. **C. Reporting to the Ministry of Environment on EPR compliance** ◦ PRO must provide documentary evidence and verification to the MoE as the supervisory authorities, demonstrating that all responsibilities have been fulfilled and that fees collected from companies have been utilized in accordance with established agreements.[27] **D. Standalone reporting of EPR Compliance** ◦ While the current environmental licensing regime is considering integrating EPR compliance into AMDAL or UKL-UPL, EPR should remain a standalone reporting obligation. AMDAL is designed to assess and mitigate site-specific environmental impacts of a project before it begins operation, while EPR governs the post-consumer waste, assigning ongoing responsibility to producers for collection and recycling after products enter the market. The two regimes also apply to different subjects: AMDAL applies to facility operators, whereas EPR applies to producers, brand owners, and importers. As a result, a facility may require AMDAL without being subject to EPR, and a producer may be subject to EPR without operating any physical facility.

PRO's Authorities	Key Responsibilities
Education and innovation 	**A. PRO may conduct regular public outreach and awareness campaigns** ◦ to educate the public on producers' responsibilities in managing the end-of-life of packaging and promoting product life cycle extension. **B. PRO may also carry out external promotional activities** ◦ to attract more companies to join the industry-led PRO, thereby strengthening collective efforts.
Target setting 	The national PRO is responsible for setting waste collection and recycling targets. This process may involve consultations with municipal-level stakeholders, including local governments, material recovery facilities (MRFs), and recyclers, to ensure targets are achievable and locally grounded.

PRO structure: National industry-led PRO with strong municipalities involvement

Indonesia's EPR system may wish to adopt a model that enables structured coordination between national-level PROs and municipal stakeholders to ensure efficient waste collection and source-level sorting.

Given the industry-led nature of PROs, this model, adopted in South Africa and Japan to collaborate with municipal stakeholders.[28] This system facilitates collective access for producers to meet their recycling obligations through industry-led PROs, while also upholding municipal authority over local waste collection.[29]

The PRO's core functions are to support development and implementation of the EPR roadmap, operational coordination, informal sector integration, consistent producer implementation and enforcement, reporting, online data management and protection, and auditing.

Informal sector waste workers should be integrated into EPR regulations so that they have opportunity to earn a livelihood and minimize the risk of human rights impacts, by creating opportunities for fair compensation and allowing informal sector workers to compete for contracts with organizations within the EPR system for procurement or services.[30]

This approach acknowledges the diverse local contexts of waste management in Indonesia, an archipelagic nation characterized by varying geographical, population (and waste) densities, and infrastructure conditions.

The key rationales for adopting this structure include:

Variability in waste processing infrastructure across municipalities.

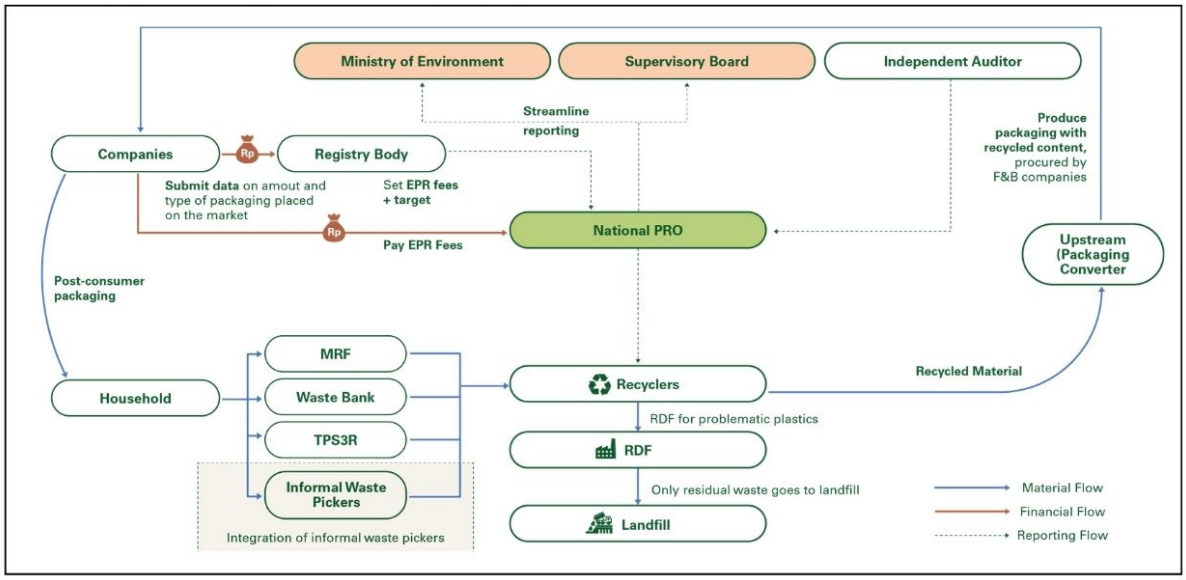
Differences in waste collection and processing costs due to economies of scale and infrastructure availability, which influence the calculation of EPR fees (as detailed in the following section on EPR fee design).

- **Enhanced municipal coordination to support more effective and context-specific target setting.** Targets are more achievable when designed at a smaller scale, such as the municipal level, especially when supported by stronger coordination between local landfills, and national PROs, potentially including infrastructure and knowledge-sharing support.

The industry-led PRO may choose to either establish or collaborate with municipal stakeholders.

This structure reflects existing models such as the main waste banks (*Bank Sampah Induk*) and regional waste banks (*Bank Sampah Teknis*), where localized operations coordinate with centralized aggregators to manage day-to-day waste handling activities
(See Figure 5).

Figure 5. Material, Financial, and Reporting Flow



Municipal stakeholders' responsibilities will need to comprise:

Manage collection and sorting

Under Circular Letter No. 3/2025 on the Elimination of Plastic Pollution, municipalities are legally mandated to organize the collection and sorting of packaging waste. This applies to all regional leaders and producers of packaging-related products.

Waste per material coordination

Municipalities coordinate the transfer of collected and sorted packaging waste to designated recyclers within the PRO network.[31]

Inclusion of the informal sector

As a structured entry point for the inclusion of informal waste workers, municipal stakeholders (and/or the municipal branches of the national PRO) may contribute to the formalization of informal waste pickers by offering formal contracts to waste picker organizations for specific supply chain stages. For example, a PRO could enter contracts with waste picker cooperatives in designated areas to support community-based waste collection efforts.

Table 2. Global benchmarking on national and municipal coordination

COUNTRIES	GOVERNANCE BETWEEN PRO AND MUNICIPALITIES	FUNDING FLOW AND FORMAL AGREEMENTS
South Africa Waste Act and associated EPR Regulations, Gazette No. 44539, 2021	**PROs submit annual reports detailing:** (i) Details of partnerships with municipalities, (ii) Amount of waste collected via municipal channels, (iii) Investments or improvements made in municipal infrastructure.	**Funding Flow** Producers → PRO → Municipalities **Formal Agreements** MoUs or Service Level Agreements (SLA)
India Plastic Waste Management Rules, 2016, amended in 2022	**PROs submit an Action Plan detailing their plan on:** (i) Engage with Urban Local Bodies ("ULBs")/municipalities, (ii) Operate within municipal jurisdictions, (iii) Finance waste collection and infrastructure in partnership with ULBs.	**Funding Flow** Producers → PRO → Municipalities **Formal Agreements** MoUs between PROs and Urban Local Bodies (per municipal)
Japan Container and Packaging Recycling Law, 1997	The law mandates municipalities **responsibility for collecting, sorting, and storing recyclables** (esp. packaging waste), and **mandates cooperation between all stakeholders** - nationally centralized Japan Containers and Packaging Recycling Association "JCPRA" (PRO) with local government.	**Funding Flow** Producers → JCPRA (PRO) → Municipalities **Formal Agreements** National-level contracts via JCPRA

PRO Evaluation

In evaluating PRO, the government should assume the role of a Supervisory Board (*Dewan Pengawas*), composed of inter-governmental representatives. This is to ensure that the implementation of cross-sectoral PRO initiatives proceeds in alignment with national objectives. The establishment of an industry-led PRO overseen by this Supervisory Board has also been recommended by the Directorate for Waste Reduction and Circular Economy at the Ministry of Environment.

The Supervisory Board will need to undertake the following:

Ongoing compliance and audits

The Ministry of Environment conducts regular audits, and PROs must submit periodic reports to demonstrate continued compliance with EPR regulations. Since PROs manage EPR fund, it is necessary to ensure transparency and governance standards are monitored by the government and that funds are subject to regular audits. It has been suggested that the Ministry of Finance could develop related tax incentives to encourage packaging redesign and other sustainable practices.

Monitoring

Regular monitoring, such as on an annual basis, needs to be undertaken by the Ministry of Environment to ensure that PROs are on track to meet the targets and goals set by the government, including on waste management, reduction, and recycling. In addition, the Ministry of Environment could collaborate with PRO to encourage integrated data with other ministries.

Evaluation

Medium-term evaluation, for example on a four- or five-yearly cycle, would need to be done to review the outcomes and impact of PROs, including meeting medium-term government targets and ensuring that costs and incentives are still aligned with market prices and competitive against virgin materials.

EPR fees and eco-modulation

The national PRO shall have the flexibility to determine market-based pricing for operational and processing costs, which will be borne by its member producers.

While the regulation may delegate the detailed administrative requirements to the industry-led PRO, it should nonetheless establish a common framework for EPR fee design.[32] This framework is essential to ensure that the fees are sufficient to meet environmental targets while also fostering a level playing field and fair competition among industry stakeholders. In addition, the EPR fee should be different from waste collection fee collected by municipal governments since EPR fee goes towards recycling process conducted by PRO, while municipal fees focus on waste collection and management.[33]

[1] EPR fees cannot fully fund a solid waste management system

> Mobilizing the financing required to build and operate functional waste management and recycling infrastructure is a key challenge. EPR policy design and implementation should help attract public or private sector investment and be directed to help close local infrastructure gaps. Firm and binding targets will offer the certainty needed to attract this investment, especially for difficult-to-recycle materials.

[2] The EPR fee structure and its use should be prioritized based on local infrastructure gaps

> This is to guarantee long-term service revenue for collectors and stable feedstock supply for recyclers, for both lower-value and higher-value packaging materials. Complementary tools such as recycled content mandates should be explored to increase offtake certainty and support a business case for investment.

[3] The use of financial and operational fees and eco-modulation could help in paying for waste management and recycling

> But, there is also a need for government incentives, in the form of tax credits or other business facilitations, to support the development of recycling infrastructure for certain material types to increase its recyclability and market readiness.

Fee setting by registry body

Management of EPR fees should be done by an independent registry to ensure independence and to minimize conflict of interest.

The independent registry will serve as the central data repository for company submissions (e.g., total packaging placed on the market) and would determine the applicable fees per packaging unit and target, possibly based on standardized metrics and verification protocols for design-for-environment (DfE), recyclability, and recycled or renewable content claims. Companies with existing recycling facilities would still be required to register with the Registry Body for data submission and compliance reporting. However, such companies would not be required to pay the PRO's operational fee.

Key considerations in net-cost principle EPR Fee design:[34]

1. Weight-based fee structure

EPR fees calculated on a per-kilogram basis, with different fee per material. This calculation mechanism encourages some reduction in material usage (e.g., lightweighting). A regression analysis conducted by the OECD on packaging waste per capita across multiple countries and years found that a one percent increase in producer fees was associated with a 0.06 percent reduction (approximately 100 grams) in packaging waste per capita.[35]

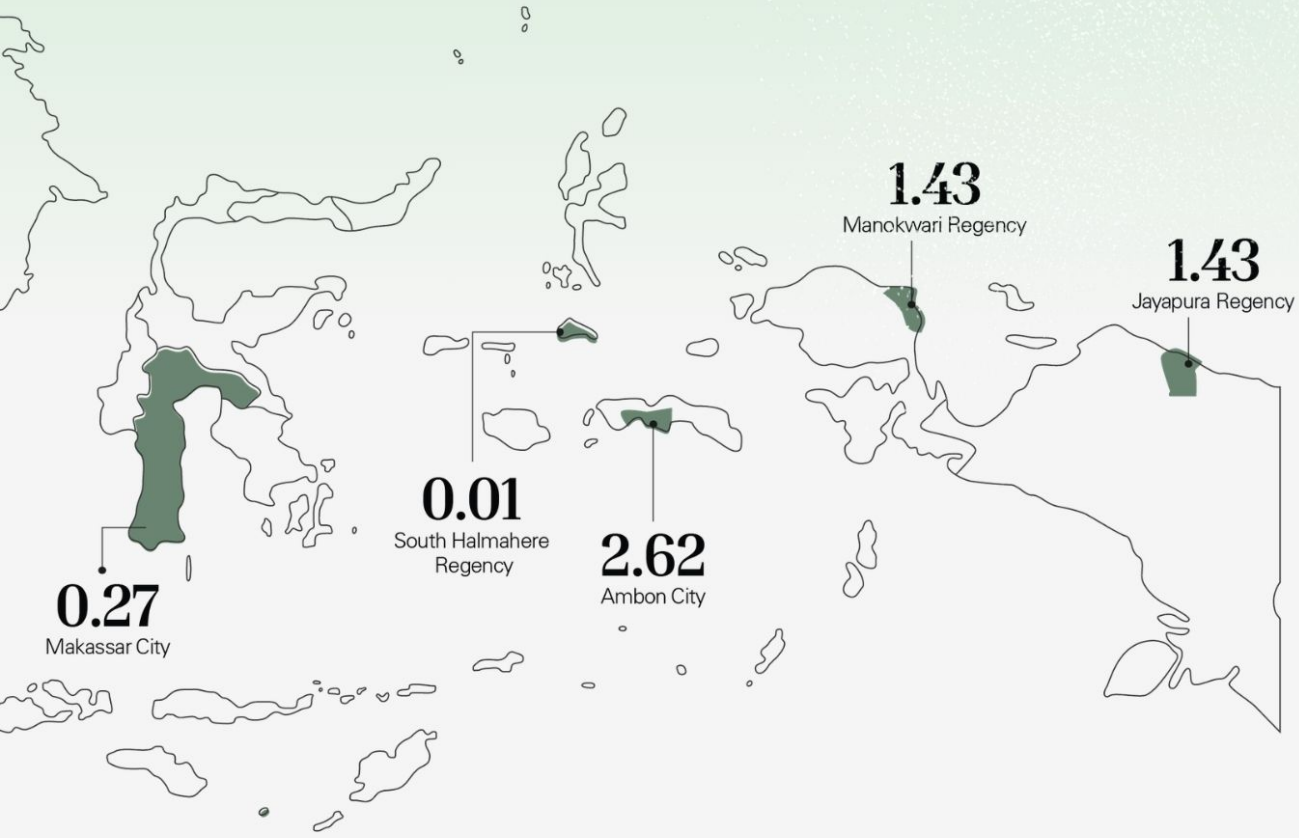
2. Cost of collection and local infrastructure readiness

The cost of establishing and operating collection systems varies significantly depending on the geographic and infrastructure context. **EPR fees could be higher for rural and low density regions with higher cost of collection due to lack of infrastructure and additional costs for waste management** (see Figure 6). EPR fees should reflect these regional differences, reinforcing the importance of having local PROs or local-level implementation frameworks.[36] Alternatively, national fees could be harmonized to reduce complexity and reallocated to rural and remote areas through a redistribution system within the PRO.

Figure 6.

Recycling rate per region in Indonesia

Source: National Waste Management Information System (Sistem Informasi Pengelolaan Sampah Nasional, or SIPSN) – Ministry of Environment, 2024.



3. Material recyclability

The industry-led PRO may establish a list of packaging materials eligible for lower EPR fees based on their recyclability rates.[37] Materials that are widely recycled (paper-based materials and certain plastics) and compatible with local recycling infrastructure would incur lower fees, while less recyclable or hard-to-recycle materials (PVC, mixed plastics, Styrofoam) would be subject to higher fees.

This incentivizes eco-design and material choices that align with circular economy goals. Materials with higher recyclability standards include paper-based materials, while glass can be continuously recycled if properly sorted.

In subsequent phases, additional criteria may be incorporated into the EPR fee structure to further incentivize circular product design.

These include:

EXAMPLE

Recycled Content in Products

Products containing a higher proportion of recycled content could be subject to lower base EPR fees.

This adjustment reflects the environmental benefits of using secondary materials, such as reducing the overall carbon footprint, stimulating demand for recycled inputs, and/or different sustainability approaches such as post-consumer recycled (PCR) content, reuse or refill systems, renewable materials, and compostable materials, depending on product safety, feasibility, and infrastructure readiness. Modulation based on recycled content can help overcome these barriers by making eco-friendly design economically advantageous.[38]

Product Reusability and Durability

EPR fees can also be differentiated based on a product's reusability, reparability, and overall durability, thereby encouraging longer product life cycles and reducing total waste generation.

For instance, in France, electrical and electronic equipment (EEE) are subject to EPR fee adjustments based on criteria such as reparability, ease of disassembly, and availability of spare parts. Products that perform well in these areas may receive a fee reduction (bonus).[39]

To effectively scale Indonesia's Extended Producer Responsibility system and accelerate waste reduction outcomes, the following strategic actions are recommended:

(1) Expand the regulatory scope of MR 75/2019

to include upstream industries and adopt material-specific approach to reduction targets.

(2) Implement modulated EPR fees

to incentivize sustainable packaging design and material choice, with pricing tied to recyclability and net cost principle.

(3) Establish and legally recognized industry-led Producer Responsibility Organizations (PROs)

as institutional backbones to manage collective compliance, financing, and operational efficiency.

(4) Strengthen data reporting, monitoring, and third-party verification

to improve transparency and trust in roadmap progress and outcomes.

Indonesia stands at a critical juncture in its journey toward a sustainable, circular economy.

While the regulatory foundation for Extended Producer Responsibility has been laid, its success will depend on the country's ability to address systemic gaps in capacity, coordination, and compliance.

By expanding the scope of waste reduction roadmap and establishing a robust institutional framework for EPR—anchored by effective Producer Responsibility Organizations and clear, phased targets—Indonesia can build a credible, scalable system to reduce waste. Ensuring the alignment of incentives, infrastructure, and data systems will be key to translating policy into measurable impact. The time to act is now, while momentum and stakeholder interests are high.

The Time To Act Is *Now!*

For a better future where Indonesia can build a credible, scalable system to reduce waste.

Photo:
Joyu Wang/The Wall Street Journal

Taiwan
multi-PRO system

Taiwan has a multi-PRO system, which leverages its Recycling Fund Management Committee (RFMC) under the Environmental Protection Administration (EPA) to be the 'primary PRO' responsible for fee collection and recycling promotion and coordination.

- **Under the Taiwanese system, Manufacturers and importers are required to pay recycling fees to the RFMC to promote recycling.**
- Manufacturers have no responsibility to collect and recycle the items themselves but bear full responsibility of paying fees to the Recycling Fund. RFMC uses these fees as a revenue source to subsidize those participating in collection and recycling activities, including consumers, retailers, and collection sites.
- The fees paid by manufacturers for recycling are determined by a committee composed of academics, consumer groups, manufacturers, and other industry players. Each year, changes to the fees are made.

Source: Institute for Global Environmental Study

Photo:
BaoDao Talk

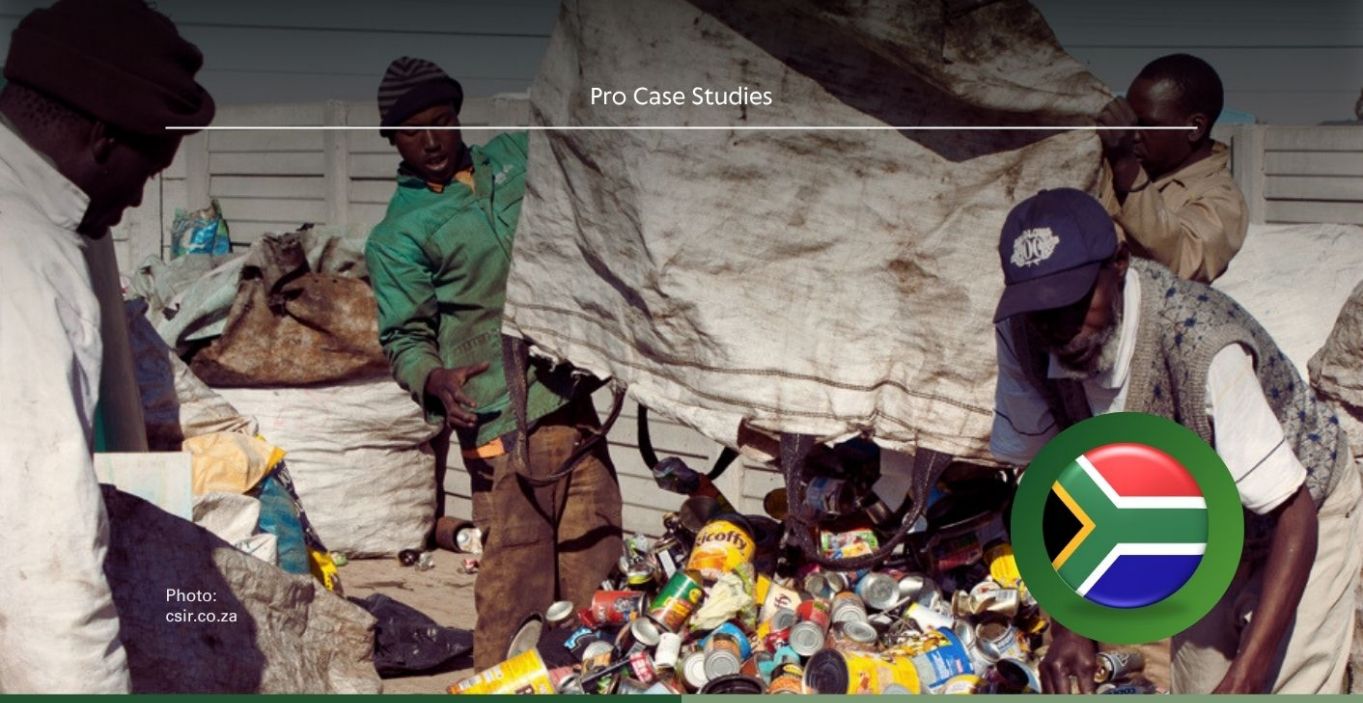


Photo:
csir.co.za

South Africa's industry-led PRO

Several mandatory, industry-led EPR schemes based on different waste streams are in place in South Africa.

- Following mandatory EPR through **the National Environmental Management: Waste Act Section 18 Regulations** in November 2020, voluntary PROs were required to register with the Department of Forestry, Fisheries and the Environment (DFFE). Before then, under the voluntary EPR regime, South Africa had seven PROs: PETCO, Polyco, the Polystyrene Association, Southern African Vinyl Association, The Glass Recycling Company, Fibre Circle and MetPac-SA. The number has since grown.
- Producers must ensure that all identified products are covered by an appropriate EPR Scheme or PRO. Obligated producers can either join an existing PRO or form a new PRO.
- After joining a PRO, the need to regularly report the sales volume weights of the products and pay the appropriate recycling fees to the respective EPR scheme, which then engages in the collection and the recycling of the equivalent waste streams.

Source: EPR Toolbox Prevent Waste Alliance

Photo:
Instagram/conservation international_sa/

Why Germany's shifted from single to multi-PROs

Changes to antitrust regulations motivated one of the most significant transformations in Germany's EPR system, from one based on a single, non-profit PRO to one that incorporates multiple for-profit PROs competing with one another.

- **The first Packaging Ordinance was passed in 1991**, tasking the private industry to set up an EPR system. This system was to be under private-sector management and charged with collecting, sorting and recycling packaging waste throughout Germany.

- Industry representatives set up an association **Duales System Deutschland** as early as 1990. The association eventually became known outside the country as Dual System Germany, or DSD.

- In 2003, **several PROs were cleared by German's Federal States (Bundesländer) to operate alongside DSD** in response to pressure from the national federal cartel office. This led to the total volume of collected packaging amounts under the EPR system being divided among the various PROs, and this system is still in use today.

- Under this system, e**ach PRO enters contracts with certain obliged companies within the EPR system.** Once the waste has been collected, each PRO takes responsibility for an amount of waste corresponding to the amount licensed and paid by the obliged companies for which it is the contracted PRO. The main benefit of this system is that competing multiple PROs led to a reduction in collection and recycling costs and fostered healthy competition.

Source: EPR ToolBox Prevent Waste Alliance

Pricing Case Studies

Colombia's Eco-modulation Experience

Source: EXPRA Extended Producers Responsibility Alliance, Enhesa

Colombia implements eco-modulation in its EPR policy, which is based not only on the volume of packaging material but also recyclability, using a matrix known as ASTRX. The ASTRX matrix was developed by the Sustainable Packaging Coalition. The matrix encompasses several dimensions of recyclability, such as market availability for recycled materials, processing capacity, and consumer engagement in separation practices.

ASTRX matrix encompasses several dimensions of recyclability, such as:

- Market availability for recycled materials
- Processing capacity
- Consumer engagement in separation practices

Meanwhile, ongoing efforts in Colombia aim to expand eco-modulation criteria to include additional variables such as eco-design elements not linked to weight.

South Africa's Upcoming EPR Fees

Source: South African Government, Produkt Kanzlei

The October 2023 Draft Guideline and Toolkit for the Determination of Extended Producer Responsibility Fees by the Ministry of Forestry, Fisheries and the Environment aims to discuss and establish a financially effective EPR scheme. This draft Guideline aims to provide an appropriate method of determining EPR fees through some criteria, including but not limited to, product weight, administrative costs, ease of recyclability, and net cost recovery. Stakeholders have until 4 March 2024 to submit comments on the Draft EPR Guideline.

The Guideline presents four globally accepted methods for determining EPR fees,
considering PROs and producers, stage of sector development, product categories, and specific needs.

- **Flat fee:** reduces the administrative burden on PROs, but does not consider the differences in the actual products or the management costs.
- **Modulated fee:** considers the differences in the cost of waste management and sets the fee depending on ease of recycling, reuse, and repair.
- **Eco-modulated fee:** incentivizes environmentally conscious designs and penalizes harmful materials.
- **Take-back method** consists of deposit-refund and product-return schemes, incentivizing producers to 'take back' products that are not yet at the end of their life cycles and ensure safe disposal.

Fees may be adjusted periodically for recycling and collection cost increases, as well as inflation.

Reference

[1] The Consumer Goods Forum uses this term in its report titled Extended Producer Responsibility (EPR) for Packaging: Design and Implementation in low- and middle-income countries.

[2] Violleta, P. T. (2025, February 25). "KLH Ingatkan Produsen Segera Susun peta jalan pengurangan sampah." Antara News. https://www.antaranews.com/berita/4673449/klh-ingatkan-produsen-segera-susun-peta-jalan-pengurangan-sampah

[3] National Waste Management Information System (Sistem Informasi Pengelolaan Sampah Nasional, or SIPSN) – Ministry of Environment. Waste Management Performance refers to the achievement of waste reduction and household waste handling on 323 districts/municipalities across Indonesia in 2024

[4] EU-ABC, From Waste to Wealth Advancing ASEAN's Circular Economy through EPR Alignment (2025), also uses this term.

[5] Meeting with IPRO, 26 August 2025.

[6] UNCRD State of Plastics Waste in Asia and the Pacific Issues, Challenges, and Circular Economic Opportunities, Annex 2.1 ("Brief Profile of the Plastics Industry in Major Polluting Countries in the Asia and Pacific Region").

[7] World Bank Group. (2021, July 28). Plastic waste discharges from rivers and coastlines in Indonesia. World Bank.

[8] Vietnam Decree No. 08/2022/ND-CP on detailing articles of the Law on Environmental Protection, Article 77, number 1 ("Entities and schedule for performing recycling responsibility").

[9] South Africa Government Gazette GN 1184 of 2020, Section 1 ("Definitions").

[10] Vietnam, Decree No. 08/2022/ND-CP on elaboration of several articles of the Law on Environmental Protection, 10 January 2022, Article 78 ("Mandatory recycling rates and specifications") and South Korea, Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources, Article 18 ("Products and Packing Materials Subject to Mandatory Recycling"), which guides the government in identifying items subject to recycling obligations, based on the volume of products or packaging put on the market, collection and recycling conditions, recycling technology, and the state of recycling markets.

[11] Violleta, P. T. (2025, February 25). KLH Ingatkan Produsen Segera Susun peta jalan pengurangan sampah. Antara News. https://www.antaranews.com/berita/4673449/klh-ingatkan-produsen-segera-susun-peta-jalan-pengurangan-sampah

[12] ENF Recycling, number of recycling facilities per material.

[13] Vietnam, Decree No. 08/2022/ND-CP, Article 78 and South Korea, Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources, Article 18.

[14] Vietnam, Decree No. 08/2022/ND-CP on elaboration of several articles of the Law on Environmental Protection, 10 January 2022, Article 78 ("Mandatory recycling rates and specifications"), sets forth the mandatory recycling rate based on the life cycle, disposal rate and collection rate of the products or packaging, national recycling goals.

[15] Republic of South Africa, National Environmental Management: Waste Act — Extended Producer Responsibility Regulations, GN 1184 of 2020, and Department of Forestry, Fisheries and the Environment (DFFE), Guideline and Toolkit for the Determination of EPR Fees (implementation guidance for Regulation 7), which sets criteria including recyclability.

[16] United Nations Environment Programme (2023). Turning off the Tap. How the world can end plastic pollution and create a circular economy, Plastic Categories (Multilayer plastics defined as an item, usually packaging, made of multiple plastic polymers that cannot be easily and mechanically separated).

[17] Presented during US-ABC event, August 20, 2025 by Director for Waste Reduction Agus Rusly mentioned gradual phasing out for materials.

[18] EU-ABC, From Waste to Wealth Advancing ASEAN's Circular Economy through EPR Alignment (2025), ("Incentivizing Upstream Solution").

[19] Meeting with IPRO, 26 August 2025, (supports the inclusion of RDF to manage end-of-life for problematic plastics).

[20] Singapore, Mandatory Packaging Reporting Regulations under the Resource Sustainability Act, Regulation 8. Companies must submit packaging data, a 3R Plan that outlines reduction, reuse, and recycling initiatives, with KPIs, targets, and annual reporting on progress against targets.

[21] EU-ABC, From Waste to Wealth Advancing ASEAN's Circular Economy through EPR Alignment (2025), list of abbreviations ("Producers Responsibility Organization").

[22] EU-ABC, From Waste to Wealth Advancing ASEAN's Circular Economy through EPR Alignment (2025), Recommendation 1 ("Strengthen National-Level EPR Policies and Waste Management Infrastructure"), which stated not-for-profit EPR schemes.

[23] To ensure a smooth, controlled, and accountable rollout of EPR, it is recommended that Indonesia adopts a single-PRO framework in the initial stage.

[24] Meeting with IPRO, 26 August 2025, PRO Governance (operational and reporting function).

[25] Meeting with IPRO, 26 August 2025, PRO Governance (operational and reporting function).

[26] EU-ABC From Waste to Wealth Advancing ASEAN's Circular Economy through EPR Alignment (2025), Precious Plastics Philippines ("decentralized recycling and digital traceability").

[27] Meeting with IPRO, 26 August 2025, PRO Governance (operational and reporting function).

[28] Japan Containers and Packaging Recycling Association (JCPRA).

[29] Japan Container & Packaging Law (1997) and South Africa Waste Act & EPR Regs (2021), which establishes establishes a shared-responsibility system in which municipalities handle collection, sorting, and storage of packaging waste, while national authorities and the PRO coordinate recycling obligations with industry and local governments.

[30] The Consumer Goods Forum's Coalition of Action on Plastic Waste, Extended Producer Responsibility for Packaging in Indonesia, Section 1.3 ("Optimal EPR can create social and environmental co-benefits"), stimulating the inclusion of informal sector workers.

[31] Japan Container & Packaging Law (1997) and South Africa Waste Act & EPR Regs (2021), which establishes establishes a shared-responsibility system in which municipalities handle collection, sorting, and storage of packaging waste, while national authorities and the PRO coordinate recycling obligations with industry and local governments.

[32] Meeting with IPRO, 26 August 2025, Fee Mechanism.

[33] The Consumer Goods Forum's Coalition of Action on Plastic Waste, Extended Producer Responsibility for Packaging in Indonesia, ("Optimally-designed EPR can complement existing forms of circular waste management funding, such as household retribution fees").

[34] Net cost principle: the fee value is derived from the total cost of collection, sorting, and recycling, minus any revenue generated from the sale of recovered materials. This mechanism is considered essential since materials that are harder to recycle (e.g., MLP) generally have lower market prices.

[35] OECD, Extended Producer Responsibility and Packaging Waste.

[36] OECD Environment Working Papers No. 184, Modulated fees for Extended Producer Responsibility schemes (EPR), Section 2.1. ("Basic EPR fee modulation"). The magnitude of EPR fees differs due to differences in operational costs for waste management between materials, markets, and local collection systems.

[37] The Consumer Goods Forum's Coalition of Action on Plastic Waste, Extended Producer Responsibility for Packaging in Indonesia, Section 2.2.6. ("Key considerations for implementation"). Ecomodulation of EPR fees may account for the recyclability of different packaging materials, and over time to encourage the use of recycled content.

[38] The Consumer Goods Forum's Coalition of Action on Plastic Waste, Extended Producer Responsibility for Packaging in Indonesia, Section 2.2.6. ("Key considerations for implementation"). Ecomodulation of EPR fees may account for the recyclability of different packaging materials, and over time to encourage the use of recycled content.

[39] The Consumer Goods Forum's Coalition of Action on Plastic Waste, Extended Producer Responsibility for Packaging in Indonesia, Footnotes pg. 34. Multi-factor ecomodulation introduces specific incentives ("bonuses") and disincentives ("maluses") in EPR fees to drive packaging design for a circular economy beyond recyclability, for example, the use of recycled content.

SOUTHEAST ASIA RECYCLING COALITION