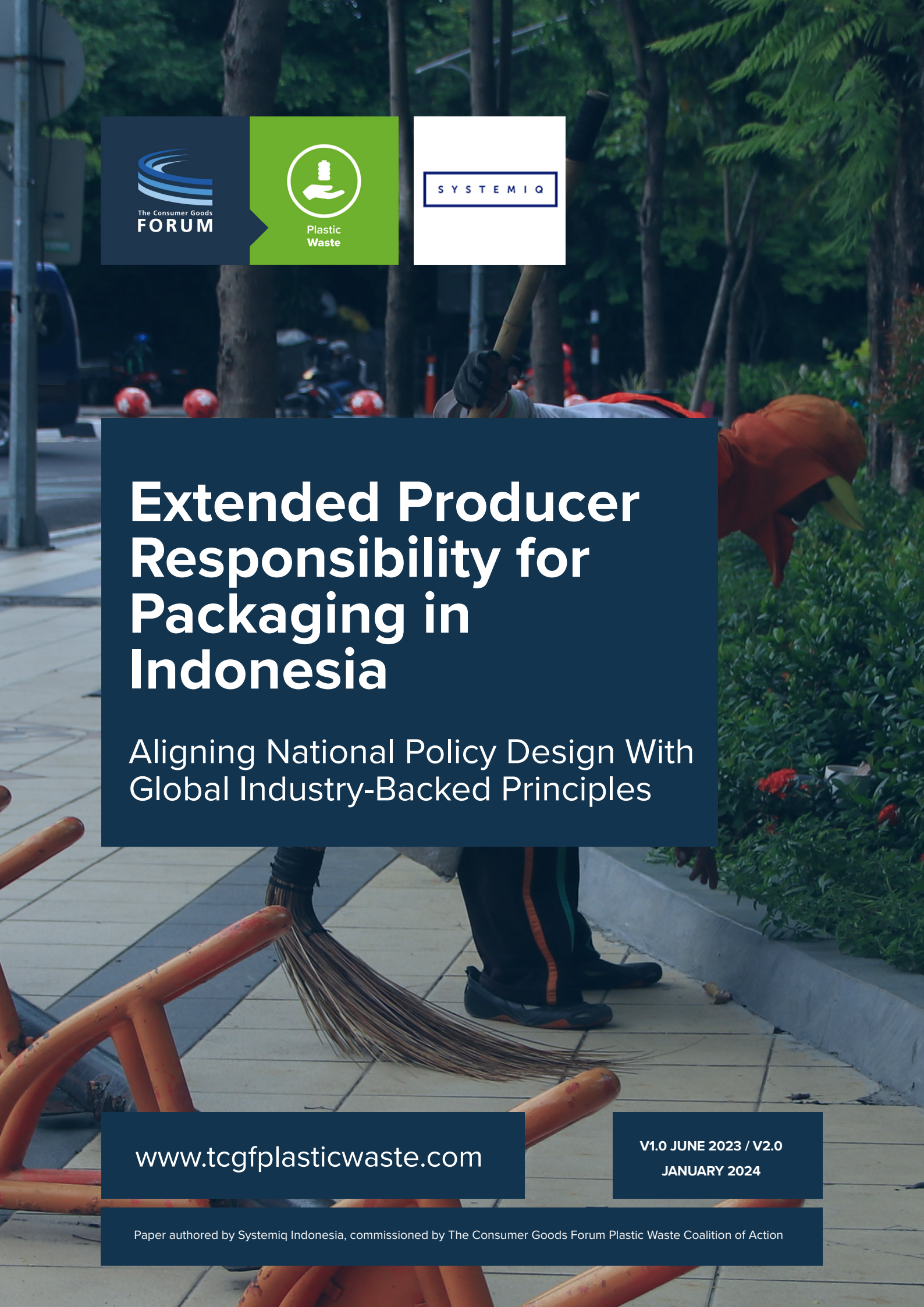

Extended Producer Responsibility for Packaging in Indonesia

Aligning National Policy Design With Global Industry-Backed Principles

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Paper authored by Systemiq Indonesia, commissioned by The Consumer Goods Forum Plastic Waste Coalition of Action

About The Consumer Goods Forum's Coalition of Action on Plastic Waste

The Consumer Goods Forum ("CGF") Coalition of Action on Plastic Waste was founded in 2020 with the aim of developing a more circular approach to the development and processing of plastic packaging in the consumer goods industry. The development of the Coalition builds of the CGF's 2018 endorsement of the Ellen MacArthur Foundation's New Plastics Economy. As a CEO-led group of 42 committed and innovative retailers and manufacturers, the Coalition's vision of accelerating progress towards the New Plastics Economy is embodied by its central aims for members to work towards implementing impactful measures through multi-stakeholder collaborations that will help make circularity the norm in the industry.

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Executive Summary

This paper was commissioned by The Consumer Goods Forum (CGF) Plastic Waste Coalition of Action and prepared by Systemiq Indonesia with inputs and contributions from CGF and PRAISE[1] member companies, Dr Alin Halimatussadiah of the University of Indonesia and other global experts and local stakeholders in Indonesia. It is intended to provide a contribution to the active debate on the potential application of Extended Producer Responsibility (EPR) policies for packaging in the Global South, specifically Indonesia. The paper has not been through a formal endorsement process and, therefore, does not reflect the position of the CGF or the CGF and PRAISE member companies.

EPR is an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's lifecycle. According to this definition, EPR for packaging requires companies that put packaging on the market to contribute funding to the collection, sorting and recycling of packaging after use, with the goal of increasing collection and recycling rates.

In 2020, members of the CGF Plastic Waste Coalition of Action, made up of leading multinational consumer goods and retail companies, co-authored a position paper highlighting the positive role well-designed EPR policies can play in reducing packaging waste and plastic pollution globally. The paper defines seven key principles for Optimal EPR policy design, drawing on decades of experience of the successes and challenges of EPR implementation. The Optimal EPR Principles are:

1. Strong environmental outcomes
2. Efficient, cost-effective, transparent and accountable
3. Shared financial responsibility
4. Convenient for consumers
5. Long-term financial sustainability
6. Allow producers to secure materials for closed-loop recycling
7. Social inclusiveness and fairness

Until now, EPR policies have mostly been enacted in the Global North, particularly Europe, Canada and Japan, with some notable exceptions recently underway in the Global South, for example Vietnam. Successfully applying Optimal EPR policies in the Global South could provide a breakthrough opportunity in the global fight against packaging waste and pollution by providing a sustained and much-needed injection of funds for the expansion and operation of waste and recycling systems. However, the context for the application of EPR in the Global South is quite different from pioneer countries such as Germany and success will require an approach that is tailored to the local realities.

Indonesia is recognised as a leader in the South East Asia region on the issue of packaging waste and plastic pollution. The country has ambitious targets and a voluntary EPR scheme has already been launched by consumer goods companies with support of the Indonesian government.

This paper analyses the opportunities and challenges in implementing mandatory Optimal EPR in Indonesia and makes the following conclusions:

1. **Optimally-designed EPR policy in Indonesia can directly address the root causes of plastic pollution, thereby accelerating progress towards Indonesia's waste management targets.** It also provides several co-benefits of social inclusion, improved health, job creation and reduction of greenhouse gases.

2. **Optimally-designed EPR can complement existing forms of circular waste management funding**, such as household or business fees for waste management (known locally as retribution fees) and government investments. Previously the private sector faced challenges in co-funding waste management systems that are generally operated by government agencies in Indonesia. However, a new public/private governance model known as a BLUD[2], a governance structure recommended by the Ministry of Home Affairs, provides an opportunity for the private sector to complement existing forms of circular waste management funding to increase collection and recycling rates.

3. **Mandatory Optimal EPR policy has greater potential to reduce packaging waste and plastic pollution than plastic excise tax or voluntary plastic credits**. Unlike funds collected from plastic excise tax, EPR fees are ring-fenced for waste management and recycling. And, unlike a voluntary plastic credits financing model, EPR will apply to all companies that put packaging on the market, creating a level playing field for companies and increasing the total contributed funds. That said, if plastic credit systems scale up in Indonesia there would be advantages from greater coordination with EPR systems, as otherwise two parallel, but slightly different systems may emerge which would add complexity.

4. **The design and implementation of an Optimal EPR policy needs to reflect the Indonesian context and must not be an exact replica of models in the Global North.** For example, the implementation of Optimal EPR in Indonesia should:

   a) Use a low-complexity approach where some of the more complex elements are implemented in subsequent phases. For example (multi-factor) ecomodulation[3] can be introduced in future evolutions of the EPR system, once a strong foundation has been set.

   b) Define the "net cost" principle[4] for EPR fee-setting in the Indonesian context, which will require a low-complexity approach that allows for data gaps and high variability in waste system costs.

   c) Provide a central role for industry in the EPR system design and governance and allow producers to use their strategic and operational capabilities to support the effective design and implementation of the EPR system.

   d) Focus on building effective institutions with robust governance structures, including a Producer Responsibility Organisation (PRO) to manage the EPR system, public-private BLUDs to receive funds on behalf of government-operated waste systems at subnational level and a packaging registry to assess the contributions

payable by companies that put packaging on the market.

e) Define effective data collection and monitoring approaches for efficient operations, greater transparency and continuous improvement of the EPR system.

f) Agree waste management objectives and how to allocate funding responsibilities between the private sector, national and sub-national governments. Critical questions to align on at the outset of the system include:

- Whether the waste management system should have the primary aim of expanding post-consumer collection of packaging waste or increasing recycling rates; and
- Whether EPR funds can be used for system-building and infrastructure or should focus solely on subsidising operational expenses.

g) Include informal waste collectors and informal or private sector companies in an EPR-funded waste and recycling system, taking into account the interests of these groups in the EPR system design and ensuring social safeguards are in place.

In the context of the Indonesia G20 chair in November 2022 and ongoing INC negotiations towards a globally binding plastic pollution treaty, this is a unique opportunity for Indonesia to continue its leadership on the issue of plastic pollution. Pioneering an Optimal EPR model suitable for application in the Global South would serve as inspiration for other markets in the region and beyond.

Disclaimer: The paper has not been through a formal endorsement process and, therefore, does not reflect the position of The Consumer Goods Forum or its member companies.

Introduction

Indonesia has set ambitious targets to reduce waste and expand its collection and recycling system. By 2025, the government aims to reduce marine plastic debris by 70%; reduce waste at source by 30%, and increase the waste handling rate to 70%[5]. To support the achievement of these targets, policy makers are considering mechanisms to channel additional funding into waste management systems. **Extended Producer Responsibility** (EPR) is a prominent solution that involves industry co-funding for the collection, sorting and recycling of packaging waste. Indonesia has the opportunity to create a truly Indonesian version of EPR, inspired by international experience where relevant, that could then serve as inspiration for other emerging markets. This complementary funding would be in addition to 'public' forms of funding that form the bedrock of waste management finance in Indonesia, including retribution fees levied on households and small businesses[6,7], and investments from national and local government budgets.[8] This paper is intended to provide a contribution to the active debate on the potential application of EPR policies for packaging in the Global South, specifically Indonesia.

Commissioned by The Consumer Goods Forum (CGF) Plastic Waste Coalition of Action, this paper has been prepared by Systemiq Indonesia with inputs and contributions from CGF and PRAISE[9] member companies, Dr Alin Halimatussadiah of the University of Indonesia and other global experts and local stakeholders in Indonesia. Relevant international policy examples have been drawn from the PREVENT Waste Alliance EPR Toolbox[10], Indonesia National Plastic Action Partnership reports and policy analyses, funded by the governments of Denmark and Norway . The paper has also taken insights from in-country analytic and action programmes such as the Indonesia Packaging Recovery Organisation (IPRO)[12] and Project STOP[13]. The paper has not been through a formal endorsement process and, therefore, does not reflect the position of the CGF or the CGF member companies.

This paper covers two themes related to EPR. Firstly, it lays out the key **benefits of implementing optimal or well-designed EPR in Indonesia and how its design would need to reflect the local Indonesian context.** It looks at how EPR can support the government targets for waste management, recycling and greenhouse gas emission reductions. It uses the Optimal EPR Principles[14] (Box 1 in Section 1), developed and endorsed by 34 CGF member companies, to make that assessment.

The second theme covers two other models that have been suggested for raising funding from the private sector, related to plastic packaging: plastic **excise** tax and plastic credits. The Parliament of Indonesia has previously proposed an excise tax on plastic carrier bags,[15] that despite being recently delayed,[16] could in time expand to all plastic packaging. Voluntary **plastic credit** schemes are also gaining traction in some markets (e.g. in the Philippines) as they allow private funders to directly support collection and recycling through the sale of a credit that represents the collection or recycling of a tonne of plastic packaging. This part of the paper looks at which model is best suited for Indonesia, and whether Indonesia should choose a single model or whether these models can be effective in combination.

1. Benefits and Challenges in Implementing Optimal EPR in Indonesia

Optimal EPR has the potential to bring three types of benefits to Indonesia. Firstly, it can directly **address the root causes** of plastic pollution, thus contributing to achieving Indonesia's waste management targets. Secondly, it can **stimulate entrepreneurship and fair competition**. Finally, it can generate several co-benefits related to building a high-performing waste management system, including **social inclusion,** improved **health, job creation** and reduction of **greenhouse gases.** Optimal EPR could make these contributions without necessitating other forms of funding from the private sector, such as taxation.

This paper follows the definition of EPR given by the Organisation for Economic Cooperation and Development (OECD),[17] which is also used by the CGF in the paper that introduces the Optimal EPR Principles as described in Box 1.[18]

The OECD defines Extended Producer Responsibility as an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's lifecycle, including waste management and recycling. According to this definition, **EPR for packaging requires companies that put packaging on the market to contribute funding to the collection, sorting and recycling of packaging after use,** with the goal of increasing collection and recycling rates.

EPR can be mandatory, where a producer's contribution is a legal requirement, or voluntary where the producer chooses to contribute to the post-consumer processing of its packaging. In this paper, we use the OECD definition of EPR and are referring to **mandatory** EPR, unless otherwise stated.

Alternative definitions of EPR include producers' pre-consumer efforts to reduce the amount of packaging put on the market. Indeed, many Indonesian stakeholders use the term EPR in reference to the responsibilities of industry as defined in the Roadmap on Waste Reduction by Producers, or Regulation 75/2019 by the Minister of the Environment and Forestry[19], which includes both (pre-consumer) reduction and (post-consumer) recycling.[20] In this paper, we limit ourselves to defining EPR as producers' post-consumer responsibilities.

EPR fees are typically paid to a packaging recovery organisation (PRO). Figure 1 illustrates the material flows and the financial support in an EPR system with a PRO that centralises funding from producers to waste management providers.

EPR with a PRO

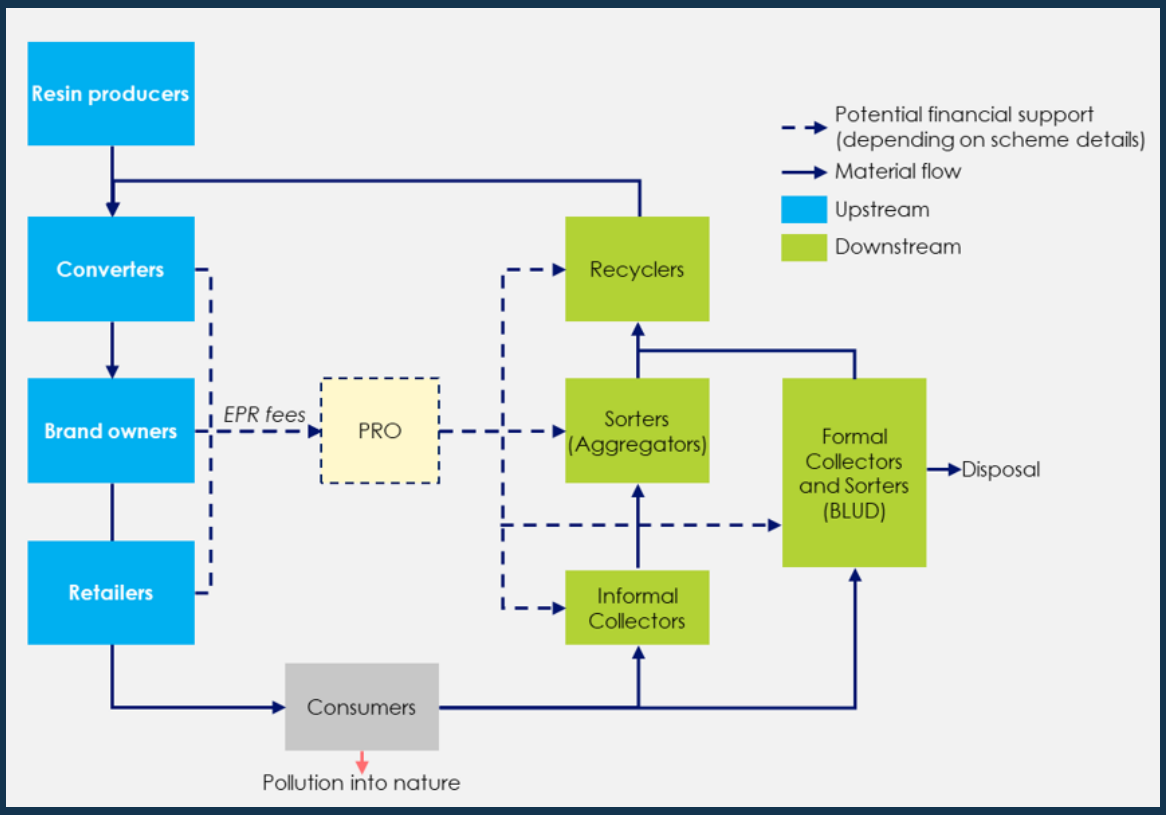

Figure 1: Simplified overview of a waste system with a PRO

Material Flows

- Upstream of the consumer, plastic resin is produced from hydrocarbons by **resin producers**. The resin is formed into packaging by **convertors** and then the packaging is filled with the product by **brand owners** and sold by **retailers** to consumers.
- Once used by consumers, the packaging is either discarded into nature, becoming **pollution**, or collected through the **formal or informal collection systems**.
- Waste collected through collection is either taken to **disposal** (landfill or, though rare in Indonesia, incineration) or to be **sorted** at a material recovery facility (MRF). Waste collected through informal collection, either from households or from dumpsites, is sold onto **aggregators** who may further sort the material.
- Sorted materials from MRFs or aggregators is sold to **recyclers,** who recycle the packaging and sell the recylate back to convertors.

<u>Financial Support</u> (Note: this diagram does not show all financial flows to waste management providers, for example, they may also receive complementary funding from retribution fees and government)

- Financial support, through EPR, is paid by brand owners (and sometimes convertors to retailers) to the **PRO (Packaging Recovery Organisation)**. The PRO then distributes funds to collectors, sorters and recyclers to support their operations and incentivise growth in their activities.
- PROs can interact directly with collectors, sorters and recyclers if these are structured as a **BLUD** or as private entities.

Box 1: Optimal EPR

Optimal EPR is defined as an EPR system in line with the seven Optimal EPR Principles published by the CGF in August 2020 and endorsed by 34 global consumer goods and retail companies. The Optimal EPR Principles are:

1. Strong environmental outcomes
2. Efficient, cost-effective, transparent and accountable
3. Shared financial responsibility
4. Convenient for consumers
5. Long-term financial sustainability
6. Allow producers to secure materials for closed-loop recycling
7. Social inclusiveness and fairness

We use these 7 principles in chapter 2 to discuss what Optimal EPR could look like for Indonesia. In line with these 7 principles, the CGF also defines a number of **key design parameters**. These include among others:

- Collection-for-recycling targets should be measurable, achievable and cost effective
- All major consumer goods packaging materials should be collected and, in time, be covered by EPR
- EPR programmes should be industry-run, commensurate to how financial responsibilities are assigned, through a single, not-for-profit packaging recovery organisation (PRO)
- Activities covered by EPR should be clearly identified and limited to an appropriate share of post-consumer collection and sorting costs for the residential (but not the industrial, commercial and institutional) sector

While Optimal EPR provides guiding principles for successful EPR programmes, there is no one-size-fits-all solution. The design of existing EPR systems varies between countries, recognising different local circumstances, such as the existing waste management system, legal structures and the socio-economic context.

1.1 Optimal EPR can directly address the root causes of plastic pollution

Indonesia's waste system challenges have three interconnected root causes:[21]

1. An inadequate waste governance system
2. Insufficient and unreliable funding
3. A lack of technical capacity

Optimal EPR can address the last two of these root causes directly. Waste management in Indonesia currently costs more than the funds that are available.[22] By raising additional **funding for waste management** from the private sector, EPR can complement existing forms of funding to increase collection and recycling rates. The principles for allocating funding and the required governance structure to do so are discussed further in Section 2.3.2. In addition, when compared to e.g. plastic excise tax, EPR funds have no competing funding pressures beyond waste management. Fees collected through EPR schemes are ring-fenced for funding collection, sorting and recycling activities. This makes EPR both efficient and cost-effective compared to other funding mechanisms.

The additional funding that EPR could provide, 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 will more readily be shared with other stakeholders in the system.

In addition, Optimal EPR systems provide an incentive to **reduce the use of plastics** by placing a fee on each tonne of packaging put on the market. Section 2.1 describes how EPR stimulates reduction, substitution and redesign of packaging.

1.2 Optimal EPR can stimulate entrepreneurship and fair competition

EPR can stimulate the development of an **ecosystem of waste entrepreneurs** in various ways. EPR stimulates reduction of packaging use by producers. This can boost innovation into new business models and provide a tailwind for packaging-free stores and refill/reuse companies. For EPR to work well, it needs well-functioning tracking systems to be in place. This can create opportunities for digital solutions such as collection tracking applications, and data management and verification companies. EPR also stimulates recycling. This can boost innovation to build state-of-the-art recycling plants that can produce food-grade recycled plastics.

In Optimal EPR systems, industry is on a **level playing field**, with all companies required to participate under the same set of rules. This stimulates fair competition.

1.3 Optimal EPR can create social and environmental co-benefits

Expansion of the waste management industry also provides social, health, economic and climate advantages beyond the direct impact described above. Optimal EPR systems can stimulate the **inclusion of informal sector workers** and lead to better working conditions for them through long-term, structurally funded programmes (discussed further in Section 2.7). The development of collection and recycling systems lowers the negative **health effects** associated with waste burning (which is Indonesia's most common waste management practice, at 3.2 million tonnes per year, according to NPAP).[23] By funding the development of these systems, Optimal EPR can contribute to the 150,000 **direct jobs** estimated to be created in a zero-plastic pollution scenario.[24] Finally, reduction in plastic pollution and production tangibly contributes to **reduced greenhouse gas emissions** by up to 20 million tonnes of CO2 equivalent per year, if 16 million tonnes of additional plastic leakage into the waterways and ocean were prevented, according to NPAP.[25]

1.4 Optimal EPR design should reflect the Indonesian context

To realise the benefits of Optimal EPR, its design and implementation in Indonesia must reflect the local circumstances, and solutions must be tailored to fit the Indonesian context, for example:

1. At the outset, the EPR system should **adopt a low-complexity approach where some of the more complex Optimal EPR Principles are introduced in future phases** of the EPR system once a strong foundation has been set. For example, if the choice is made to ecomodulate EPR fees - adjusting fees to encourage eco-design of packaging - basic forms of ecomodulation are preferred to complex multi-factor modulation schemes, especially in early stages of implementation.

2. EPR fee-setting should focus on following the **"net-cost" principle**, where producers' contribution should reflect the net cost of collection, sorting and recycling. However, the net-cost principle will need to be defined for the Indonesian context, allowing for data gaps and high variability in waste system costs (discussed in Section 2.4.2).

3. In line with the global Optimal EPR principles, if industry are given the responsibility to achieve a certain recovery rate and incur the associated costs, then industry should have sufficient oversight over the process. Therefore, EPR policy should **provide a central role for industry in the EPR system design and governance.** This also allows producers to use their strategic and operational capabilities to support the effective design and implementation of the EPR system.

4. Crucial to effective EPR in Indonesia is the establishment of **effective institutions with robust governance structures**. For example, a trusted Producer Responsibility Organisation (PRO) to manage the EPR system (discussed in Section 2.2), public-private BLUDs to receive funds on behalf of government-operated waste systems at subnational

level (discussed in Section 2.3.2) and a packaging registry to assess the contributions payable by companies placing packaging on the market (also discussed in Section 2.3.2).

5. A core part of robust governance is the **use of effective data collection and monitoring**. Locally appropriate uses of digital technologies can provide greater operational efficiency, transparency and the ability to continuously improve the EPR system. EPR contributors want strong, verified environmental outcomes from their EPR investments. Plastic credits (as discussed in Section 4), with some modifications can be used as a tool to track and verify EPR implementation.

6. Existing responsibilities of public and private funding for circular waste management, as discussed in Section 2.3, 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. In particular, 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. And, to achieve this objective, an agreement should be reached on whether EPR funds can be used for system-building and infrastructure or should focus solely on subsidising operational expenses. This agreement should take in account the unique constraints on each material type and activity, such as collection capacity and maturity of the recycling value chain.

7. **Informal waste collectors and informal or private sector companies should be included in an EPR-funded waste and recycling system** (discussed in Section 2.7). Input from informal sector representatives should be considered throughout the development of the EPR system, to make sure that EPR leads to better social and working conditions and to ensure that social safeguards are in place.

Beyond the design and implementation of the EPR system itself, its success depends on setting the right enabling conditions. These include effective waste management legislation and infrastructure, accompanied by complementary policies that drive higher collection and recycling rates. As packaging is one element of municipal waste, the overall cost of developing effective waste management infrastructure should not be borne disproportionately by producers. Complementary policies can help accelerate the expansion of Indonesia's waste management system, such as categorising waste management as a Mandatory Basic Service to prioritise local government funding for waste management. [26]

The following section explores in more detail the fit and significance of each Optimal EPR principle and how they can be implemented in the Indonesian context.

2. Considerations in Implementing the Optimal EPR Principles in Indonesia

The previous section showed that Optimal EPR has the potential to make a meaningful contribution to the reduction, waste management and recycling targets of Indonesia. This potential can be realised if Indonesia develops an EPR system that fits its specific context. This section discusses some of the features that an Indonesian Optimal EPR system could have. For each of the Optimal EPR principles (introduced in Box 1 in the previous section), we discuss their significance in the Indonesian context and some key considerations for their implementation in seeking to achieve the government targets. The aim is to provide constructive recommendations to inform policy makers and industry representatives who are working on the development of a well-designed and effective EPR programme in Indonesia.

2.1 Principle 1: Strong Environmental Outcomes

2.1.1 Fit and significance within the Indonesia context

We saw in Section 1.1 that EPR has the potential to directly address the root causes of plastic pollution and thus reduce ocean leakage, open burning and dumping. By contributing to both upstream (reduce, substitute and redesign) and downstream (e.g. collect and recycle) levers, EPR can contribute to the desired environmental outcomes of lower volumes of plastic pollution in nature and reduced resource use. Figure 1 by NPAP[27] shows the scale of the challenge to eliminate plastic packaging pollution that EPR could contribute to through each of these levers.

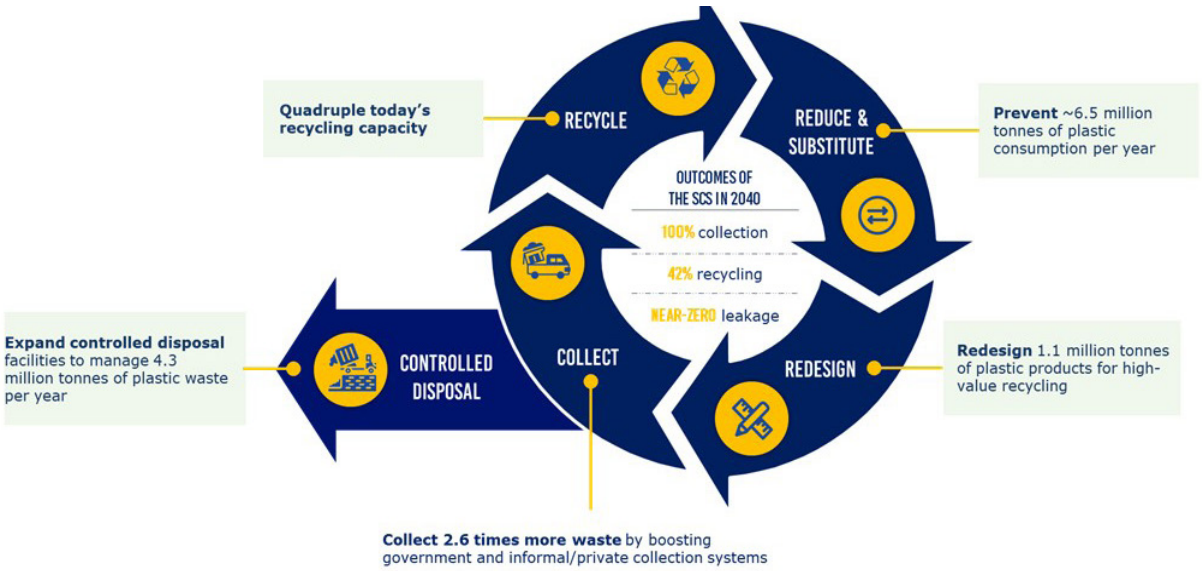

Figure 2: What it takes to eliminate ocean leakage in Indonesia by 2040

2.1.2 Key considerations for implementation

Through collaboration between industry and government, and careful design, Optimal EPR can accelerate each of the five levers:

1. **Reduce & substitute:** By levying a fee on each tonne of packaging put on the market, EPR systems provide a direct incentive to reduce the use of plastics. This makes alternative business models, such as re-use, refill and packaging-free retail more attractive. In addition, EPR fees should be assigned based on material type and cover all consumer packaging materials and substitutes. The EPR fee for each material type should reflect the net cost of collection, sorting and recycling for that material.

2. **Redesign:** Well-designed ecomodulation of EPR fees incentivises packaging design suitable for a circular economy. Ecomodulation is a form of fee-setting that takes into account the environmental impact of packaging. For example, recyclable packaging would have a lower fee than non-recyclable packaging. However, ecomodulation of EPR fees can introduce complexity to the EPR system. Basic forms of ecomodulation are preferred over complex, multi-factor schemes, especially in earlier phases of implementation.

3. **Collect and recycle:** Firstly, EPR fees can contribute to the expansion of the waste collection, sorting and recycling system. An agreement should be reached between government and the private sector on who is responsible for which funding requirements, the overall system objective – whether the aim is to increase collection or recycling rates – and whether EPR fees should contribute to both capital and operational financing of waste management infrastructure. This is discussed in detail in Section 2.3.2.

   Secondly, some plastic packaging, such as multi-layer flexibles, are not currently collected for recycling because the ability to sort, recycle and market the recycled material cost-effectively does not yet exist. The EPR fees paid on such materials should be used to improve sorting and recycling capabilities for these materials over time, such as development of infrastructure, technology and consumer education. While it is inevitable to focus on developing infrastructure for open loop recycling for all plastic packaging initially, over time the balance should shift towards closed loop recycling infrastructure.[28]

4. **Dispose:** In principle, revenues from EPR fees should not be used for continued support of disposal methods, such as landfill or incineration. However, as a transitional measure, it may be acceptable for EPR fees to fund collection systems that dispose materials that cannot yet be recycled.

2.2 Principle 2: Efficient, Cost-effective, Transparent and Accountable

2.2.1 Fit and significance within the Indonesia context

As we saw in Section 1.1, EPR is considered an efficient and cost-effective way of raising funds from the private sector to support waste management. EPR schemes are ring-fenced for the collection, sorting and recycling sectors and have no competing funding pressures beyond waste management.

The efficiency of EPR is enhanced when companies together form a Packaging Recovery Organisation **(PRO)**. Through these PROs, companies assume their responsibilities collectively to fund collection, sorting and recycling operators. PROs are the most common way globally to implement EPR. Vietnam has the best known South-East Asian mandatory EPR system that has a PRO at its centre. PRO systems are also the standard in Europe and in those parts of North America that have EPR systems. In other systems, for example in India, companies fund waste management operators on an individual basis often via intermediaries.[29] In Indonesia, a voluntary PRO (Indonesia Packaging Recovery Organisation (IRPO)) was set up by member companies of the Packaging and Recycling Association for Indonesia Sustainable Environment (PRAISE) in 2020 (see Box 2).[30] This initiative aims to promote and test the implementation of EPR in Indonesia, paving the way for the implementation of mandatory EPR.

Optimal EPR requires **transparent reporting and accountability frameworks** to give the government confidence in progress towards its stated targets and demonstrate to industry the value of their contributions.

2.2.2 Key considerations for implementation

Regulation 75/2019 of the Ministry of the Environment and Forestry is based on the principle that companies are responsible for the waste their products generate. Under this regulation, companies submit individual waste management plans. As discussed above, collectively assuming this responsibility via a **PRO** enhances efficiency and transparency. The Optimal EPR Principles call for a single, professionally managed, not-for-profit PRO that is producer-led and covers the whole country and the entire industry, as long as anti-trust safeguards are in place.

Importantly, the PRO should be allowed to **collect waste from all companies' products.** Constraining companies to collect and process only the waste of the products they themselves have put on the market would be very costly. Such a constraint would have no clear environmental benefits over a system where the obligation is to collect and process waste of the same plastic type.

In order to monitor the effectiveness of the EPR system, a **standardised reporting system**

Box 2: Indonesia Packaging Recovery Organization (IPRO)

IPRO was founded in 2020 by the six member companies of PRAISE, supported by the Coordinating Minister for Maritime Affairs and Investment. IPRO is a voluntary, non-profit, independent and professionally managed PRO, led by its member companies with the aim of promoting and testing the implementation of EPR.

IPRO provides funds for the operation and expansion of collection, sorting and recycling initiatives through three programmes:

- Category A: funding aggregators or recyclers for proof of new recycling and collection
- Category B: co-funding the set-up of new collection and sortation systems and/or the improvement of existing systems
- Category C: financing enabling activities to support responsible expansion of Category A and B, such as policy guidance, awareness campaigns and social inclusion of the informal sector

needs to be set up that aggregates the information collectors, sorters and recyclers send to the PRO that can be shared with government. Several standards have been developed internationally, focusing initially on the plastic credits market, though could be adopted for an Indonesian EPR system. One example is the Verra Plastic Waste Reduction Standard.[31] Similar work has been done by the BV Rio Circular Action Hub.[32]

2.3 Principle 3: Shared Financial Responsibility

2.3.1 Fit and significance within the Indonesia context

Optimal EPR is consistent with the principle that the public and the private sector each have their own responsibilities when it comes to waste management. Formal waste management systems are primarily funded through retribution fees levied on households and small businesses, and though government investments. In contrast, the recycling sector and informal collectors are fully funded through private sources as they are profit generating unlike traditional waste collection. While it appears attractive to split responsibilities according to the current situation, where the public sector funds formal waste management and the private sector funds informal collection and recycling, this runs into a couple of problems.

Firstly, the informal sector is effective in collecting high-value recyclable plastics such as PET, but it is unable to collect low-value plastics at scale. In contrast, the formal sector, run by local government-controlled bodies, collect all waste regardless of its recyclable value. Therefore, companies are unable to meet their obligations under Regulation 75/2019, which requires recovery of all plastic types, without relying on formal collection to some extent.

Secondly, formal collection is a net cost for local government and in many cases, outside of urban areas is not economically sustainable to fund within their public budget. Meanwhile, 68% of mismanaged waste occurs in rural and remote regions of Indonesia.[33] EPR, if used to complement public sources of funding, can significantly reduce the financial burden on local government and, therefore, enable formal collection to better cover rural regions. In France, for example, funding from EPR has reduced the financial burden on municipalities by about 52%, while also achieving a recycling rate of 67% in 2016 and targeting 75% in 2022. EPR is, therefore, a proven, efficient and transparent way **for the private sector to complement public sources of funding for waste collection in Indonesia.**

Financial responsibility must also be shared fairly **among industry players**. This means EPR should be mandatory, legally requiring all companies to contribute to EPR and providing a level playing field where free-riding is deterred. The level of their contribution should be in proportion to their plastic footprint. Currently, a few companies in Indonesia play an outsized role in reducing plastic pollution through individual initiatives. Implementation of mandatory EPR, would lay the responsibility equally across producers who put packaging on the market.

2.3.2 Key considerations for implementation

There is no simple solution to the question on how to ensure complementarity of the EPR programme with retribution fees, public infrastructure investments and other private funding sources. The national government, sub-national governments and private sector representatives must come to an agreement on how to allocate responsibilities for each actor and which funding source funds which expense:[34]

1. The capital investment required to establish and grow collection, sorting and recycling infrastructure
2. The operational budget required to run collection, sorting and recycling services
3. The organisational set up and capacity building required to govern and scale waste management systems

The scope of funding opportunities for each actor should be considered in this decision. For example, unlike public sources of funds, EPR fees can be used for both formal and informal waste collection and sorting, as well as recycling.

In some cases, it is not possible for Indonesian local governments to directly receive private-sector funds and automatically allocate them to waste management. In principle, funding that goes to the regency/city government, will go into the local treasury account first before it is allocated to specific expenses. For this reason, if there is funding assistance for waste management that goes to the regency treasury, it is very likely that the funding will not be spent solely for waste management. However, when waste management operators are structured as local government public service bodies, badan layanan umum daerah **(BLUD)**, they can directly receive funding from PROs, as the Ministry of Home Affairs has highlighted[35,36,37] (see Box 3). The recent emergence of this new public/private governance model has, therefore, provided an opportunity for the private sector to effectively co-fund

formal waste management through EPR.

Finally, the **objective of the waste management system** must be clarified with all actors so that activities from the private and public sector are all working towards the same goal. There is an outstanding question as to whether the primary waste management objective is to expand post-consumer collection of packaging waste or to increase recycling rates.

However what is clear is that agreement on the ultimate objective will avoid conflicting activities by different actors.

Box 3: Badan Layanan Umum Daerah (BLUD)

A BLUD is a local government public service body that can provide waste management services. They are the preferred form of waste governance structure as they can:

1. Provide services for the whole regency/city and allow waste systems to be coordinated centrally at the regency/city level
2. Legally accept multiple revenue sources and independently manage and fully utilise these revenues for waste management, so are financially more sustainable
3. Remain independent, professional, and detached from political change Separate the roles between BLUD as the waste management operator and the environmental agency *(Dinas Lingkungan Hidup, DLH)* as the regulator for better delivery accountability
4. Manage integrated waste management services from collection, sorting and transport to disposal
5. Function as a central waste bank and an off-taker for recycled waste, enabling low value plastics to be sold off in large volumes and bring greater revenue

common way to ensure fairness and a level playing field among companies is to set up a **company registry**, maintained by the PRO or the government, that tracks the packaging volumes of obligated producers. Such a registry could also track contributions made towards waste management through initiatives outside the collective implementation through the PRO. For example, in 2019, Germany introduced the Central Agency Packaging Register to improve monitoring and strengthen transparency. Obligated companies must register with the Central Agency, as well as with a PRO, before they can market consumer-facing packaging materials. They must also file reporting to both the Central Agency and their PRO simultaneously.[38] In Singapore's EPR implementation timeline that runs until 2025, a company registry is one of the first steps. It takes time to set up a company registry, so it is advisable to start the negotiation process soon, without holding up the implementation of other aspects of EPR.

2.4 Principle 4: Convenient for Consumers

2.4.1 Fit and significance within the Indonesia context

EPR fees are typically paid by 'producers' (often brands, converters and/or retailers) directly. This means that consumers are not required to pay a separate fee at the point-of-sale, resulting in no or **minimal consumer inconvenience**.

Consumers play an instrumental role in at-source sorting for effective recycling. In Indonesia, formal collection is almost always mixed and difficult to sort, leading to less supply of clean materials for recycling. EPR schemes, through **requiring effective sorting instructions and funding education campaigns**, can advance consumer understanding of and participation in proper waste disposal and sorting.

2.4.2 Key considerations for implementation

The EPR fee should be set according to the **'net cost principle'**, whereby the fee reflects the net cost of collection, sorting and recycling, which includes the revenue generated by the sale of materials for reprocessing. Meanwhile, it needs to remain low enough for consumer goods to remain affordable.[39] Given the high variability in waste system costs between urban and rural settings in Indonesia as well as, in some cases, cost data gaps, determining EPR fees in the Indonesian context will require a low-complexity approach that allows for these variabilities and unknowns.

Consumer education and awareness can be part of EPR systems in two ways. EPR could fund **consumer education campaigns** around properly disposing, and in the areas that have segregated collection, sorting waste. Such campaigns are proven to improve the quantity and quality of recycled materials, therefore, improving overall environmental outcomes and cost effectiveness of the EPR programme.

2.5 Principle 5: Long-term Financial Sustainability

2.5.1 Fit and significance within the Indonesia context

As we saw in Section 1.1, waste management systems across Indonesia suffer from insufficient and unreliable funding. This is one of the drivers of low collection and recycling rates. EPR can provide s**ufficient and continuous funding for waste management for packaging**, that can be used to aid the establishment and growth of collection and recycling infrastructure as well as build technical capacity through training and education. In addition, waste system governance must be built on a bedrock of transparency and data, a fundamental principle of Optimal EPR (as discussed in Section 2.2).

2.5.2 Key considerations for implementation

Long-term financial sustainability is important on a system level, meaning fee levels should not be punitive for companies so the system can be stable for a long period. And, on a local level, the activities that the EPR scheme funds should be consistent to provide financial stability for these waste management services.

2.6 Principle 6: Allow Producers to Secure Materials for Closed-Loop Recycling

2.6.1 Fit and significance within the Indonesia context

Regulation 75/2019 set an ambitious target for use of 50% recycled content by 2028, for all plastic types including those that are hard to recycle. Current recycling rates fall far short of the volumes that would be required to reach 50% recycled content across all packaging,[40] as illustrated in Figure 3.

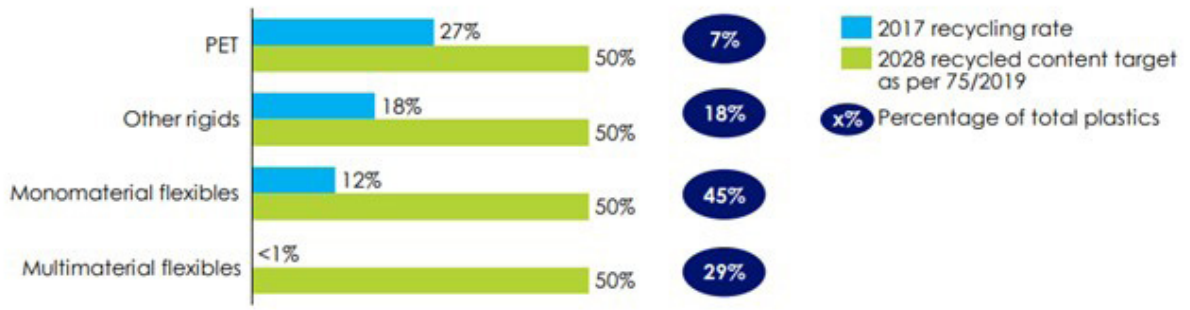

Figure 3: Regulation 75/2019 recycled content targets in relation to 2017 recycling rates for plastic.[41]

Beyond this, not all recycled material is suitable for use in packaging for quality reasons. Closed-loop recycling is required to meet these targets, whereby high-quality waste material is used to produce a similar-value product to that which it was recycled from. Despite much progress, closed-loop recycling remains limited to a few factories in Indonesia, mostly in PET bottles. EPR can provide funding for the development of collection, sorting and recycling systems to increase both the **quantity and quality of recycling feedstock** in order to make progress towards the 50% recycled content target.

2.6.2 Key considerations for implementation

Improving the quality and quantity of recyclate that can be used for closed-loop recycling requires improvements across the value chain, both upstream and downstream.

From an upstream perspective, improving the recyclability of packaging, will increase the availability of recycling feedstock. **Ecomodulation of EPR fees** could be implemented, once the EPR system is well-established, to account for the recyclability of different plastic packaging materials as well as the net cost of recycling. And, over time, ecomodulation can also encourage the use of **recycled content** in packaging by providing an EPR fee discount for a certain level of recycled content. This could boost the demand for recycled content, thereby supporting and de-risking recycling infrastructure investment.

Downstream, EPR can help maximise recyclate value by **supporting collection and sorting systems that reduce contamination as well as increasing recycling capacity**. Consumer education campaigns can improve proper disposal behaviour. Local waste operators should be encouraged to implement straightforward household segregation to improve sorting outcomes. Moreover, EPR fees could be used to build new and improve existing sorting and recycling facilities to provide industry access to high-quality recycled content for packaging. EPR fees should be paid on all plastic packaging, including those that cannot currently be recycled at scale. Fees for hard-to-recycle materials should contribute to the development of infrastructure, technology, and consumer education to enable recycling of those materials.

Contributors to the EPR system should eventually have the possibility to access the material that is collected through this system, for example, through granting a 'right of first refusal' or 'priority access' to the recycled material. This can add complexity, however, and therefore can be addressed once the EPR system has developed a strong foundation.

2.7 Principle 7: Social Inclusiveness and Fairness

2.7.1 Fit and significance within the Indonesia context

In Indonesia, the informal sector contributes ~20% of primary plastic collection volumes, and nearly all recycling volumes. In contrast, almost all formally collected waste goes directly to landfill or official dumpsites rather than recycling facilities.[42] Informal collectors and sorters are often working and living in very poor conditions. It is impossible and undesirable to exclude the informal sector from EPR in Indonesia. This makes for an important difference with EPR in Europe, Japan and North America. EPR financing can be directed to initiatives that take an inclusive approach, integrating informal sector workers and operating with appropriate social safeguards. A PRO can also play a role in providing technical assistance for the development of inclusive approaches and monitoring performance against social criteria, such as improvement of informal waste collectors' rights and working conditions.

2.7.2 Key considerations for implementation

Inclusion of the informal sector should be considered throughout the development of the EPR system. This means asking for **informal sector representatives' input** on the EPR system's design through providing their experiences in public consultation processes.

In setting of the EPR fee, it is important that the PRO can provide **sufficient payment to ensure decent working and living conditions and fair social and labour protections.** Welfare goals and objectives should be set and integrated to government targets, to monitor progress and encourage accountability. To facilitate this, such metrics should be integrated into the tracking and verification system set up by the PRO.

3. EPR and Plastic Excise Tax

EPR and plastic excise tax are two ways of raising funding from the private sector related to their use of plastic packaging. A plastic excise tax requires producers of plastic packaging to pay the national government an amount based on the volume of plastic packaging they put on the market. Whereas, as shown in Figure 1 in Chapter 1, EPR fees are paid to the PRO who then distributes these funds to collectors, sorters and recyclers.

In Section 3.1, we evaluate the pros and cons of EPR and plastic excise tax. We conclude that EPR is more favourable overall, primarily because the funds that EPR raises can **only be used for waste management**, whereas the proceeds from plastic excise go into the national government budget and could be allocated to other expenditures. Coordinating with the existing voluntary PRO, IPRO, to understand key learnings and to transition towards a mandatory scheme would, therefore, be more effective than implementing a new plastic excise from scratch.

That said, in Section 3.2 we look at the hypothetical situation where Indonesia implements both plastic excise and EPR. This scenario is expected to be less cost-effective than an EPR-only scenario, but if considered, the benefits of EPR can be maximised by allowing companies to **deduct their contributions to an EPR scheme from the excise tax** that they are obliged to pay.

3.1 Evaluation: EPR Expected to Be More Effective Overall

This section analyses the effectiveness of EPR and plastic excise in terms of Indonesia's waste reduction and waste management goals. We look at two aspects:

1. Their effectiveness in achieving improvements upstream (reduction and substitution)
2. Their effectiveness in achieving improvements downstream (collection, sorting and recycling)

3.1.1 Reduction and substitution: EPR and Excise expected to be similarly effective

In putting an extra charge on each tonne of packaging used, EPR and plastic excise both incentivise companies to reduce their packaging footprint, a major government goal as we have seen in the Introduction section. In addition, EPR fees can be ecomodulated to fine-tune their impact once the EPR system is well established. For example, difficult-to-recycle packaging materials would receive a higher fee per tonne. In principle, however, plastic excise tax could also be ecomodulated, even if that term is not commonly used for tax instruments. In conclusion, **EPR and plastic excise tax are expected to have similar effects on reduction and substitution.**

3.1.2 Collection, sorting and recycling: EPR more effective than excise

The major difference between EPR and plastic excise is that **EPR fees are ring-fenced for waste management, whereas the proceeds from plastic excise tax could also be used for other public expenditures. This means EPR funds can only be spent on collection, sorting and recycling activities.** In contrast, the funds raised through excise tax would go to the national treasury. The Indonesian parliament has the freedom to allocate these funds to waste management, but they could also allocate them to other uses. Meeting Indonesia's waste reduction and waste management targets requires trillions of rupiah in extra funding for waste management.[43] EPR guarantees that funds are spent on waste management and, therefore, contributes to meeting the waste management targets whereas for plastic excise tax this is uncertain.

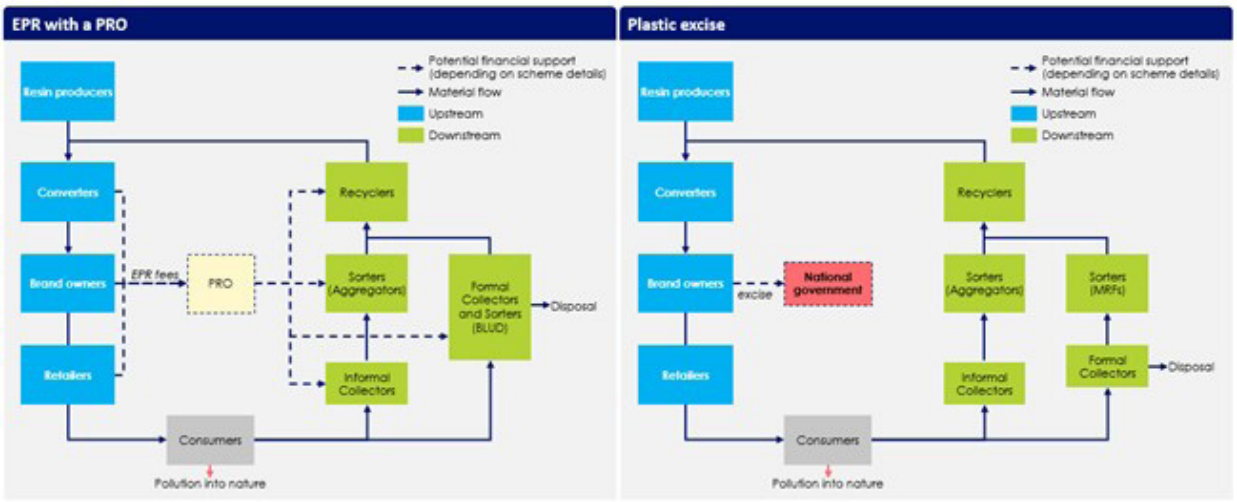

Figure 4: EPR and plastic excise compared (simplified)

3.2 Scenario: If EPR and Excise Are Combined, Allow EPR Fee Deductibility

The previous section argued that EPR is more effective overall in achieving the downstream improvements the government aims to achieve than plastic excise tax. It is nonetheless possible that a plastic excise tax will be introduced in Indonesia. In February 2020, the Parliament of Indonesia asked the government to propose an excise on plastic carrier bags, with the intention of expanding it to all single-use plastic packaging.[44] That said, reports in 2022 suggest that the excise tax will be postponed and so not be implemented in 2022.[45] This section looks at the scenario where Indonesia has both an excise and an EPR system in place and asks how these two concepts can best be combined to allow for maximum synergies.

The most basic situation to start from is if the Government of Indonesia introduces a plastic excise in the current situation, where a voluntary EPR system is in place. This would

penalise the most progressive companies – those that are contributing directly to collection, sorting and recycling initiatives through voluntary EPR – as they would pay twice for the same packaging footprint. Companies that are currently outside the voluntary EPR system are unlikely to join as they are already paying the excise and some who have joined the voluntary EPR scheme, IPRO, may drop out given the additional financial burden.

This could be remedied by allowing companies to either reduce the excise tax they need to pay by the amount they contribute in EPR fees or exempting them from the requirement to pay excise tax at all, eliminating a situation where companies have to pay both the excise and EPR contributions for the same packaging footprint. This approach would require good reporting standards to be in place to reduce the risk of fraud (as discussed in Section 2.2). A system of deductions or exemptions, could in fact encourage companies to join a voluntary EPR system if the alternative plastic excise tax is sufficiently high and the reporting requirements on companies to qualify for a deduction or exemption are not prohibitive. A similar approach has been taken in Vietnam, whereby companies are required to meet minimum recycling targets and can do so either through paying into an EPR scheme, or into a government fund (see Box 4).

Box 4: Mandatory EPR Legislation in Vietnam

In January 2022, the revised Law on Environmental Protection 2020 came into effect with a two-year implementation period, placing the responsibility of collecting and recycling of packaging to meet minimum recycling targets on producers and importers. To comply with the law, which will be enforced from January 2024, producers and importers have two options:

1. Organise recycling activities themselves to meet the minimum recycling rates and specifications (either individually, or through a collective PRO); or
2. Contribute financially to the Vietnam Environmental Protection Fund, which is ring-fenced for the support of collection and recycling in Vietnam (not an excise).

To monitor compliance, producers and importers will have to register recycling plans and report recycling results annually to the Vietnamese Ministry of Natural Resources and Environment.

The Ministry is developing a guiding Decree for the EPR legislation, and PRO Vietnam, originally set up in 2019 by a coalition of 19 Vietnamese and multi-national companies as a voluntary EPR initiative, has been assigned as the leader of the National Packaging Industry Group to input into the draft EPR Decree. This decree will include recommended recycling rates for products and packaging, recycling standard specifications for packaging and proposed industry contribution levels to the Vietnam Environmental Protection Fund.

4. EPR and Plastic Credits

EPR and plastic credits are two very complimentary systems. With some modifications, plastic credits can be used as a tool to track and verify EPR implementation. At this moment, EPR and plastic credits are often treated as separate developments. This comes with the risk that two similar, but incompatible systems emerge in parallel. This should be avoided. In this chapter we explore the similarities and differences between EPR and plastic credits. We end with a number of concrete recommendations to ensure that the best is brought forward from both systems.

Box 5: Overview of Plastics Credits

A Plastic Credit represents one tonne of plastic waste that has been collected or recycled, that otherwise would not have been (i.e. would have leaked into the environment or landfilled). They are a new financial instrument that, through sale to companies and other private actors, can incentivise the removal of plastic from the environment and the recycling of plastic into new products and packaging.

The Plastic Credit mechanism generally has three key aspects:

- Plastic Standard: An accounting standard that lays out the rules and requirements which projects must follow to be certified, including specified quantification methodologies to measure the volume of plastic waste recovered or recycled. Leading standards are Verra Plastic Waste Reduction Standard, BVRio Circular Credits Standard, Plastic Credit Exchange Plastic Pollution Reduction Standard and the Ocean Bound Plastic Certification.
- Independent auditing: Frontline projects are subject to desk and field audits by qualified, independent third parties to ensure standards are met and methodologies are properly applied.
- Registry system: Central database of registered projects (those that meet all standards and methodological requirements) that tracks the generation, retirement, and cancellation of plastic credits.

Plastic credits give companies the right to claim verified actions against their plastic commitments as certified by an independent agency, however no physical plastic waste is transferred to the credit owner[46]. The funding from plastic credits is complementary to public funding for waste management, such as retribution fees.

4.1 Comparison of Optimal EPR and Plastic Credits

	Optimal EPR	Plastic Credits	Observations
Contributors	"Producers" – in practice brands and sometimes converters and retailers active in a specific **domestic** market	**Domestic and international players**. For example: UK retailer Iceland offsets its plastic footprint using plastic credits issued in Southeast Asia[47]	In theory, there is potential overlap for domestic players. In practice, there are **no known examples where EPR and plastic credits systems 'compete' for domestic players**
Reason for participation	To take **'extended responsibility'** for products beyond the point of sale. Optimal EPR assumes a mandatory system, so this would be required by regulation	To **offset the plastic footprint** of the contributor. No jurisdictions mandate participation in plastic credit systems; so far, they are always voluntary.	'Extended responsibility' and offsetting credits are the **same in practice**. The main difference is that plastic credit systems are not mandatory, while Optimal EPR is
Fee/price setting mechanism	Typically **set by a central body** (such as a regulator or the PRO) based on the net-cost principle,[48] after negotiations with and between contributors	In principle, determined through **market mechanisms**. In practice, plastic credit markets often lack liquidity, and the price is set centrally	**Similar in practice**: both are based on a rupiah amount per tonne
Definition of obliged volumes	Based on packaging **volume put on the domestic market**. Mandatory EPR systems often use a company registry to track obliged volumes	**No obligation** to formally register offset volumes; but nothing stops plastic credits systems to agree on setting up a voluntary registry	Given plastic credits have no obligation to register offset volumes, there is **no conflict expected** in practice
Use of funds	To fund "additional" collection and recycling in both formal and informal waste chains. In principle, funds can be used for operational and capital expenditures. A recovered tonne generates a **'claim'** for the contributor	Similarly, EPR whether both operational and capital expenditures can be funded depends on the system's rules. A recovered tonne generates a **'plastic credit'** for the contributor	A **single impact tracking system** can avoid recovered volumes being double counted in both the EPR and the plastic credit system
Type of material covered	**All types of packaging waste** (plastic, cartons/paper, metal, glass)	**Only plastic waste,** by definition	**No conflict** expected in practice, EPR has a more comprehensive scope
Impact tracking	Contributors require proof of additional recovery or recycling. The rules around "what counts" are typically **national**	Similar requirement to EPR. Based on **international** standards such as the Verra Plastic Waste Reduction Standard	The **national rules set for EPR should be aligned with international standards used for plastic credits**

4.2 Conclusion: Great Potential for Synergies, Membership to be Managed Carefully

The main conclusion that emerges from the previous section is that EPR and plastic credits have much in common, in terms of who contributes, why and what for; as well as on tracking impact. This calls for **closely coordinating** the development of both systems, in particular in the way impact is tracked and claims or credits are calculated. The experiences of plastic credit methodologies within an EPR scheme in the Philippines (via the Plastic Credit Exchange (PCX)) are likely to provide important learnings as the first example of such a coordination effort. For example, EPR could take advantage of the tracing and verification standards that have been developed in the plastic credits space to ensure that EPR fees are paying only for volumes collected and recycled that are additional to the baseline and are environmentally and socially sound. Plastic credits could also benefit from the inherently more official nature of EPR to get formal government recognition and approval for the verification system. If this coordination does not take place, a major risk is that two parallel, but slightly different systems emerge which would add complexity, costs and lack of transparency without apparent benefits.

Glossary

BLUD: Badan Layanan Umum Daerah/Local government's public service body

BUMD: Badan Usaha Milik Daerah/Local government-owned enterprise

Capex: Capital expenditures

CGF: The Consumer Goods Forum

DLH: Dinas Lingkungan Hidup/Environmental Agency

EPR: Extended Producer Responsibility

IPRO: Indonesia Packaging Recovery Organisation

MRF: Material recovery facility (a sorting centre)

NPAP: Indonesia National Plastic Action Partnership

OECD: Organisation for Economic Cooperation and Development

Opex: Operational expenditures

PET: Polyethylene terephthalate

PRAISE: Packaging and Recycling Association for Indonesia Sustainable Environment

PRO: Packaging recovery organisation

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Organisations and individuals who have given inputs and contributions to this paper

This does not mean that they are endorsing the findings or recommendations of this paper.

Member companies of The Consumer Goods Forum and PRAISE

Danone
Mondelēz
Nestlé
Procter and Gamble
Reckitt
SC Johnson
The Coca-Cola Company
Tetra Pak
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Footnotes

[1.] Packaging and Recycling Association for Indonesia Sustainable Environment

[2] BLUD stands for *Badan Layanan Umum Daerah*, or 'local public service body'

[3] Ecomodulation is where EPR fees are set based on environmental considerations and policy objectives. Basic ecomodulated fees aim to incentivise packaging recyclability by charging a lower EPR fee for highly recyclable packaging types and a higher EPR fee for packaging types with low recyclability. 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.

[4] The "net cost" principle requires EPR fees to reflect the revenue that is generated by the sale of materials for reprocessing.

[5] Targets from Presidential Regulation 83/2018 regarding Marine Debris Handling & Presidential Regulation 97/2017 (Jakstranas Policy)

[6] Retribution fees are paid bnpy households and businesses to the regional government for the collection and management of waste.

[7] Regulation 7/2021 by the Minister of Home Affairs

[8] Renstra, APBD, *DAK Fisik* and *DAK Non Fisik* from the Ministry of the Environment and Forestry and the Ministry of Public Works and Public Housing

[9] Packaging and Recycling Association for Indonesia Sustainable Environment

[10] https://prevent-waste.net/en/epr-toolbox/, accessed 03/03

[11] Systemiq, APEKSI, APKASI (2021), *Producer Responsibility in Indonesia*; Systemiq (2021), *Building robust governance and securing sufficient funding to achieve Indonesia's waste management targets*

[12] http://indonesiapro.org/, accessed 03/03

[13] https://www.stopoceanplastics.com/en_gb/, accessed 03/03

[15] https://www.reuters.com/article/us-indonesia-economy-tax-idUSKBN20D0DH, accessed 28/02/22

[16] https://nasional.kontan.co.id/news/pemerintah-akan-menunda-penerapan-cukai-plastik-tahun-ini, accessed 13/07/22

[17] OECD (2001), *Extended Producer Responsibility: A Guidance Manual for Governments*

[18] The CGF (2020), *Building a Circular Economy for Packaging*

[19] Minister of the Environment and Forestry (2019), Roadmap on Reducing Plastic Pollution by Producers, Regulation No. 75/2019

[20] Several definitions of EPR by Indonesian stakeholders are discussed in Systemiq, APEKSI & APKASI (2021), *Producer responsibility in Indonesia*, p. 16-17

[21] Systemiq (2021), *Building robust governance and securing sufficient funding to achieve Indonesia's waste management targets*

[22] Ibidem

[23] NPAP (2020), *Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan*

[24] Ibidem

[25] Ibidem

[26] Systemiq (2021), *Building robust governance and securing sufficient funding to achieve Indonesia's waste management targets*

[27] NPAP (2020), Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan

[28] Open loop recycling is defined as recycling that can produce a lower-value product to that which it was recycled from. It is sometimes referred to as down-cycling. Closed loop recycling is defined as recycling that can produce a similar-value product to that which it was recycled from.

[29] Confusingly, these intermediaries are sometimes called "PROs" in India

[31] https://verra.org/project/plastic-program/, accessed 04/03/2022

[32] https://www.circularactionhub.org/, accessed 14/07/2022

[33] Calculated from NPAP (2020), Financing System Change to Radically Reduce Plastic Pollution in Indonesia

[34] Systemiq, APEKSI, APKASI (2021), Producer Responsibility in Indonesia

[35] Mediaindonesia,com (20 December 2021), 'Kemendagri Luncurkan Pedoman BLUD Persampahan' ["Ministry of Home Affairs Launches Waste Management BLUD"], https://mediaindonesia.com/humaniora/459051/kemendagri-luncurkan-pedoman-blud-persampahan, accessed 25/3/2022 & Permendagri 79/2018 – Badan Layanan Umum Daerah

[36] Systemiq (2021), Building robust governance and securing sufficient funding to achieve Indonesia's waste management targets

[37] Local government owned enterprises Badan Usaha Milik Daerah (BUMD) also share these benefits

[38] Prevent Waste Alliance, EPR Toolbox (2020), *Germany - How Germany's EPR system for packaging waste went from a single PRO to multiple PROs with a register*

[39] While seemingly contradictory, these goals have been achieved in, for example, Belgium, where EPR fees are among the highest in the world, but still amount to only 0.18% of the price of a 500 ml bottle of Coca-Cola. This is based on a price of EUR 1.18 for a 500ml PET Coca Cola bottle (sold in a multi-pack online at Carrefour), a weight of 20g per bottle and an EPR fee for transparent, colourless PET bottles of EUR 0.1039 per kg.

[40] Systemiq, APEKSI, APKASI (2021), Producer Responsibility in Indonesia

[41] Ibidem, based on NPAP (2020) data; Note: Not all recycled material is suitable for use in packaging; Percentages may not sum to 100% due to rounding; PET – rigid plastic used primarily in beverage bottles; Other rigids – all rigid plastics excluding PET; Monomaterial flexibles – flexible plastic products or packaging made from a single polymer; Multimaterial flexibles - flexible plastic products or packaging made from multiple different polymer types

[42] NPAP (2020), Radically Reducing Plastic Pollution in Indonesia: A Multistakeholder Action Plan

[43] NPAP (2020), *Financing System Change to Radically Reduce Plastic Pollution in Indonesia*; Systemiq (2021), *Building robust governance and securing sufficient funding to achieve Indonesia's waste management targets*

[44] https://www.reuters.com/article/us-indonesia-economy-tax-idUSKBN20D0DH, accessed 28/2/22

[45] https://nasional.kontan.co.id/news/pemerintah-akan-menunda-penerapan-cukai-plastik-tahun-ini, accessed 14/6/22

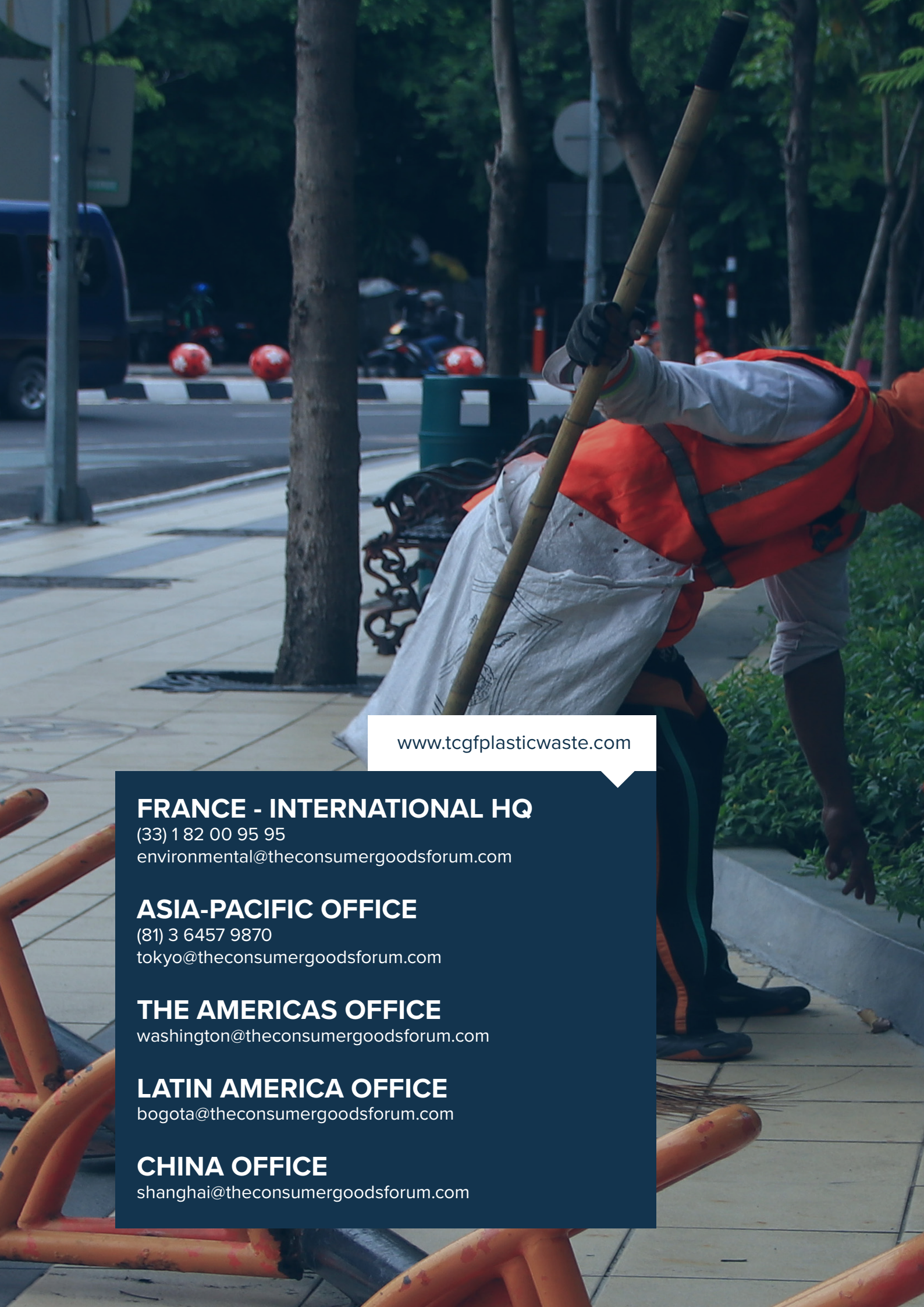
[46] Some companies, rather than purchasing plastic credits to offset the plastic they use, directly purchase the collected or recycled plastic for use as recycled content in their packaging. Though this similarly incentivises the removal of plastic from the environment, it is not equivalent to plastic credits as the ownership of the material is transferred to the purchaser.

[47] https://www.thegrocer.co.uk/iceland/can-iceland-offset-its-way-to-becoming-plastic-neutral/661982.article, accessed 28/4/22

[48] According to the 'net cost principle', EPR fees should reflect the cost of collection, sorting and recycling of materials as well as the revenue generated by the sale of materials for reprocessing. A similar mechanism could be used to set the price of plastic credits initially; The CGF (2022), *Guiding Principles the Ecomodulation of EPR Fees for Packaging*

About the Consumer Goods Forum

The Consumer Goods Forum ("CGF") is a global, parity-based industry network that is driven by its members to encouage the global adoption of practices and standards that serves the consumer goods industry worldwide. It brings together the CEOs and senior management of some 400 retailers, manufacturers, service providers, and other stakeholders across 70 countries, and it reflects the diversity of the industry in geography, size, product category and format. Its member companies have combined sales of EUR 3.5 trillion and directly employ nearly 10 million people, with a further 90 million related jobs estimated along the value chain. It is governed by its Board of Directors, which comprises more than 50 manufacturer and retailer CEOs. For more information, please visit: www.theconsumergoodsforum.com.



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