

Extended Producer Responsibility (EPR) Law Toolkits for the Philippines

Toolkit 2: The EPR System and Business Sector

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Prepared for:



Prepared with:



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Acronyms and Abbreviations

BIR	Bureau of Internal Revenue
BOI	Bureau of Investments
BSMED	Bureau of Small and Medium Enterprises Development
BYO	Bring Your Own
CDA	Cooperative Development Authority
DA	Department of Agriculture
DBP	Development Bank of the Philippines
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG	Department of the Interior and Local Government
DOH	Department of Health
DOST	Department of Science and Technology
DTI	Department of Trade and Industry
EMB	Environmental Management Bureau
EPR	Extended Producer Responsibility
EPS	Expanded Polystyrene
EPS	Expanded Polystyrene
FDA	Food and Drug Administration
FMCGs	Fast-Moving Consumer Goods
GDP	Gross Domestic Product
HDPE	High-Density Polyethylene
IEC	Information Education Communication (campaigns)
IWS	Informal Waste Sector
KII	Key Informant Interview
LDPE	Low-Density Polyethylene
LGU	Local Government Unit
MMDA	Metro Manila Development Authority
MRF	Materials Recovery Facility
MSMEs	Micro, Small, and Medium Enterprises
NEC	National Ecology Center
NGA	National Government Agency
NGO	Non-Government Organization
NSWMC	National Solid Waste Management Commission
OEs	Obligated Enterprises
PAct	Plastic Action
PET	Polyethylene Terephthalate
PIA	Philippine Information Agency
PP	Polypropylene
PRO	Producer Responsibility Organization
PS	Polystyrene
PVC	Polyvinyl Chloride
RA	Republic Act
SUP	Single Use Plastics
SWM	Solid Waste Management
TIN	Tax Identification Number
ULAP	Union of Local Authorities of the Philippines
WACS	Waste Analysis and Characterization Study
WWF	World Wide Fund for Nature

1.0 INTRODUCTION

1.1 State of Global and National Plastic Pollution

Plastic pollution has become a colossal problem worldwide. The current projected growth in plastic pollution is said to cause significant ecological risks, with certain pollution hotspots like the Mediterranean, the East China and Yellow Seas, and the Arctic Ocean ice already exceeding an ecologically dangerous threshold of microplastic concentrations. The negative impacts of plastic pollution are already detectable in most species' groups, while the productivity of several of the world's most important marine ecosystems, like coral reefs and mangroves, are under significant risk.¹

The estimated global plastic use in 2019 was 459.75 million tonnes (Mt). Considering the population and economic growth, and structural and technological change, the projected global plastic use by 2060 is estimated to increase up to 1,230.63Mt, and countries in Africa and Asia are seen to have the largest contribution. More than 30% of global plastics are used for packaging. This is estimated to increase by 2.5 times in 2060.²

Based on the same report, about 76.84% (353.29Mt) of the plastic used in 2019 is estimated to become waste. Among the plastic waste, about 40.18% (141.96Mt) is plastic packaging. Only about 9.26% (32.83Mt) of the 2019 global plastic waste is recycled, while 22.44% (79.29Mt) is estimated to be mismanaged. Considering these amounts, it is estimated that about 22.06Mt of plastics were leaked into the environment in 2019, and it is estimated to double by 44.15Mt in 2060.



Figure 1. Summary of Global Plastic Production, 2019²

In the Philippines, it was found that the number of plastic items consumed by Filipinos was 2.15 million tonnes per annum. Thirty-five percent (35%) of the consumed plastics leak into the open environment, 33% are disposed of in sanitary landfills and open dumpsites, and only 9% are recycled because of our lack of capacity to recycle both high and low-value plastics³ (Figure 1).

¹ Tekman, M. B. , Walther, B. A. , Peter, C. , Gutow, L. and Bergmann, M. (2022): Impacts of plastic pollution in the oceans on marine species, biodiversity and ecosystems, 1–221, WWF Germany, Berlin. Doi: 10.5281/zenodo.5898684

² Organisation for Economic Co-operation and Development (OECD) (2022).

https://www.oecd-ilibrary.org/sites/aa1edf33-en/1/3/2/index.html?itemId=/content/publication/aa1edf33-en&_csp_=ca738cf5d4f327be3b6fec4af9ce5d12&itemIGO=oe&itemContentType=book

³ WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020

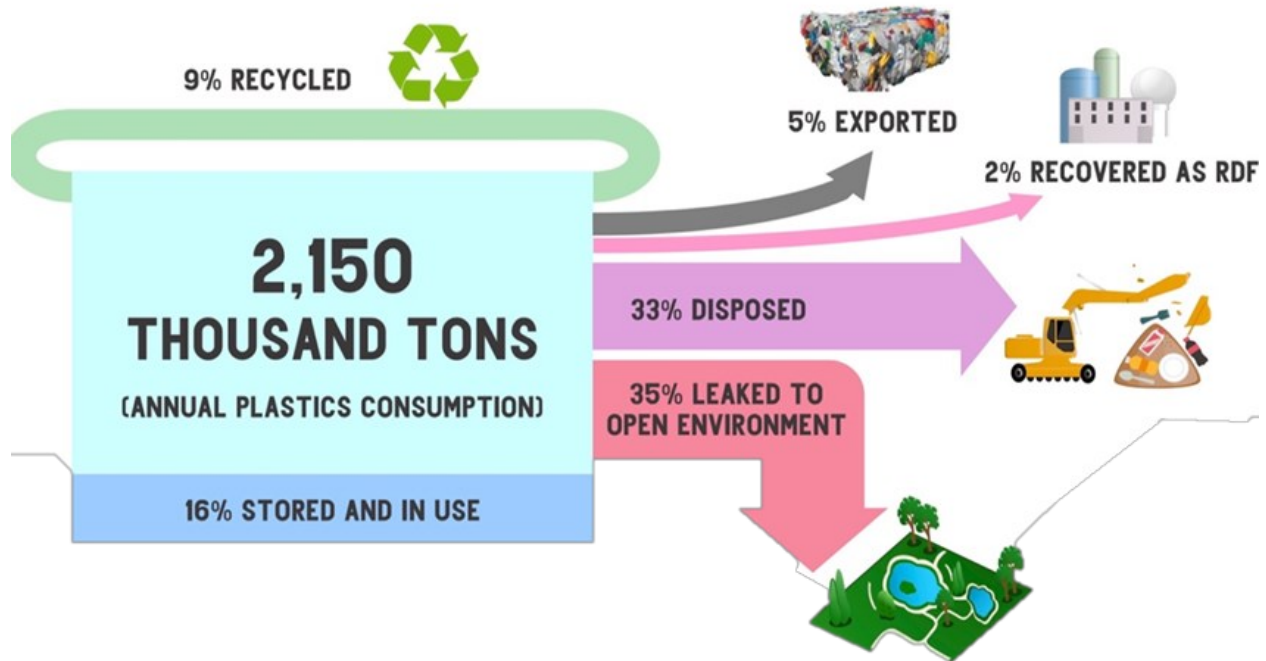


Figure 2. The flow of plastic materials in the Philippines in 2019 (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

Further, for every dollar that producers pay for plastic, governments and society will pay at least 10 times as much remedy its countless negative impacts, with the lifetime cost of ONLY THE plastic produced in 2019 estimated at US\$3.7 trillion (+/-US\$1 trillion), 10 times the Gross Domestic Product (GDP) of the Philippines.⁴

In 2020, the WWF-Philippines commissioned a comprehensive study to understand the plastic materials flows, legal framework, and current solid waste management system as inputs for assessing the applicability of the EPR scheme in the country. The study showed that there was a need to improve the implementation of RA 9003, or the Ecological Solid Waste Management Act of 2000. Challenges faced in its implementation include the following:

1. There are **limited separation and recycling activities at the source** (particularly household level). Recovery is mostly applied to high-value plastics but is still largely informal-led (e.g., waste pickers who go from house to house to collect recyclable wastes), leaving a sizeable volume of high-value recyclable packaging ending up in disposal sites or leaked to the environment.
2. Despite the large volume of high-value recyclable plastics, they often end up not being recycled due to the **limited number of recycling facilities** which are mostly concentrated in the central parts of the country. Coupled with the low recovery rate, some large recyclers and aggregators end up importing plastics to process.
3. There is a **high volume of low-value plastics and non-recyclables** (e.g., flexible films, sachets, composites) which require a lot of time and effort to collect, just to be bought by junkyards at cheap prices per kilo. Recycling sachets also require new equipment for processing. These scenarios make these sachets end up in disposal sites or leaked into the environment.

⁴ https://wwfint.awsassets.panda.org/downloads/wwf_pctsee_report_english.pdf

These factors lead to identifying EPR as a policy tool in aiding the RA 9003 implementation and improving the waste management system. Hence, in 2021, another study was commissioned to further determine how EPR could be contextualized in the Philippine setting, in particular, forming the roadmap (see **Figure 2**) to incorporating/mainstreaming EPR with the existing solid waste management system and facilities in the country.

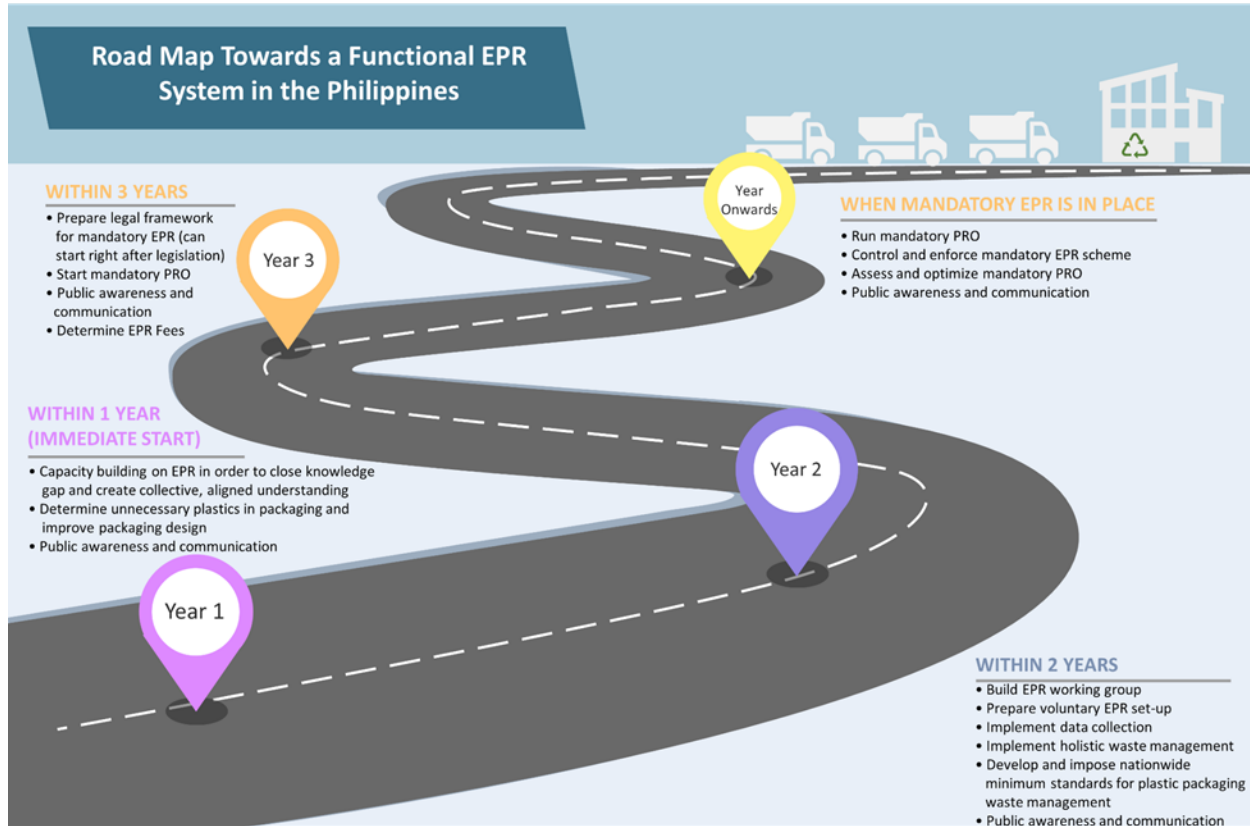


Figure 3. Roadmap Towards a Functional EPR System in the Philippines (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

Results of the study were provided to policymakers and DENR to use as technical guidance for the approval of House Bill No. 10696 and Senate Bill 2425 or the EPR Bill of 2022 into law. Now that the said bill has lapsed into law (i.e., RA 11898 or the Extended Producer Responsibility Act of 2022 or EPR Law), the WWF-Philippines has been active in complementing efforts by the DENR in crafting the IRR including this toolkit.

1.2 What is the Purpose of the Toolkit?

This toolkit aims to communicate the EPR law and its Implementing Rules and Regulations (IRR). WWF conducted a series of dialogues with various stakeholders (i.e., corporations, NGOs, recyclers, Local Government Units, government agencies, and the informal waste sector) to gather inputs on the details that the IRR should provide for them to carry out their roles in the EPR law implementation.

WWF developed four toolkits, each catering to a specific stakeholder—i.e., policymakers, businesses, civil society organizations, and waste management operators. Among the toolkits that were developed, **EPR Toolkit 2 aims to guide the business sector on the EPR Law, how to transition into a circular economy, and how this can be integrated into their operations.**

RA 11898, or the Extended Producer Responsibility (EPR) Act of 2022, amends RA 9003 to incorporate the implementation of EPR programs to ensure that plastic products do not end up in the waste stream.

As the EPR is a policy tool that is relatively new to the country, this toolkit will tackle the following items which are deemed important for the law:

- Salient points of the EPR law;
- EPR implementation framework;
- Roles and responsibilities of the stakeholders;
- The PRO;
- EPR registration and registry;
- EPR programs, compliance, monitoring, reporting, and audit;
- Eco-modulation of fees;
- Target plastics and labeling; and
- Target reduction and recovery rate.

While Toolkit 2 is prepared for the business sector, this document is designed in a way that a wider audience, such as researchers, students, government officials, private sectors, and the general public, among others, can still use it.

1.2.1 Presentation and structure of this toolkit

The EPR Toolkit for the Philippines is designed into four categories targeting different sectors to make the adoption of the EPR scheme faster and easier in the country.

- **Toolkit 1: The EPR Landscape.** Designed for the policymakers to support them in crafting the IRR of RA 11898;
- **Toolkit 2: All About Business.** Designed for the business sector of all sizes to assist them in shifting to a circular economy model of operations;
- **Toolkit 3: Waste Management Sector.** Designed for the Local Government Units (LGUs) facilitating the management of their wastes and the informal and formal waste sectors to ensure that the EPR system is aligned with the current solid waste management system on the ground; and
- **Toolkit 4: Civil Society and General Public.** Designed to increase public awareness and support for EPR.

The structure of Toolkit 2 is presented in **Figure 4**.

Section 1.0: INTRODUCTION

Brief introduction on the state of the plastic pollution
Introduction on the purpose of Toolkit 2

Section 2.0: KEY EPR TERMS

Key concepts of EPR and their definitions

Section 3.0: THE EPR SYSTEM AND BUSINESS SECTOR

Salient points of the EPR Law related to Business Sector
Salient points of the EPR National Framework related to Business Sector

Section 4.0: CALL TO ACTION

Statement for next actions to take

Section 5.0: WORLD WIDE FUND FOR NATURE'S WORK ON PLASTICS

Summary of WWF-Philippines' Plastic Initiative
UNEP's SEA Circular Project

Figure 4. Structure of Toolkit 2

2.0 KEY EPR TERMS

The EPR is an environmental policy approach that emerged in the 1990s and is now increasingly recognized globally as a useful tool for accelerating the transition to sustainable waste management and a circular economy.

This scheme encourages waste reduction through the elimination of unnecessary packaging of products and the development of more environmentally friendly packaging design. EPR works alongside and complements general waste management systems typically run by the government and its citizens.

An EPR scheme is necessary to create a circular economy for packaging material. One of the most critical steps in implementing an EPR scheme is to identify the obliged enterprises (OEs). These industry players (the ones that introduce packaging to the market) will fund the collection and processing of post-consumer packaging. Through an EPR policy, collection and processing can be scaled and effectively implemented throughout the country.

Producers and importers should be responsible for the reduction of the environmental impact of their products. To ease the transition to a mandatory EPR scheme, producers and importers should devise strategies to gradually lessen their consumption of packaging material. Producers can initiate five steps in preparation for the implementation of RA 11898:

- Eliminate unnecessary packaging;
- Improve packaging design (eco-design);
- Improve product labels;
- Eliminate the need for packaging where possible by allowing reuse/refilling; and
- Manage post-consumer packaging.

Before getting into more details on the EPR, it is important to understand various terms and concepts which will be used from time to time.

The EPR Law defines EPR as *an environmental policy approach and practice that requires producers to be environmentally responsible throughout the life cycle of a product, especially its post-consumer or end-of-life stage.*

Table 1 provides the key terms and definitions under the EPR Law.

Table 1. Key Terms and Definition of EPR as provided in RA 11898

Terms	Definition
Circular economy	Refers to an economic model of creating value by extending product lifespan through improved design and servicing and relocating ways from the end of the supply chain to the beginning. This intends to efficiently utilize resources by its continual use and aims to retain the highest utility and value of products, components, and materials at all times, through sharing, leasing, reuse, repair, refurbishment, and recycling in an almost closed loop.
High recyclability	Refers to a condition wherein the value for recovery and reprocessing of a product is high, due to its design, composition, content, and density, among other things.
High retrievability	Refers to a condition wherein after the use of a product, a significant volume of its waste can be recovered, properly recycled, processed, or disposed of, on account of its high value for recovery, recycling, or reprocessing.

Terms	Definition
Importer	Refers to a natural or juridical person engaged in bringing consumer goods into the Philippines, intended to be sold, whether in original packaging or to be repackaged for distribution to the general public.
Large enterprises	Refer to any business entity whose total assets, inclusive of those arising from loans but exclusive of the land on which the particular business entity's office, plant, and equipment are situated, are exceeding that of medium enterprises stated under Republic Act No. 9501, otherwise known as the "Magna Carta for Micro, Small, and Medium Enterprises."
Obligated enterprises	Refer to product producers that are required to implement an EPR program under this Act. They also refer to large enterprises that generate plastic packaging waste. In case an enterprise exceeds that of medium enterprises stated under RA 9501 (PhP100 million in assets), these enterprises shall be deemed OEs.
Plastic	Refers to a synthetic material made from a wide range of organic polymers such as polyethylene terephthalate, high-density polyethylene, low-density polyethylene, polypropylene, polystyrene, PVC, and nylon that can be processed to form solid objects of various shapes.
Plastic neutrality	Refers to a system or its desired outcome where, for every amount of plastic product footprint created, an equivalent amount thereof is recovered or removed from the environment by the product producers through an efficient waste management system.
Plastic packaging	Refers to the polymer material designed to protect a product from environmental factors, or carry goods for transportation, distribution, and sale, including service necessities.
Product footprint	Refers to a measure of the number of goods produced, imported, distributed, or supplied by a product producer, and deemed to cause damage to the environment.
Product producer	<p>Refers to any of the following persons:</p> <ul style="list-style-type: none"> • brand owner who sells or supplies any commodity under a brand, label, or identity using a product it produced, or a material supplied to it by another manufacturer, or supplier; and • product manufacturer or importer that supplies its commodities for the use of the general consumer, or distributes the same as a material product of a brand owner: Provided, That for purposes of Article 2 of Chapter III-A, in case the commodities are manufactured, assembled, or processed by a product manufacturer for another obliged enterprise which affixes its own brand name, the latter shall be deemed as the manufacturer.
Sustainable consumption and production	Refers to the use of services and related products that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials, as well as the emission of wastes and pollutants over the life cycle of the service or product, so as not to jeopardize the needs of future generations

Meanwhile, other concepts related to EPR are shown in **Table 2** summarizing the commonly used terms and their respective definitions for EPR.

Table 2. Other Key EPR Terms, Concepts, and Definitions

Terms and Concept	Definition
Upstream vs Downstream solutions (waste management)	<p>Upstream solutions are also known as the pre-consumer, such as material redesign, plastic reduction, and substitution. Eco-design is done upstream where environmental aspects are incorporated into the product development and design while balancing economic requirements. Eco-design, as an upstream solution, addresses environmental attributes in the early phase of product development, thereby reducing negative impact throughout the plastic products' life cycle.</p> <p>Downstream solutions, such as recycling and disposal, are post-consumer.</p>
Necessary vs Unnecessary plastics	<p>Unnecessary plastics are those that are considered not necessary for product integrity which, once eliminated, will not affect the use of the product. According to the South African Plastics Pact (2021), these are items that can be avoided (or replaced by a reuse model) while maintaining utility. They have limited social utility, for which no alternative is required and which can be phased out without significant behavioral or infrastructural change.</p> <p>Necessary plastics are otherwise considered to require alternatives before being removed, as they may cause significant behavioral or infrastructural change.</p>
Human rights-based approach (HRBA)	<p>This approach focuses on those who are most marginalized, excluded, or discriminated against. In the EPR, it is ensured that the informal waste sector (IWS) and waste diverters are properly included and involved in the implementation process, and guards against gender discrimination, child labor, and other discriminations.</p>
High-value vs low-value plastics	<p>Low-value plastics are those with little to no value for consumers and little to no recycling potential, while high-value plastics give consumers high value and high recycling potential</p>
Eco-modulation	<p>As part of the EPR scheme, one means of encouraging producers to transition into more sustainable and environmentally friendly product development is incentivizing (like reduction of EPR tax/fees) the use of recyclable packaging and penalizing those that do not (an increase of EPR tax or fees).</p>
EPR Fees	<p>EPR Fees shall be collected by the PRO from the OEs. The fees are paid to the PRO in return for carrying out the producers' responsibilities. The rate of fees shall be determined with the PRO and will be eco-modulated (considering the basic fee, bonus, and malus).</p>
Producer Responsibility Organization (PRO)	<p>Same as the Collective of OEs, PRO is also identified as System Operator; voluntarily, this is a collective entity set up by the OEs or through legislation to become responsible for meeting the waste collection and disposal obligations of the individual member OEs. The PRO is the most important stakeholder (organization) in an EPR system and is responsible for setting up, developing, and maintaining the system, as well as for the take-back obligations of the OEs.</p>

South African Plastics Pact. 2021.

https://www.saplásticospact.org.za/wp-content/uploads/2021/07/SAPlasticsPact_Publication_UnnecessaryItems.pdf

Yu, Jieqiong, Peter Hills, and Richard Welford. 2008. "Eco-Design Changes: Perspectives from China" 124 (October 2007): 111–24

PREVENT Waste Alliance. 2020. "Factsheet 04: How Can a Register of Obligated enterprises be Established?" In: "EPR Toolbox."

Sustainable Brands. 2022.

<https://sustainablebrands.com/read/defining-the-next-economy/what-are-plastic-credits-a-4-minute-explainer>

UNFPA (2014). The Human Rights-Based Approach. <https://www.unfpa.org/human-rights-based-approach>

3.0 THE EPR SYSTEM AND BUSINESS SECTOR

The following subsections provide a discussion on the essentials of the EPR related to the business sectors. We start by discussing business sector-relevant salient points of RA 11898 (see **Annex A**), and then further explain how EPR National Framework works by sharing experiences from other countries and/or suggestions based on the multi-stakeholder discussions undertaken for the EPR.

3.1 Salient Points of RA 11898

The following subsections tackle the salient points of RA 11898.

3.1.1 Obligated Enterprises and Micro, Small, Medium Enterprises

Obligated Enterprises (OEs)

Obligated Enterprises, according to the Law (Section 6 - Section 44-B), are product producers that are considered large enterprises generating plastic packaging waste. Provided, however, that micro, small, and medium enterprises defined under Republic Act No. 9501 shall not be covered. Provided, further, that in case the total value of assets of all enterprises carrying the same brand, label, or trademark exceeds that of medium enterprises stated under Republic Act No. 9501, these enterprises shall be deemed obligated enterprises.

Notwithstanding the provisions of the immediately preceding paragraph, micro, small, and medium enterprises are encouraged to practice EPR voluntarily or become part of the network of obligated enterprises or producer responsibility organizations practicing EPR.

The basic approach of EPR is based on obliging enterprises (i.e., manufacturers, importers, and sellers) to assume full responsibility for the products they offer to the public, not just during consumption but also during product conceptualization and the end-of-life phase, or once their products have become waste. The law already defined the parameters that will qualify a certain enterprise as obligated or not.

The WWF suggests the self-assessment guide provided in **Figure 4** to help the business sector in identifying themselves should they be obliged by the EPR Law or not. Once identified as an OE, they are required to develop and implement an EPR Program, as mandated by the EPR Law. The OEs have the option to implement their EPR Programs as individuals, through a collective (or aggrupation of OEs), or through a Producer Responsibility Organization (PRO).

Discussion on the EPR Program is provided in **Section 3.1.5**, while the PRO will be discussed further in **Section 3.1.2**.

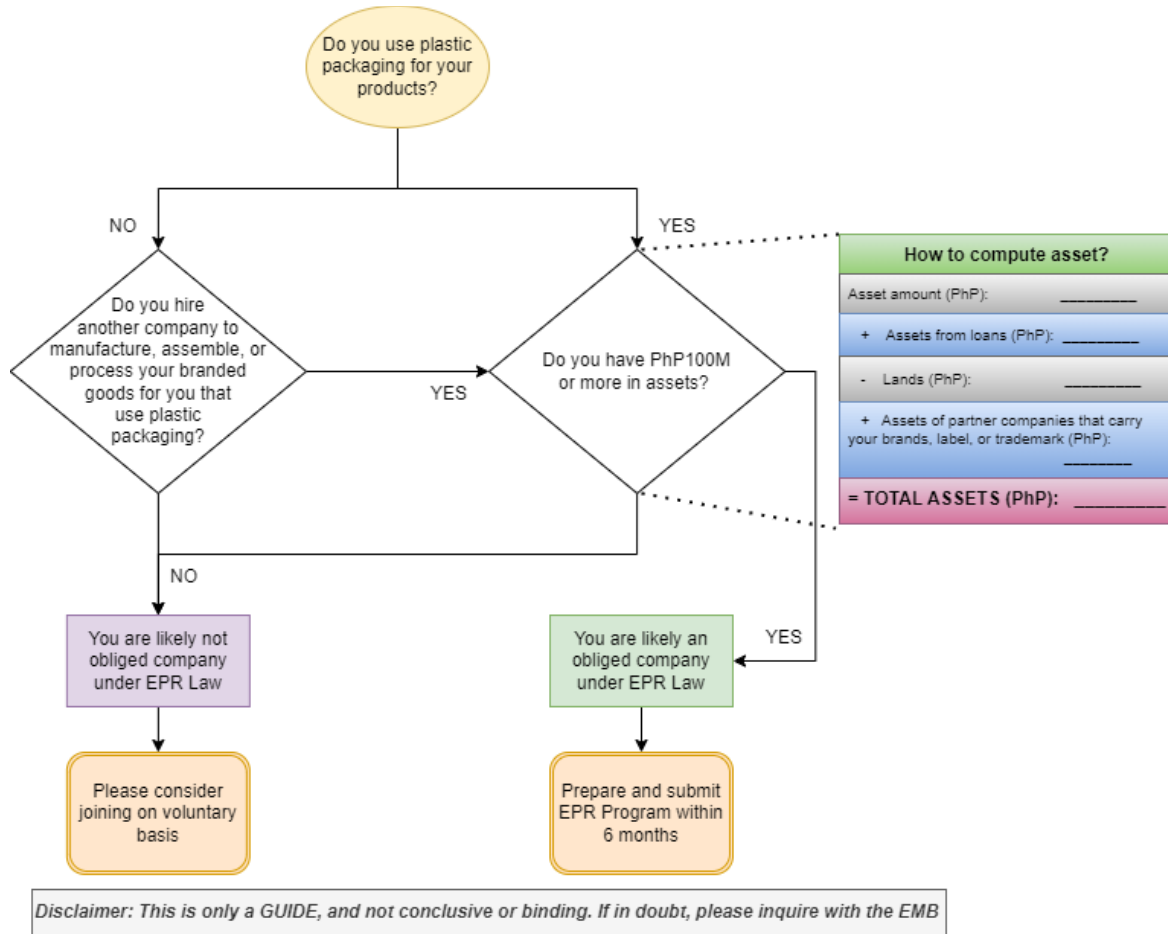


Figure 5. Guide for Self-Assessment if an Enterprise should be Obligated or not

Micro, Small, Medium Enterprises (MSME)⁵

The MSMEs are voluntary EPR participation only, EXCEPT when they carry the same brands, labels, or trademarks, and their cumulative assets are ₱100M and more, in which case they ALL are obligated enterprises. This group accounts for 99.58% of the business establishments in the country⁶ which, if they can participate in the program, can also be a factor in lessening and eventually eliminating the use of plastic packaging that can lead to pollution, according to the DTI- Bureau of Small and Medium Enterprise Development (BSMED).

The BSMED explained that despite being the backbone of the economy, the MSME sector is also most vulnerable to both economic and environmental changes. Its contribution to plastic waste still becomes significant when totaled. Although the law does not require most of the MSMEs to implement the EPR Law, MSMEs are encouraged to take part by practicing EPR voluntarily (unless they have a cumulative asset of ₱100M, as mentioned in the law) or be part of the network of OEs, collective, PRO, or organizations practicing EPR. Since many MSMEs simply don't have the operational budgets for such a shift, the EPR law will need certain protections for MSMEs for them to stay competitive.

According to the Asia-Pacific Economic Cooperation (APEC), the following strategies/actions may be considered to encourage the participation of MSMEs in the EPR law:

⁵ All discussions pertaining to MSME are from the WWF-Philippines (2022), Interview meeting with DTI-BSMED OIC Director Emma C. Asusano on 11 October 2022.
⁶ Philippine Statistics Authority (2021), as mentioned by DTI-BSMED during their interview meeting with WWF on 11 October 2022

- Raising green awareness for enhancing competitiveness among stakeholders;
- Providing training and skills development for MSMEs;
- Promoting compliance with related international standards and the development of an integrated policy framework, at the regional and domestic levels;
- Providing incentives and promoting science, technology, and innovation (STI) and internet and digital economy to expand MSME market reach; and
- Promoting green supply chain development and establishing networks for green, sustainable, and innovative MSMEs.

On the other hand, there are various reasons that may hinder and/or discourage MSMEs to participate. These include the following:

- Lack of awareness among employees about the importance of sustainability;
- Lack of awareness of business owners of the benefits of sustainability practices;
- Not available access to affordable green financial resources and technology;
- Inadequate and insufficient skills and management-developed practices;
- Lack of information on how to implement sustainability; and
- The interference of intended sustainability initiatives with other business initiatives.

To address these challenges, it is important to start with the integration of principles and practices within the MSMEs and understanding the emerging opportunities relevant to the business. The local and national governments, together with international organizations, can also design policies and strategies that will provide MSMEs with a clearer path to voluntarily implementing the EPR Law and other sustainable business practices.

In the future, should the Government decide to mandate all the MSMEs to comply with the EPR Law, the BSMED suggest that to effectively implement and ensure the MSMEs' compliance with the EPR Law, the following shall be considered:

- Implementing written policies and procedures;
- Establishing a Compliance Committee;
- Conducting effective training and education;
- Enforcing standards through guidelines;
- Provision of green financing; and
- Monitoring and evaluation.

BSMED may take part in the conduct of physical and/or virtual awareness seminars. To reach more MSMEs and individuals, this can be done in partnership with other functional groups such as the Consumer Protection Group (CPG), which is in charge of the enforcement of laws to protect consumers, consumer education, and the formation of consumer groups; Industry Development and Trade Policy Group (IDTPG), which is responsible for trade and industry policy formulation and implementation of the Manufacturing Resurgence Program; and the Regional Operations Group (ROG), which is responsible for the field operations of the DTI in the regions and provinces.

The BSMED may also recommend to the Micro, Small, and Medium Enterprise Development Council (MSMEDC) the directing of all the Negosyo Centers to promote and advocate the Extended Producer Responsibility, Circular Economy, and Sustainable Consumption and Production initiatives among MSMEs in the Philippines. The Council is the primary agency responsible for the promotion, growth, and development of MSMEs in the country by facilitating and closely coordinating national efforts to promote the viability and growth of MSMEs.

3.1.2 Producer Responsibility Organization (PRO)

Section 6 - Section 44-H explains that obliged enterprises may voluntarily organize themselves to form or authorize a PRO for the purpose of establishing a viable platform to implement their EPR program.

For this purpose, the DENR, in consultation with the NSWMC and obliged enterprises or their PRO, shall establish a system or parameters necessary to make the PRO sustainable and compliant with the purposes of RA 11898. These shall include standards, rules, or guidelines for the following:

- Organizational structure and leadership;
- Membership requirements;
- Duties and responsibilities, to include:
 - implementation parameters of the EPR program;
 - financing mechanisms;
 - cooperation mechanism with other stakeholders, waste management entities, distributors, retailers, grocery and store owners, junkshop operators, and individuals or entities in the informal sector involved in waste management; and
 - implementation strategies;
- Setting standards toward plastic neutrality;
- Reporting, verification, and auditing of waste footprint generation, recovery, and diversion; and
- Data collection and database maintenance.

As mentioned previously, the implementation of the EPR Programs may be done by the OEs as individuals, through a collective, or through a PRO. The PRO differs from the collective in such a way that the collective is represented by the lead enterprise, while the PRO is represented by the organization itself. Although the creation of a PRO is voluntary, it is still one of the distinct features and is deemed an important element for establishing and operating the EPR system.

The composition of a PRO is not yet clearly defined in the IRR; but ideally, it should comprise all EPR stakeholders and hold the collective waste management responsibility of the member OEs. This responsibility of the OEs (who opted to become a member of the PRO instead) is transferred to the PRO through paying an EPR fee. In doing so, the PRO becomes responsible for the following:

- Registration, in cooperation with DENR, of member OEs;
- Determination and calculation of EPR fees/eco-modulation of fees to be paid by member OEs;
- Collection and administration of the EPR fees while ensuring fair costs and therefore not harming the competitiveness of a participant;
- Tendering and contracting to recycle packaging waste;
- Providing support to LGUs in the operations of MRFs;
- Documentation of collection, sorting, and recycling of packaging waste;
- Informing and educating all consumers about the importance of environmentally sound waste management and waste segregation at source;
- Controlling and verifying all services that have been awarded to service providers, specifically services relating to the fulfilment of collection and recycling by waste management companies;
- Financing all tasks with funds provided by the obligated companies;
- Documentation and verification to the supervisory authorities: The PRO must prove that it has completely fulfilled all its tasks and aims by using the paid fees of the OEs accordingly. This includes liability for failure to implement the EPR scheme according to the provisions of the legal EPR basis;
- Register, monitor, and implement EPR programs with NSWMC;
- Report data to the central platform or registry that will be developed by the NEC;
- Submit annual compliance reports to the EMB (in coordination with the NSWMC and kept by NEC);

- Have the report on plastic product footprint generation, recovery, and EPR program compliance, based on the standards developed by the DENR, audited and submitted to the DENR;
- Being open to third-party audits initiated by the DENR or internally for financial, operational, and legal transparency;
- Provision of reports to the general public especially on the volume of plastics produced by each of the OEs and efforts are done to reduce and prevent waste beyond recycling for transparency and accountability; and
- Conduct reviews with DENR to assess the effectiveness of current EPR provisions and make necessary adjustments considering market conditions.

The PRO can be organized in various ways—it can be non-profit or pro-profit, state-led or industry-led, and single or multiple organizations. **The EPR Law allows for the voluntary organization of the PRO by the OEs, thereby making it a multiple, industry-based PRO.** On the other hand, it was not mentioned in the law if the PRO can be created as for-profit, non-profit, or both. To help business sectors decide on which to create, **Table 3** summarizes the comparison between for-profit and nonprofit PRO.

Table 3. Summary of Comparison on the profit orientation of PRO

Non-profit	For-profit
<ul style="list-style-type: none"> Owned by the obliged producers and by industry representatives. The obliged industry creates a joint non-profit entity that collects the necessary funds. Operate most fairly when there is only one PRO (operational monopoly). The fees collected reflect the costs incurred in implementing and operating the system. They are regularly reviewed based on spending and revenues collected. The PRO has no economic interest of its own, allowing higher levels of transparency. As there is only one PRO, it is easier to identify free riders when OEs pay EPR fees to the PRO. 	<ul style="list-style-type: none"> Competition leads to high price pressure. This means that while PROs can make profits, they can also make losses and, in some cases, become insolvent. Less transparency as a lot of information is not disclosed. Each PRO is responsible for organizing itself. More difficult to make sure that every obliged enterprise pays its EPR fees to the PRO. A separate register is needed. Operate most fairly when they compete with other PROs. Competing PROs have a vested interest in acquiring companies as participants in their systems; whereas, monopolies can survive by increasing prices.

Source: PREVENT Waste Alliance. 2020. "Factsheet 02: How Can a PRO be Established?" In: "EPR Toolbox."

SINGLE PRO AND NON-PROFIT IN JAPAN AND CHILE (AN EXAMPLE)⁷

In 1996, the Japanese PRO "Japan Containers and Packaging Recycling Association" (JCPRA) was founded as a non-profit organization following the enactment of a respective legal basis. As the JCPRA has the operative monopoly, it is the single PRO. Due to Japan's legal framework, the JCPRA falls into the jurisdiction of 5 ministries: (i) the Ministry of the Environment; (ii) the Ministry of the Economy, Trade and Industry; (iii) the Ministry of Finance, (iv) the Ministry of Health, Labour and Welfare; and (v) the Ministry of Agriculture, Forestry and Fisheries. To coordinate between them and all other involved stakeholders, the JCPRA coordinates between the government, municipalities, consumers, obliged companies, recyclers, and manufacturers using recyclates in their products. The participation of the municipalities is voluntary.

In Chile, a mandatory EPR system for packaging is currently in development and will come into effect in 2022. The PRO for household waste was initiated by the Food and Beverage Association AB Chile even before the preliminary draft of the packaging decree passed through public consultation in June 2019. The first activities of this PRO focused on corporate governance, cost estimates, work with the environmental authority, and the start of the operation of a pilot involving various actors in the recycling chain, such as informal recyclers, municipalities, and collection and recovery managers. In September 2019, a pilot recycling plan was formally started in the Providencia commune of the Santiago Metropolitan Region, which aims to carry out a separate waste collection of packaging waste of eventually 90% of all properties in this commune. The experiences and data will serve as the basis to roll out a large-scale implementation, which is a mandatory task from 2022 onwards. Both the future operation costs as well as the current costs for their pilot activities are fully covered by the fees paid by the members to finance the preparation, set up of the system (including the infrastructure), and the final operation.

In general, the PRO shall be formed by various members/groups, such as the OEs (that joined voluntarily), NGOs and social enterprises, waste management organizations/sectors, recycling companies, executive board, and advisory board.

⁷ WWF-Philippines (2020). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines

HOW IS PRO COMPOSITION IN THE NETHERLANDS DONE? (AN EXAMPLE)⁸

In the Netherlands, every obligated company outing more than 50,000kg of packaging on the market must register with the PRO Afvalfonds (and thus become a member). The PRO is governed by a Board of Directors, who are appointed by the producers and importers. All directors represent various industry associations of the supply chain.

To properly coordinate with the municipalities, the public authorities and ministries, and other actors, Afvalfonds established several third organizations, such as Nedvang. Since December 2007, Nedvang, a non-profit organization, is the mediator between manufacturers, importers, and retailers, as well as recovery companies, municipalities, and national authorities. The tasks of Nedvang include monitoring the packaging market and the recovery of packaging waste. Nedvang works for the waste fund and makes contracts with municipalities regarding the reporting of packaging waste, which is collected, sorted, and recycled.

By including stakeholders from various steps of the supply chain in the management of the PRO and officially establishing cooperation with other actors, the PRO takes a holistic approach to managing the system: All stakeholders are allowed to impact the system and create a fair and impactful system. Moreover, the PRO becomes a platform for exchange between various steps of the supply chain and other stakeholders.

EPR Fees and Financing

Collection of fees (herewith called EPR fees) from the OEs is important to ensure that the PRO will be financially and operationally feasible to undertake its responsibilities, should an OE decide to be part of a PRO. Thereby, mechanisms such as but not limited to, carefully formulated pricing mechanisms, meticulous monitoring and documentation of the number of sorted wastes, other safeguards against free riders, and providing additional revenue streams are needed to be formulated by the PRO and managed and overseen by the NSWMC and DTI. This shall be charged yearly depending on the tonnage of plastic products and packaging that each company sets out to the market per fiscal year. Although the PRO's fee-based structure will support downstream solutions (e.g., increased collection, and higher recycling rates), the EPR's objectives also include upstream solutions such as improved product design. Nevertheless, EPR fees need to be clarified together with financing schemes of programs. There should also be specific fees for each type of plastic and financial traceability reports.

Eco-modulation is one of the means in the EPR scheme to encourage producers to transition into more sustainable and environmentally friendly product development. This is done by incentivizing producers by charging fewer EPR fees for environmentally sustainable packaging (e.g. refillable packaging) and at the same time penalizing producers putting high environmental footprint packaging (e.g. flexible packaging) into the market. Eco-modulation of EPR fees should be emphasized, and this should ensure support for improving the solid waste management system through eco-financing.

⁸ WWF-Philippines (2020). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines

CONSIDERATIONS OF FEE CALCULATION BASIS IN THE NETHERLANDS (AN EXAMPLE)⁹

To further incorporate the recyclability of packaging as an incentive into an EPR scheme, many established PROs have modulated their fees. In the Netherlands, such modulation is translated through a “recycling check,” which allows determining the recyclability through specific, comparably simple questions reflecting the existing recycling situation for Dutch packaging waste:

- Is the packaging rigid?
- Is the packaging for medical products, or does it have to go with minor chemical waste?
- Is the packaging free from oxo-degradable material?
- Is the packaging free from PVC or PVDC?
- Is the packaging free from silicone parts?
- Of what material is the largest component of the packaging made?
- What part of the packaging consists of PE, PP, or PET (in % total weight)?
- Does the largest component consist exclusively of mono-material without multilayers, coatings, or fillers?
- Is the packaging larger than 5 cm and the contents less than or equal to five liters?
- Is the largest component of the packaging a color other than black?
- Does the packaging have a label, sticker, or sleeve?
- Which part of the packaging is covered by the label, sticker, or sleeve (in % of front view)?
- Is the packaging with the label, sticker, or sleeve sortable and recyclable according to the table in the Recycle Check?
- Is the packaging free from hot melt and non-washable adhesive?
- Is the packaging free from enclosed metal parts?
- Does the packaging not contain any opaque PET?
- Is the packaging not a PET tray?

Afvalfonds Verpakkingen chooses to reward the use of packaging that has good recyclability and not to sanction the use of other packaging. All plastic packaging that does not have good recyclability within the current systems of collection, sorting, and recycling, existing in the Netherlands nor generating a positive market value, are not qualified for the lower fee as yet.

The most important element to these questions as the basis for modulated fees is that they are reflecting the existing recycling possibilities in the respective country, i.e. certain elements, which might be recyclable in general, but are not recyclable in this specific country, are regarded as non-recyclable. Such tailored questions are a simple yet effective means to develop a tailored guide for modulated fees based on the actual circumstances present in the country.

The criteria to determine eco-modulation as well as specific values for the basic fees, bonuses, and maluses can be set by the advisory board of the PRO and approved/monitored by DENR with the assistance of DTI (see **Table 4**). The EPR fees are ideally published and accessible to the public. These also need to be reviewed regularly, perhaps every five years. The level of sophistication and complexity of setting EPR fees may be determined through a more detailed study of its application in the Philippine setting.

⁹ WWF-Philippines (2020). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines

Table 4. Factors in Computing EPR Fees

EPR Fee Component	Description
Basic Fee	These are solely based on weight and type of packaging material. Materials with higher recyclability shall be given lower basic fees than those with low recycling potential. For packaging that has various components, such as PET bottles that have PP caps and PVC labels, each component shall be assessed individually and shall be charged their corresponding basic fees.
Bonus	These are reductions in fees or discounts applied for packaging that has more recycled content and less virgin material in its formulation, uses less material overall, has designs that further increase its viability for recycling, or has proof of compostability.
Malus	These are penalties applied for packaging that has properties that reduce its viability for recyclability, such as being multilayered or containing additives such as colorants in the case of PET bottles.
EPR Fee Component	Description
Eco-modulated Total Fee	<p>This corresponds to the total fee that is paid per material once all applicable bonuses and maluses are applied to the basic fee.</p> <p>Total Fee = Basic Fee × (100% - Bonus) × (100% + Malus)</p>

Eco-modulation of fees varies from country to country due to the prevailing waste management systems, targets, and goals of the proposed EPR scheme. A sample of EPR fees on different packaging types from Citeo (France) is provided in **Figure 6**.













Material	PET and HDPE from bottles	Other recyclables	Other non-recyclables	Glass	Beverage cartons	PET bottle
Price per kilogram	30.92 € ct. (~ 17 PHP)	30.92 € ct. (~ 17 PHP)	48.57 € ct. (~ 27 PHP)	01.35 € ct. (~ 0.74 PHP)	24.98 € ct. (~ 14 PHP)	28.88 € ct. (~ 16 PHP)
Description	0.5 l PET bottle	0.5 l, LDPE stand-up pouches	0.5 l, multilayer PET/PE stand-up pouches	0.5 l, glass bottle	0.5 l, beverage carton	0.5 l; PET bottle
Packaging weight	26.63 g	11.59 g	11.50 g	380.05 g	16.06 g	17.00 g
EPR fee paid (price per packaging)	0.82 € ct. (~ 0.45 PHP)	0.36 € ct. (~ 0.20 PHP)	0.56 € ct. (~ 0.31 PHP)	0.51 € ct. (~ 0.28 PHP)	0.40 € ct. (~ 0.23 PHP)	0.49 € ct. (~ 0.27 PHP)
Picture of examined packaging						
Picture of similar products from the Philippines						

Figure 6. Sample EPR Fees for Different Packaging

To calculate the fees, the registry for OEs to record packaging amounts and materials put on the Philippine market has to be implemented. Information on the cost of the waste management process should also be identified. To help the companies undertake this, a standard reporting procedure and template have to be prepared for the OEs in order that the data to be generated to be similar.

All producers and importers shall be required to provide the following data for the registry:

- The company's Taxpayer Identification Number (TIN);
- The company's name and address;
- The contact details of the company's staff members; and
- The brands or categories of the products the company introduces to the market (e.g., food, beverage, clothing, electronics).

The register shall contain confidential data belonging to competing companies in several industries. Hence, this must be protected accordingly. However, the OEs, collective, and PRO must also ensure data transparency and thus manage the information that may be disclosed publicly.

3.1.3 Target Plastic Recovery Rate

In addressing plastic packaging wastes and pollution, it is vital that we level off with the understanding of the types of plastics, whether they are recyclable or not, how they affect the environment, what makes them pollutive, and which among them is the target for management.

A detailed discussion on the Categories of Plastics and Target Plastic Packaging are provided in **Annex B**.

The EPR Law has provided a target recovery rate and compliance period for the reduction of plastic product footprint (Section 6 – Section 44-F). This gives the obliged enterprises and PROs a sufficient period to adjust to their EPR duties and responsibilities and improve their performance over time. Obligated enterprises shall likewise establish phase-in recovery programs that will achieve plastic neutrality. The programs may include the activities stated in the National Framework for the EPR.

For this purpose, obliged enterprises that generate either rigid or flexible plastic packaging shall recover or offset their respective plastic packaging footprint.

The following targets for the recovery of plastic product footprint generated during the immediately preceding year are hereby set:

- 20% by 31 December 2023;
- 40% by 31 December 2024;
- 50% by 31 December 2025;
- 60% by 31 December 2026;
- 70% by 31 December 2027; and
- 80% by 31 December 2028, and every year thereafter.

For this purpose, obliged enterprises shall submit the report of their compliance including appropriate documentation to DENR.

The law only mentions plastic product footprint “recovery” and does not distinguish the difference between reuse, recycling, and reduction. Waste recovery means the diversion of plastic waste from the downstream waste streams. The reduction of the plastic product footprint is a good plan, but it might be better if there is a mechanism to mandate the reduction or diversion of plastic packaging wastes not only on the downstream portion but also the upstream. In one of our consultations with the business sectors, it was raised that it “is unclear if ‘plastic footprint’ covers plastic sales volume or if it includes all manufactured and imported products. The recovery of plastic product footprint needs to balance upstream measures with downstream measures.” With this, recovery of plastic packaging wastes shall be categorized into three to meet the targets further:

- **Reduction of unrecyclable, unnecessary, and single-use plastic packaging.** As stated previously, the law only mentions ‘recovery’ which seems to cover downstream wastes. On the other hand, a reduction in the use of unrecyclable and unnecessary plastic packaging could be better, as it means the diversion of plastic wastes (categories I to IV) from the upstream portion of the waste stream which may also require the change in the use of these categories of plastics from the supply chain of the OEs.
- **Increase the recyclability of plastic packaging.** The EPR encourages making plastics recyclable more than those that are not. It is in the best interest to advocate for the use of recyclable materials in the supply chain of OEs so that the generation of unrecyclable and unnecessary plastics (usually found in the category I to IV plastics) are permanently reduced or phased out.

- Increase the reuse of recyclable plastic packaging.** The reuse of recyclable plastic packaging materials should be increased in the upstream portion of the waste stream. In this way, the use of virgin plastic materials will be reduced while increasing the reuse of recyclable plastic materials thereby supporting a circular economy.

The target percentage and timeline for meeting these can be adopted from what was already provided in the law (Section 6 – Section 44-F). In other countries such as India, for example, there is a separate target of recovery per category of plastic packaging, and per source (i.e., producer, importer, brand owner). This is summarized in **Table 3**.

Table 5. Target Recovery/Diversion of Plastic Packaging, per Category in India

Plastic Packaging Category	Target Percentage (%) per Year			
	Year 1	Year 2	Year 3	Year 4 onwards
Minimum level of recycling (excluding end of life disposal)				
<i>Producer, Importer, Brand Owner:</i>				
• Category I	50	60	70	80
• Category II	30	40	50	60
• Category III	30	40	50	60
• Category IV	50	60	70	80
Mandatory use of recycled plastic content				
<i>Producer, Importer, Brand Owner:</i>				
• Category I	30	40	50	60
• Category II	10	10	20	20
• Category III	5	5	10	10
Brand owners' minimum obligation to reuse Category I (sold annually)				
A. Rigid plastic packaging with volume or weight equal or more than 0.9 liters or kg but less than 4.9 liters or kg, as the case may be	10	15	20	25
B. Rigid plastic packaging with a volume of weight equal to or more than 4.9 liters or kg	70	75	80	85

Note: Category I (rigid plastic packaging); Category II (flexible plastic packaging of a single layer or multilayer (more than one layer with different types of plastic), plastic sheets or like and covers made of plastic sheet, carry bags, plastic sachet or pouches; Category III (multilayered plastic packaging (at least one layer of plastic and at least one layer of material other than plastic)); Category IV (plastic sheet or like used for packaging as well as carry bags made of compostable plastics)

Source: Government of India (2022). Plastic Waste Management (Amendment) Rules, 2022. <https://egazette.nic.in/WriteReadData/2022/233568.pdf>

Nevertheless, in addressing plastic packaging pollution, OEs should remember that regardless of downstream reduction targets, their EPR Program should still **consider the waste hierarchy**, i.e., reduction, reuse, recycling, and disposal, as last resort.

Eco-design

Eco-design is one of the vital factors in the EPR scheme. Eco-design is essential for businesses so that they can pay lower EPR fees (in the case of collective and PRO). The EPR encourages manufacturers to

- conserve raw materials;
- use recyclates (critical to close the loop in a circular economy); and
- design packaging (will determine the reusability and recyclability of post-consumer packaging waste).

Manufacturers can start introducing a minimum portion of recycled material in their products and aim to use less virgin material and more recyclates as much as possible. By making their designs more sustainable, they can also meet the required reduction on the use of virgin materials and increase the rate of recyclable materials. Meanwhile, certain industries such as fast-moving consumer goods (FMCGs) can eventually eliminate the need for packaging certain products entirely by establishing refilling stations or other alternative delivery systems.

The EPR scheme highly encourages OEs and volunteer enterprises to develop upstream solutions to reduce or even eliminate the use of plastics in their products. Doing so also gives them another means of minimizing EPR fees (or eco-modulation of fees) that are charged to them (through the collective or PRO). OEs may investigate eventually replacing low-value plastic packaging with high-value plastic packaging, which has potentially lower EPR fees than the former.

Plastic alternatives

There are various plastic alternatives that OEs may consider in eco-designing their products and making them sustainable. However, precaution should be considered in selecting alternatives as some are more harmful than environmentally friendly.

Below are some of the plastic alternatives that are available in the market and some precautions in selecting them:

- **Biodegradable plastics** are still materials that should not end up in nature. Even coupled with proper infrastructure, biodegradable plastics are just as harmful if they enter natural ecosystems.
- **Bio-based plastics** are only potential solutions if sourced and managed properly. However, without such systems or infrastructure, they face the same end-of-life challenges as regular fossil-fuel-based plastics.
- **Compostable plastic** may be appropriate for specific uses, but it will only be advantageous if collection and processing are sufficient to recover the material.
- **Oxo-degradable plastics** should be prohibited. They result in worse environmental outcomes and contribute to microplastic pollution when they degrade.
- **Single-use packaging** can never be sustainable due to its frequent use and disposable nature. We highly encourage businesses to prioritize reusable packaging where possible and only use single-use packaging where necessary.

To further guide businesses in selecting alternative plastics, WWF developed an **Alternative Materials Decision tool** (<https://plastic-action.asia/alternative-materials-tool/>). The tool guides businesses to choose the material with the lowest possible footprint for single-use packaging.

This Alternative Materials Decision Tool ranks the top 10 materials with the least environmental impact. This tool uses context-specific waste management statistics and information particular to Malaysia, the Philippines, Singapore, and Thailand, as well as life cycle environmental data from Ecoinvent and other scientific literature to assess over two dozen materials commonly used for packaging. These materials are assessed based on product type (e.g. rigid/flexible, food/non-food), size, and function. The

environmental impacts calculated cover raw material extraction, manufacturing, and waste treatment in the country where the packaging will be used.

Expanded polystyrene (commercially known as styrofoam) comes out lowest in most of the scenarios. This is because it is not economically viable to carry out a collecting system for styrofoam; thus, this material is considered not recyclable. Due to its lightweight nature, it has a higher chance of getting blown out as litter and breaking down into smaller plastic pieces in nature.

3.1.4 Baseline

To maintain a unified and proper reporting of compliance with this target reduction rate of plastics, a baseline quantity of plastic packaging used and production amount should be provided as well. Meanwhile, a standard means of measuring the baseline data and reporting should be standardized to avoid “double-counting” or “double-crediting,” as requested by the stakeholders in one of our consultations.

As previously mentioned, the EPR scheme encourages waste reduction through the elimination of unnecessary packaging of products, but how can OEs come up with a baseline plastic packaging value?

The calculation for the baseline value, by plastic category, shall be standardized and unified. In another country, like India for example, they measure the quantity of plastic packaging they produce per category (i.e., Category I, II, III, IV).¹⁰ The formula for the computation is seen below:

$$\text{Baseline Value}_x = A + B$$

Where:

- X : baseline value of a category of a plastic package in metric tonnes
- A : average weight of virgin plastic packaging material (category-wise) purchased and introduced in the market in the last two financial years
- B : average quantity of pre-consumer plastic packaging in the last two financial years

Do note, however, that is only a suggestion; but should a business entity already have the means to determine their unnecessary plastics, they may still implement it in their system unless the NSWMC has determined a standard baseline formula.

A working baseline value on the existing plastic packaging volume of the OEs is needed and shall be reported the first time the OE has registered with the EPR. Succeeding expansion of the enterprise leading to an increase in the production and volume of plastic packaging shall also be registered in the succeeding reporting year.

¹⁰ Category I (rigid plastic packaging); Category II (flexible plastic packaging of a single layer or multilayer (more than one layer with different types of plastic), plastic sheets or like and covers made of plastic sheet, carry bags, plastic sachet or pouches; Category III (multilayered plastic packaging (at least one layer of plastic and at least one layer of material other than plastic)); Category IV (plastic sheet or like used for packaging as well as carry bags made of compostable plastics)
Source: Government of India (2022). Plastic Waste Management (Amendment) Rules, 2022.
<https://egazette.nic.in/WriteReadData/2022/233568.pdf>

3.1.5 Plastic Labelling

Putting labels on plastic packaging is important to help consumers know and identify how plastic packaging should be disposed of or managed. Labeling is an important aspect to facilitate re-use, recycling, return to the manufacturer, and other means to circulate the material in the system. This shall be improved as mandated by the law. With this, we suggest that certain standards for plastic labeling be enforced and implemented, with the help of DTI and the FDA. Labels, logos, and/or symbols shall be displayed in the packaging in a manner visible to the consumer showing the following:

- **Resin Identification Code.** It is suggested that all plastic packaging be mandated to put the updated RIC symbol in their products. This RIC symbol, however, is more useful for the producers, recyclers, and aggregators (among others) to assist them in the recovery and recycling process, but not intended to be useful for the consumers.
- **Recyclability code.** Not all plastics are recyclable; some could be reused; while others need to be disposed of. This information should also be put into the plastic packaging to aid the consumers in how to manage the plastic packaging wastes after their use, thereby increasing participation in the EPR law. Compared with the RIC symbols, the recyclability code will be useful for consumers. With this, in addition to the RIC symbols, we advocate the inclusion of additional code for the EPR implementation that is not complicated and easily understood.

In other countries, there is a system of using unified recycling labels on the packaging. For instance, in South Africa, WWF-SA facilitated the “On-Pack Recycling Label”¹¹ to provide clear instructions on how product packaging (and its components) could be recycled based on the availability of recycling infrastructure in the local area. **Figure 7** shows a sample of an OPRL label in one of the retail products in South Africa.

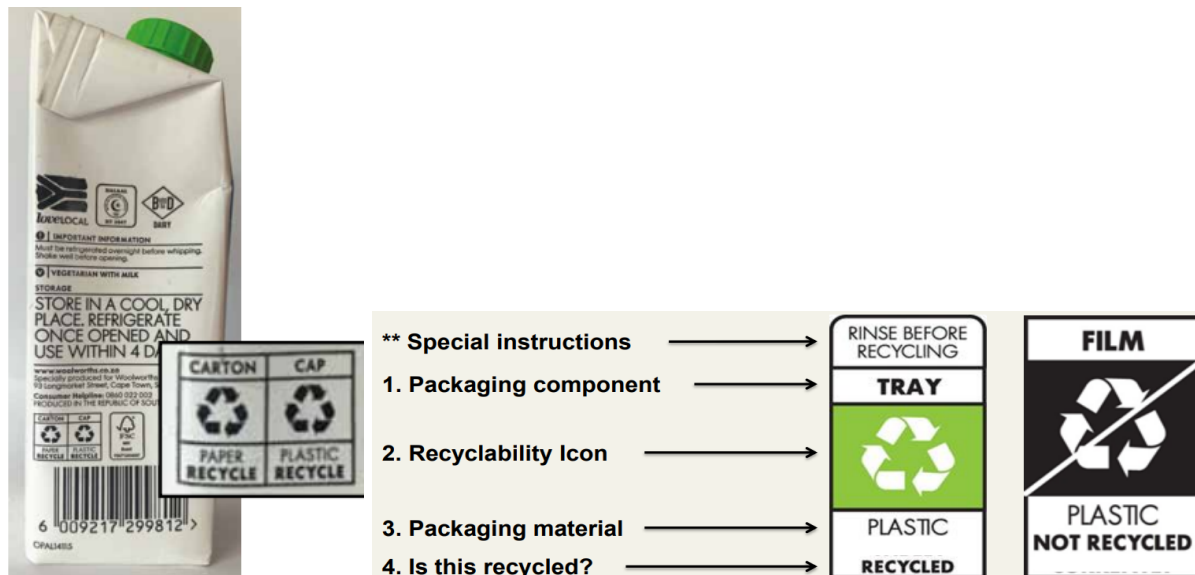


Figure 7. Sample Package Labelling on Recyclability

Source: https://www.consumersinternational.org/media/361468/unep_ci_2021_wwf_south_africa_oprl_case_study.pdf
https://www.green-cape.co.za/assets/1_South_Africa_s_New_Simplified_Recycling_Label_Zaynab_Sadan.01.pdf

In addition to the product label, they also provide special instructions for consumers on how they should prepare the packaging waste. **Table 6** shows examples of disposal instructions.

¹¹ https://www.consumersinternational.org/media/361468/unep_ci_2021_wwf_south_africa_oprl_case_study.pdf

Table 6. Special Instruction to Disposal of Product Packaging in South Africa

Special Instruction	Sample Application
Empty and replace cap	<ul style="list-style-type: none"> On fruit juice bottles.
Empty contents and reattach closure	<ul style="list-style-type: none"> Oil-based contents are currently sent to landfill so no need to wash, i.e. cooking oils, and peanut butter. The closure is recycled. PP closures are recycled, and the jars have large closures.
Recycle if clean and dry	<ul style="list-style-type: none"> Specific to microwaveable meals—usually PP.
Replace cap	<ul style="list-style-type: none"> On glass bottles/containers.
Separate lidding	<ul style="list-style-type: none"> On ready meals as the film could be multilayer PE and not PP.
Separate plastic film	<ul style="list-style-type: none"> On gift boxes with plastic windows. Need to state that the box is recycled and the window is not.
Separate pump	<ul style="list-style-type: none"> On household cleaners with pump action nozzles.
Separate shrink sleeve	<ul style="list-style-type: none"> The full body labels on plastic bottles.
Rinse before recycling	<ul style="list-style-type: none"> On recyclable containers that are eaten out of, e.g. yogurt tubs.
Flatten and replace cap	<ul style="list-style-type: none"> Liquid carton packaging i.e. Tetra Pak, Nampak.

Source: WWF-SA (2019). https://www.oneplanetnetwork.org/sites/default/files/on_pack_recycling_guidelines.pdf

In France, the “Triman” label is printed on the packaging to provide information to consumers on how to segregate a specific packaging according to the French waste collection system (either residual/grey or recyclable/yellow). Through this label, waste segregation at the source is facilitated as it is an easy yet very effective tool to visualize and provide guidance to the consumer on how to segregate a specific item. Through this improved waste segregation at source, the overall recycling quality can be increased.¹²

Since the recycling ability varies per country and location, the Philippines may opt to develop their product labels with these samples as a basis.

¹² WWF-Philippines (2020). EPR Scheme Assessment for Plastic Packaging Waste in the Philippines

3.1.6 EPR Programs

EPR Programs are needed to be submitted by the OEs, their collective, or through their PRO to the NSWMC as part of their EPR registration. The EPR Registration process will be completed once the EPR program has been approved.

*The law (**Section 6 - Section 44-D**) explains that obliged enterprises shall, within six months following the effectivity of the EPR Law, establish or phase in the EPR program for plastic packaging to achieve efficient management of plastic packaging waste; reduced production, importation, supply or use of plastic packaging deemed low in reusability, recyclability, or retrievability; and plastic neutrality through efficient recovery and diversion schemes.*

The programs under this section may include the activities and strategies stated for the framework under Section 3.1 provided that their mechanisms and strategies are submitted to the NSWMC, through the DENR. Obligated enterprises shall institute an EPR program either individually or collectively, whether with or without a PRO.

*Further, an obliged enterprise or the PRO shall register EPR programs with the NSWMC, through the DENR and kept by the NEC (**Section 6 - Section 44-E**). The NSWMC shall ensure that the EPR programs submitted by an obliged enterprise or PRO, as the case may be, include the following information:*

- *Obligated enterprise or PRO information, and contact information of the person responsible for its EPR;*
- *Specific type of packaging materials as covered by Section 44-C, and product brands;*
- *Whether the EPR program is to be implemented individually, collectively, or through a PRO;*
- *Verifiable volume or weight of the plastic packaging brought into the market within a specified period;*
- *Target volume or weight of plastic packaging waste for recovery, reuse, and recycling;*
- *Other EPR programs, such as the redesign of plastic packaging to improve reuse or recyclability;*
- *Labeling of packaging materials to facilitate recovery, reuse, recycling, or proper disposal of packaging materials;*
- *Status of implementation of the EPR mechanisms; and*
- *Status of compliance.*

As initial compliance with the provisions of this section, obliged enterprises or PRO shall submit and register their EPR program to the NSWMC, through the DENR, within six months following the effectiveness of the EPR Law.

The DENR, through the Environmental Management Bureau, and in coordination with the NSWMC, shall monitor and evaluate the compliance of obliged enterprises or their PROs with their respective EPR programs. For this purpose, obliged enterprises or their PROs shall be required to submit annual compliance reports.

Meanwhile, the functions of the National Ecology Center have been expanded to include maintaining an EPR Registry, establishing a national recycling network, and monitoring and evaluating compliance with registered EPR programs.

The formulation of the EPR Programs should consider the proposed EPR implementation scheme. It should be inclusive and be built on the existing solid waste management system. In addition to this, the following are some of the suggested EPR Programs which may be considered in the IRR and/or the OEs:

- Programs involving collaboration with the LGUs, communities, and these informal waste sectors;
- Activities involving recovery schemes for plastic wastes;

- Transportation of recovered plastic wastes to the appropriate recycling, composting, and other diversion or disposal sites;
- Clean up of plastic wastes leaked into coastal areas, public roads and other sites;
- Establishment of recycling, composting, thermal treatment, and other waste diversions or disposal facilities.;
- Promote the use of highly reusable, recyclable, and retrievable products in their establishments or make available for sale locally made products that are made of organic or compostable materials;
- Charge customers a minimum fee of five pesos for every single-use plastic bag regardless of whether it is compostable or for disposal;
- Establish an in-store recovery program to facilitate the return of used plastic products; and
- Take-back programs, deposit-refund schemes, plastics in exchange for currency or commodity, and biodegradable waste converted to either biomass energy or compost.

The EPR Program should also include the adoption of strategies and investment in technologies that can reduce and eliminate harmful impacts of their products on the environment even as early as the design stage, hence an upstream solution. In addition to these, the OEs are also expected to find means to improve the reuse and recyclability of their products to avoid placing a burden on consumers and recyclers at the product's end of life.

To assist the OEs, collective, PROs, and MSME (falling under the obliged enterprise definition and those that would like to voluntarily join the EPR), a template for the EPR Program that will be submitted to the NSWMC should be prepared to have a unified form of plan preparation. To summarize the information required by the law below is the minimum content of the EPR Program:

- Name of EPR Officer: _____
- Name of PRO (if any): _____
- Contact Number: _____
- Product brands: _____
- Reporting Period: _____
- Type of plastic packaging materials used: _____
- Volume or weight of the plastic packaging used: _____
- Target volume or weight for recovery, reuse, and recycling: _____
- Other EPR programs: for example, redesign of plastic packaging to improve reuse or recyclability;
- Labels/markings to facilitate recovery, reuse, recycling or proper disposal of packaging materials:

- Status of implementation: _____
- Status of compliance: _____

In the case of MSMEs that want to participate voluntarily, they can reach out to the DTI-BSMED to be eligible to receive assistance. They must first register the business name with DTI/SEC and secure the necessary permits from the barangay, city/municipality, and BIR.¹³

To promote the ease of doing business, the Negosyo Centers are established nationwide to provide or facilitate access to various business development services for MSMEs. Aside from starting a business or enterprise, there are Business Counsellors available in the Negosyo Centers to assist you. Negosyo Centers conduct and link MSMEs to seminars, training, and programs.

¹³ All discussions pertaining to MSME are from the WWF-Philippines (2022), Interview meeting with DTI-BSMED OIC Director Emma C. Asusano on 11 October 2022.

Aside from the assistance that can be provided by DTI ROG to reach the DTI offices in the regions and provinces, the BSMED may also need assistance in tapping the professional organizations and associations for businesses.

There may be a need to develop a means of how a certain EPR activity or the program will be qualified or assessed, how it should be reported, and the process and timing of its certification/approval/accreditation as this is one of the questions that stakeholders usually ask.

3.1.7 Stakeholders

Stakeholders are vital for the success of the EPR implementation. Various stakeholders are needed to be identified and have clearly defined roles, as they are vital for the success of the EPR in the Philippines. Among the stakeholder groups, the waste collectors (including formal and informal waste sectors), and recyclers and consolidators are groups that should be given consideration by the business sectors in the course of the implementation of their EPR Programs. This is also to make sure that a human rights-based approach EPR is implemented to ensure the welfare of the IWS and waste diverters, and guards against gender discrimination, child labor, and other forms of discrimination in the workplace and negotiations.

The roles of the waste collectors and recyclers and consolidators are summarized in **Table 7**.

Table 7. Roles of Waste Collectors and Recyclers and Consolidators

Stakeholder Group	Roles
Waste Collectors (formal and informal waste sectors)	<ul style="list-style-type: none"> • Could be formalized (IWS) through different business models; • Serve as the link and are responsible for ensuring that each component of the waste stream reaches its intended recipient and does not leak into the environment; • MRF operators buy material from the informal sector but sells only to formal recycling companies, and • Essential because segregation at source is an important feature for EPR to work.
Recyclers and Consolidators	<ul style="list-style-type: none"> • Collect recyclables and recovered materials to be transformed into new products; • Partner with the PRO; • Monitor and report data to the central platform; and • Must comply with government standards to ensure high-quality recycling

3.1.8 Audit and Monitoring

Based on the law (Section 6 - Section 44-G), obliged enterprises or their PROs shall establish and implement an auditing system to monitor and assess their compliance performance with RA 11898 and their EPR programs. For this purpose, the obliged enterprises or their PRO shall engage an independent third-party auditor to certify the veracity of the reported plastic product footprint generation, recovery, and EPR program compliance, using uniform standards established by the DENR. The audited report shall be submitted by the obliged enterprises or their PROs to the DENR.

The certified reports on plastic product footprint generated and recovered by the obliged enterprises shall be made available to the public through the website of the DENR: Provided, that a record, report, or information, or particular portion thereof deemed by the DENR as confidential, shall not be made public when such would divulge trade secrets, production or sales figures, or methods and processes unique to the enterprise that would otherwise tend to adversely affect its competitive position.

For the audit, it is suggested that the following be considered:

- provide parameters for audit criteria so that the assessment and evaluation of EPR Programs will be based on objective standards, and
- the audit will be undertaken by independent auditors.

In terms of ensuring that implementation of the EPR is enforced, a good database and monitoring system should be put in place. Monitoring of the compliance of the OEs, collective, and PROs to the requirement set by the law is linked to the fines and penalties; however, one of the concerns right now is how monitoring can be done.

Since OEs are generally large enterprises (falling in the definition of the law), a master list of all large enterprises can be generated with the assistance of the DTI, SEC, and/or BIR. They can also gather the master list of the MSME to check which among this group will be included in the OEs. Once finalized, the master list can also form part of the registry of EPR, in addition to the registry of the EPR Programs, and be a basis for the monitoring of their compliance. New enterprises that are registered and considered OEs shall be notified to DENR to be included in the said master list.

A public registry and information data bank should be readily available for monitoring and guidance.

3.2 Salient Points of the National Framework on EPR

The law mandates that a national framework on EPR for all types of product wastes shall be formulated within three months after the effectiveness of the EPR Law in consultation with the DENR and NSWMC (Section 6 - Section 44-A). In summary, the following shall be the components of the said framework:

- *Reduction of non-environment friendly products which may include the following activities and strategies:*
 - o *adoption of reusable products, or redesign of the products to improve its reusability, recyclability, or retrievability;*
 - o *inclusion of recycled content or recycled materials in a product;*
 - o *adoption of appropriate product refilling systems for retailers;*
 - o *viable reduction rates plan;*
 - o *information and education campaign schemes; and*
 - o *appropriate labeling of products, including the information thereon for the proper disposal of the waste product.*
- *Product waste recovery programs aimed at effectively preventing waste from leaking to the environment, which may include the following activities:*
 - o *waste recovery schemes through redemption, buy-back, offsetting, or any method or strategy that will efficiently result in high retrievability, high recyclability, and resource recovery of waste products;*
 - o *diversion of recovered waste into value chains and value-adding useful products through recycling and other sustainable methods;*
 - o *transportation of recovered waste to the appropriate composting, recycling, or other diversion or disposal site in the country;*
 - o *clean-up of waste leaked to coastal areas, public roads, and other sites;*
 - o *establishment of commercial or industrial scale recycling, composting, thermal treatment, and other waste diversion or disposal facilities for waste products, when investment therein is viable; and*
 - o *partnership with LGUs, communities, and the informal waste sectors.*

Following the elements of the EPR's National Framework (as provided by the law and its IRR, particularly in Rule XV), this toolkit would like to highlight the following factors that should be considered in the implementation of the EPR and be considered in the development of EPR Programs by the business sectors.

3.2.1 Collaboration with LGUs, Cooperatives, and Informal Waste Sector

Rule XV Section 2.2 (6) of the IRR mentioned "*Partnership with LGUs, communities, and informal waste sectors*" where "*Obligated Enterprises, or the Collectives or PROs to which they belong, may establish collaborative partnerships with LGUs, communities, and informal waste sector for, among others.*"

The proposed EPR scheme advocates supporting the already existing solid waste management (SWM) infrastructure (i.e., materials recovery facility or MRF, junk shops, and recycling facilities) in place and sees to it that the principle of producer responsibility is applied to address the gaps in the current system rather than to propose measures that may cause major disruptions to already established value chains and end up being impractical to implement. As an important contributor to the recycling industry, a collaborative partnership is needed.

Establishing a collaborative partnership with LGUs, Cooperatives, and IWS is one of the means to further implement the EPR in the country, but there is a need to ensure that benefits and/or incentives will reach all parties of the partnership. One of the means to do this is by incentivizing those "working with the LGUs" rather than "incentivizing the LGUs" to ensure that the benefits trickle down to the community, thereby meeting a human rights-based approach. The collaborative partnership with all the parties should provide clear roles and be approved by all sides.

Education campaigns can be another subject of partnerships of business sectors with the LGUs and civil societies. Meanwhile, it will also be beneficial to include the academe (research and development), professionals (e.g., engineers, planners, scientists, etc.), and civic organizations (e.g., Rotary Club, churches, etc.).

A partnership shall be used for collecting and managing wastes, supporting the MRF operation, supporting the waste management cooperatives (if applicable), IEC campaign, and training, among others. Rates should be established for the operation (such as waste collection) of the partnership and should not be confidential. Should there be a waste collection in a certain community, the entity/partnership should make an agreement with the existing cooperative in that community first in order to avoid competition. If there is none, the partnership can go directly with the LGU.

3.2.2 Inclusion of the IWS

In addition to Rule XV Section 2.2 (6) of the IRR, partnership with the informal waste recovery sector is also mentioned.

The IWS is small-scale, labor-intensive, unregulated, and unregistered¹⁴. This includes, but is not limited to, waste pickers and junk shops (usually small). The inclusion of IWS in an EPR scheme is important, as their contribution to recovery efforts is significant as long as there is an economic motivation for them to do so. The IWS is skilled in plastic waste collection, sorting, and recycling but is also the most vulnerable sector along the waste recovery chain.

The MRF operation is proposed to engage the informal sector through the contracting of waste pickers' cooperatives instead of employing waste pickers individually. It is the goal of the proposed EPR scheme to integrate or formalize these informal workers, who are already experienced and skilled in sorting and characterizing various plastic waste, as part of the waste management efforts while keeping their source of income. The IWS for their part may opt to join established cooperatives or to carry on with their waste-picking efforts and selling of recovered items to junk shops. The waste pickers can also form

¹⁴ Wilson, D., Whiteman, A., Tormin, A. (2001). Strategic Planning Guide for Municipal Solid Waste Management. Washington, DC: World Bank.

cooperatives with the assistance of social enterprises or LGUs to build on their capacities. Waste pickers need to receive equitable income and with their health and safety also safeguarded. In addition to forming a cooperative, an entrepreneur program and aggregator formalization can also be considered a means to integrate the IWS.

Thus, the proposed EPR scheme gives the informal sector choices in which they can retrieve waste materials suitably and comfortably, either through continuing their waste-picking activities or by being integrated by social enterprises or cooperatives. They shall be given the opportunity to earn additional income by earning revenue not just from high-value plastics but also from low-value plastics. They may further be supported by providing them with the necessary equipment, such as *karitons* and trucks for hauling, as well as by providing financial assistance that junk shop operators can use as capital. The government should also provide training to waste collectors for them to better understand the different types of plastic and how to segregate them and assist them in reportorial requirements as part of the EPR. Consideration of the IWS in the EPR law is an important measure for the human rights-based approach.

3.2.3 Investment and Infrastructure

Investment should also include research and development, technology sharing, and reduction of plastic waste. As mentioned in Rule XV Section 2.2 (5), “*Establishment of commercial or industrial scale recycling, composting, thermal treatment, and other waste diversion or disposal facilities for waste products, when investment therein is viable.*”

The National Government should invest in the waste management facilities needed to implement the EPR Law. They can also pool resources with the private sector to invest in order to create financial mechanisms for those who want to improve the solid waste infrastructure but do not have the capacity to invest and/or explore other related investments. Investment should also be channeled to recyclers/processing (machinery) to encourage circularity.

The investment in facilities should be included in the implementation framework of EPR and provide incentives to obliged entities that will invest in these facilities. This is because recycling alone is not sufficient, as reprocessing recovered wastes need enough facilities located in the Philippines. In this way, participation and meeting the target recovery of plastic will increase and processing will be more accessible for the OEs and the MSMEs.

3.2.4 Reduction Measures, Research and Development, and Technology Sharing

Rule XV Section 2.2 (1) discussed “*Waste recovery schemes through redemption, buy-back, offsetting, or any method or strategy that will efficiently result in the high retrievability, high recyclability, and resource recovery of waste products.*”

It was previously mentioned how eco-design is one of the means to reduce plastic packaging issues. In addition to this, the academy can also support research and development (R&D). Currently, there are existing fabrication laboratories at the DOST, the University of the Philippines Diliman, and other state universities that can be tapped to innovate and experiment with alternative plastic packaging. Through R&D, the use of natural material as provided in the IRR can be clarified if this is viable and can promote circularity or not.

Finally, OEs investing in R&D should qualify for incentives or benefits in order to encourage more R&D.

3.2.5 Expansion to other types of wastes

The EPR Framework is trying to set a standard that can be applied to all products, not only plastics.

A representative of waste collectors/cooperatives shared that they saw value in plastics and even tires, hence the processing of these types of wastes. The textiles are usually donated to other organizations where they are turned into other materials or products (e.g., rugs). However, some textiles are considered for disposal already due to their materials, or there being no other use yet (e.g., polyester, jersey). Meanwhile, for used batteries, they do not usually recycle or manage them; but due to a partnership with a university near their cooperative, they are now collecting them.

The EPR Framework covers various types of waste products that can be included in the EPR law in the future. There are no further suggestions on the type of waste products to be included in the EPR framework, but it is highly suggested that OEs and MSMEs should familiarize themselves and be prepared for the expansion of EPR to other types of waste.

4.0 CALL TO ACTION

We commend the authors of the law and DENR for leading the drafting of the IRR in close consultation with relevant stakeholders in the plastic value chain. We are also commending the proactive action of the business sectors in anticipating the implementation of the EPR law and in supporting WWF-Philippines in its series of dialogues. It is time to take accountability and build on the current SWM system in creating their EPR programs.

The EPR scheme is a balance of upstream and downstream solutions. Implementing this should not only focus on reaching the recovery rates but also identify ways to reduce unnecessary plastics in the packaging, and provide alternative product delivery. We challenge the OEs to integrate upstream solutions in the EPR programs they will submit to the NEC for approval. This way, we not only stop plastic waste leakage but also close the tap and loop them back into the value chain.

Next, the EPR law implementation should be integrative and inclusive. It should support LGUs that have been at the forefront of solid waste management under RA 9003. MRFs and recycling facilities have always been a challenge that we hope this EPR law can help address. Apart from LGUs, EPR programs should include the informal waste sector which has been critical in the recycling rate. This law can be an opportunity to provide our waste workers with decent working conditions and insurance which are part of their human rights. We urge that OEs take on a human-rights-based approach in implementing this EPR law.

The OEs could further:

- **Undertake research/feasibility studies**, including the benefits and opportunities of establishing an EPR scheme, including investigating examples of well-established EPR schemes in other countries or drawing on their experiences of EPR in other countries in which they operate, or initiate pilot projects/feasibility studies exploring the introduction of alternate packaging formats such as refillable and reusable systems;
- **Familiarize** themselves with the key objectives and principles of EPR;
- **Create a network of communication** between like-minded businesses who are keen to participate in EPR schemes; and
- **Create a collective or PRO**, in cooperation with other stakeholders including governments, waste management operators and, where appropriate, the informal sector.

We need to work together to address plastic pollution, which begins now.

5.0 WORLD-WIDE FUND FOR NATURE'S WORK ON ADDRESSING PLASTIC POLLUTION

Plastic pollution is a systems problem that requires a holistic approach to addressing gaps in the entire plastics lifecycle (from production, usage, collection, and treatment, to secondary markets).

As part of the World Wide Fund for Nature's (WWF) No Plastic in Nature Initiative, a global initiative to stop the flow of plastics entering nature by 2030 through the elimination of unnecessary plastics, doubling reuse, recycling, and recovery, and ensuring that the remaining plastic is sourced responsibly, the organization has been working with various sectors such as:

- Cities, municipalities, and communities in implementing their 10-year Solid Waste Management Plans through identifying, piloting, and showcasing waste reduction and management solutions that can be adopted nationally and globally;
- Policy makers in pushing the Philippines' support to the global treaty on plastic pollution, and the Extended Producer Responsibility (EPR) scheme in the country;
- Ports and businesses in making public commitments, setting waste reduction and management goals, and implementing waste reduction and management solutions that can be adopted nationally and globally; and
- The general public to raise awareness and action to address plastic pollution.

The WWF-Philippines work in EPR is part of the initiative of the UN Environment Programme's (UNEP) SEA circular project, funded by the Government of Sweden. The SEA circular project aims to:

- promote circularity of plastics through extended producer responsibility;
- form producer responsibility organizations (PRO) in the Philippines;
- address challenges and opportunities in the informal sector, recyclers, collection, and recycling of valuable and non-valuable plastics; and
- enable policies that can support the recycling industry with locally-sourced materials.

This project is part of the EPR initiative by the SEA circular project which is implemented together with the UN Environment Programme and The Coordinating Body on the Seas of East Asia (COBSEA). The project is funded by the government of Sweden.¹⁵ Further information on how WWF helps in addressing plastics pollution can be seen in this link <https://wwf.org.ph/what-we-do/plastics/>.

¹⁵<https://wwf.org.ph/what-we-do/plastics/wwf-continues-its-work-on-extended-producer-responsibility-with-unep-sea-circular/>

ANNEXES

Annex A. RA 11898 or the Extended Producer Responsibility Act of 202

[Republic Act No. 11898]

AN ACT INSTITUTIONALIZING THE EXTENDED PRODUCER RESPONSIBILITY ON PLASTIC PACKAGING WASTE, AMENDING FOR THIS PURPOSE REPUBLIC ACT NO. 9003, OTHERWISE KNOWN AS THE "ECOLOGICAL SOLID WASTE MANAGEMENT ACT OF 2000"

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. *Short Title.* - This Act shall be known as the "Extended Producer Responsibility Act of 2022".

SEC. 2. Section 2 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 2. *Declaration of Policies.* - It is hereby declared the policy of the State to adopt a systematic, comprehensive and ecological solid waste management program which shall:

"x x x

i) Integrate public participation in the development and implementation of national and local comprehensive and ecological waste management programs;

(j) Strengthen the integration of ecological solid waste management and resource conservation and recovery topics into the academic curricula of formal and non-formal education in order to promote environmental awareness and action among the citizenry; and

k) Institutionalize the extended producer responsibility mechanism as a practical approach to efficient waste management, focusing on waste reduction, recovery and recycling, and the development of environment-friendly products that advocate the internationally accepted principles on sustainable consumption and production, circular economy, and producers' full responsibility throughout the life cycle of their product."

SEC. 3. Section 3 of Republic Act No. 3003 is hereby amended to read as follows:

"SEC. 3. *Definition of Terms.* - For the purposes of this Act:

"x x x

"(d-1) Circular economy shall refer to an economic model of creating value by extending product lifespan through improved design and servicing, and relocating ways from the end of the supply chain to the beginning. This intends to efficiently utilize resources by its continual use, and aims to retain the highest utility and value of products, components, and materials at all times, through sharing, leasing, reuse, repair, refurbishment, and recycling in an almost closed loop;

"x x x

"(m-1) Extended producer responsibility (EPR) shall refer to the environmental policy approach in practice that requires producers to be environmentally responsible throughout the lifecycle of product, especially its post-consumer or end-of-life stage;

"x x x

"(p-1) High recyclability shall refer to a condition wherein the value for recovery and reprocessing of a product is high, due to its design, composition, content, and density, among other things;

"(p-2) High retrievability shall refer to a condition wherein after use of a product, a significant volume of its waste can be recovered, properly recycled, processed or disposed of, on account of its high value for recovery, recycling, or reprocessing;

"(p-3) Importer shall refer to a natural or juridical person engaged in bringing consumer goods into the Philippines, intended to be sold, whether in original packaging or to be repackaged for distribution to the general public;

"(p-4) Large enterprises shall refer to any business entity whose total assets, inclusive of those arising from loans but exclusive of the land on which the particular business entity's office, plant and equipment are situated, are exceeding that of medium enterprises stated under Republic Act No. 9501, otherwise known as the "Magna Carta for Micro, Small, and Medium Enterprises";

"x x x

"(s-1) Obligated enterprises shall refer to product producers that are required to implement an EPR program under this Act;

"x x x

"(v-1) Plastic shall refer to a synthetic material made from a wide range of organic polymers such as polyethylene terephthalate, high density polyethylene, low density polyethylene, polypropylene, polystyrene, PVC and nylon that can be processed to form solid objects of various shapes;

"(v-2) Plastic neutrality shall refer to a system or its desired outcome where, for every amount of plastic product footprint created, an equivalent amount thereof is recovered or removed from the environment by the product producers through an efficient waste management system;

"(v-3) Plastic packaging shall refer to the polymer material designed to protect a product from environmental factors, or carry goods for transportation, distribution, and sale, including service necessities and more particularly described under Section 44-C;

"(w-1) Product footprint shall refer to a measure of the amount of goods produced, imported, distributed or supplied by a product producer, and deemed to cause damage to the environment;

"(w-2) Product producer shall refer to any of the following persons:

(1) brand owner who sells or supplies any commodity under a brand, label or identity using a product it produced, or a material supplied to it by another manufacturer, or supplier; and

(2) product manufacturer or importer that supplies its commodities for the use of the general consumer, or distributes the same as a material product of a brand owner." *Provided*, That for purposes of Article 2 of Chapter III-A, in case the commodities are manufactured, assembled, or processed by a product manufacturer for another obliged enterprise which affixes its own brand name, the latter shall be deemed as the manufacturer;

"x x x

"(qq-1) Sustainable consumption and production shall refer to the use of services and related products that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials, as well as the emission of wastes and pollutants over the life cycle of the service or product, so as not to jeopardize the needs of future generations;

"x x x

SEC. 4. Section 4 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 4. *National Solid Waste Management Commission.* - There is hereby established a National Solid Waste Management Commission, hereinafter referred to as the Commission, under the Office of the President. The Commission shall be composed of eight (8) members from the government sector and five (5) members from the private sector. The government sector shall be represented by the heads of the following agencies in their *ex officio* capacity:

"(1) Department of Environment and Natural Resources (DENR);

"(2) Department of the Interior and Local Government (DILG);

"(3) Department of Science and Technology (DOST);

"(4) Department of Health (DOH);

"(5) Department of Trade and Industry (DTI);

"(6) Department of Agriculture (DA);

"(7) Metro Manila Development Authority (MMDA); and

"(8) Union of Local Authorities of the Philippines.

"The private sector shall be represented by the following:

"(a) Three (3) representatives from non-government organizations (NGOs) with a track record on solid waste management or waste reduction, recycling and resource recovery;

"(b) A representative from the recycling, composting, or resource recovery and processing industry; and

"(c) A representative from the manufacturing industry, packaging industry, or obliged enterprises;

"x x x

"*Provided*, That representatives from the private sector shall be appointed by the President for a term of three (3) years.

"x x x

SEC. 5. Section 7 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 7. *The National Ecology Center.* - There shall be established a National Ecology Center (NEC) under the Commission shall provide technical expertise, information, training, and networking services for the implementation of the provisions of this Act. As part of its oversight function, the NSWMC shall have direct supervision over the NEC.

"In this regard, the NEC shall perform the following functions:

"(a) Facilitate training and education in integrated ecological solid waste management;

"(b) Establish and manage a solid waste management information database, in coordination with the DTI and other concerned agencies:

"(1) on solid waste generation and management techniques as well as the management, technical and operational approaches to resource recovery;

"(2) of processors/recyclers, the list of materials being recycled or bought by them and their respective prices; and

"(3) on the rate of recovery of each type of plastic waste, updated semi-annually;

"(c) Promote the development of a recycling market through the establishment of a national network that will enhance the opportunity to recycle;

"(d) Maintain an EPR Registry that contains the registered EPR programs submitted by obliged enterprises or Producer Responsibility Organizations (PROs);

"(e) Monitor and evaluate the compliance of obliged enterprises and PROs, with the registration of their EPR programs;

"(f) Develop and maintain a database, which includes digital formats, subject to the provisions of Section 44-C, and ensure that it is reliable, effective, secure, transparent, and accessible to the public;

"(g) Receive sampling and assessment reports submitted pursuant to second paragraph of Section 44-H and undertake the necessary action on such reports, or complaints from any citizen against a waste generator, an obliged enterprises, PRO, or waste management entity, for the purpose of improving compliance with the law;

"(h) Provide or facilitate expert assistance in pilot modeling of solid waste management facilities;

"(i) Develop, test, and disseminate model on waste minimization and reduction auditing procedures for evaluating options; and

"(j) Within one (1) year after the effectivity of the Extended Producer Responsibility Act of 2022, provide an assessment on the volume or footprint of other generated wastes, for priority inclusion in the EPR scheme.

"The National Ecology Center shall be headed by the Assistant Director of the Bureau in his/her *ex officio* capacity. The Assistant Director shall regularly submit reports as may be required by the NSWMC in its monthly meetings. The reports of the NEC shall be consolidated by the NSWMC Secretariat for submission to the NSWMC. The NEC shall maintain a multi-sectoral, multi-disciplinary pool of experts including those from the academe, inventors, practicing professionals, business and industry, youth, women, and other concerned sectors, who shall be screened according to qualifications set by the Commission."

SEC. 6. Republic Act No. 9003 is hereby further amended by inserting a new chapter after Chapter III to read as follows:

"CHAPTER III-A

"EXTENDED PRODUCER RESPONSIBILITY

"ARTICLE 1

"National Framework for All Types of Product Wastes

"SEC. 44-A. *National Framework for Extended Producer Responsibility.* - Unless otherwise provided under Article 2 of this Chapter, within three (3) months following the effectiveness of the Extended Producer Responsibility Act of 2022, the Department, in consultation with the NSWMC, shall formulate a national framework on EPR for all types of product wastes. The framework shall include the following components:

"(a) Reduction of non-environment friendly products which may include the following activities and strategies:

"(1) adoption of reusable products, or redesign of the products to improve its reusability, recyclability, or retrievability;

"(2) inclusion of recycled content or recycled materials in a product;

"(3) adoption of appropriate product refilling systems for retailers;

"(4) viable reduction rates plan;

"(5) information and education campaign schemes; and

"(6) appropriate labeling of products, including the information thereon for the proper disposal of the waste product.

"(b) Product waste recovery programs aimed at effectively preventing waste from leaking to the environment, which may include the following activities:

"(1) waste recovery schemes through redemption, buy-back, offsetting, or any method or strategy that will efficiently result in the high retrievability, high recyclability, and resource recovery of waste products;

"(2) diversion of recovered waste into value chains and value-adding useful products through recycling and other sustainable methods;

"(3) transportation of recovered waste to the appropriate composting, recycling, or other diversion or disposal site in the country;

"(4) clean-up of waste leaked to coastal areas, public roads, and other sites;

"(5) establishment of commercial or industrial scale recycling, composting, thermal treatment, and other waste diversion or disposal facilities for waste products, when investment therein is viable; and

"(6) partnership with H^oGUs, communities, and the informal waste sectors.

"ARTICLE 2

"Extended Producer Responsibility for Plastic Packaging

"SEC. 44-B. *Obligated Enterprises Under This Article.* - Product producers obliged to implement EPR under this Article shall refer to large enterprises that generate plastic packaging waste: *Provided, however,* That micro, small and medium enterprises defined under Republic Act No. 9501 shall not be covered: *Provided, further,* That in case the total value of assets of all enterprises carrying the same brand, label or trademark exceeds that of medium enterprises stated under Republic Act No. 9501, these enterprises shall be deemed obliged enterprises.

"Notwithstanding the provisions of the immediately preceding paragraph, micro, small, and medium enterprises are encouraged to practice EPR voluntarily or be a part of the network of obligated enterprises or producer responsibility organizations practicing EPR.

"SEC. 44-C. *Plastic Packaging Covered by EPR.* - For the purpose of Article 2 of Chapter III-A of this Act, plastic packaging shall refer to products utilized to carry, protect, or pack goods for transportation, distribution, and sale.

"Plastic packaging shall include the following:

"(a) Sachets, labels, laminates, and other flexible plastic packaging products, whether single layer or multi-layered with plastics or other materials;

"(b) Rigid plastic packaging products, whether layered with any other materials, which include containers for beverages, food, home, personal care, and cosmetic products, including their coverings, caps, or lids and other necessities or promotional items, such as cutlery, plates, drinking straws, or sticks, tarps, signage, or labels;

"(c) Plastic bags, which include single-use plastic bags, for carrying or transporting of goods, and provided or utilized at the point of sale; and

"(d) Polystyrene.

"SEC. 44-D. *EPR Mandates.* - Notwithstanding the provisions of Section 44-A, obliged enterprises shall, within six (6) months following the effectivity of the Extended Producer Responsibility Act of 2022, establish or phase-in EPR programs for plastic packaging to achieve efficient management of plastic packaging waste, reduced production, importation, supply or use of plastic packaging deemed low in reusability, recyclability of retrievability, and plastic neutrality through efficient recovery and diversion schemes.

"The programs under this section may include the activities and strategies stated under paragraphs (a) and (b) of Section 44-A: *Provided,* That their mechanisms and strategies are submitted to the NSWMC, through the Department. Obligated enterprises shall institute an EPR program either individually or collectively, whether with or without a PRO.

"SEC. 44-E. *EPR Registration.* - An obliged enterprise or the PRO shall register EPR programs with the NSWMC, through the Department.

"The NSWMC shall ensure that the EPR programs submitted by an obliged enterprise or PRO, as the case may be, include the following information:

"(a) Obligated enterprise or PRO information, and contact information of the person responsible for its EPR;

"(b) Specific type of packaging materials as covered by Section 44-C, and product brands;

"(c) Whether the EPR program is to be implemented individually, collectively, or through a PRO;

"(d) Verifiable volume or weight of the plastic packaging brought into the market within a specified period;

"(e) Target volume or weight of plastic packaging waste for recovery, reuse, and recycling;

"(f) Other EPR programs, such as the redesign of plastic packaging to improve reuse or recyclability;

"(g) Labeling of packaging materials to facilitate recovery, reuse, recycling or proper disposal of packaging materials;

"(h) Status of implementation of the EPR mechanisms; and

"(i) Status of compliance.

"As initial compliance with the provisions of this section, obligated enterprises or PRO shall submit and register their EPR program to the NSWMC, through the Department, within six (6) months upon the effectiveness of the Extended Producer Responsibility Act of 2022.

"The Department, through the Environmental Management Bureau, and in coordination with the NSWMC, shall monitor and evaluate the compliance of obliged enterprises or their PROs with their respective EPR programs. For this purpose, obliged enterprises or their PROs shall be required to submit annual compliance reports.

"SEC. 44-F. *Compliance Period for Plastic Packaging Recovery Programs.* - Notwithstanding the provisions of the immediately preceding Article, and to give the obliged enterprises and PROs sufficient period to adjust to their EPR duties and responsibilities and improve their performance over time, obliged enterprises under this Article shall likewise establish phase-in recovery programs that will achieve plastic neutrality. The programs may include the activities stated under paragraph (b) of Section 44-A.

"For this purpose, obliged enterprises that generate either rigid or flexible plastic packaging shall recover or offset their respective plastic packaging footprint.

"The following targets for the recovery of plastic product footprint generated during the immediately preceding year are hereby set:

"December 31, 2023 - twenty percent (20%);

"December 31, 2024 - forty percent (40%);

"December 31, 2025 - fifty percent (50%);

"December 31, 2026 - sixty percent (60%);

"December 31, 2027 - seventy percent (70%);

and

"December 31, 2028, and every year thereafter - eighty percent (80%).

"For this purpose, obliged enterprises shall submit the report of their compliance including appropriate documentation to the Department.

"SEC. 44-G. *Audits*. - Obligated enterprises or their PROs shall establish and implement an auditing system to monitor and assess their compliance performance with this Act and their EPR programs. For this purpose, the obliged enterprises or their PRO shall engage an independent third-party auditor to certify the veracity of the reported plastic product footprint generation, recovery, and EPR program compliance, using uniform standards established by the Department. The audited report shall be submitted by the obliged enterprises or their PROs to the Department.

"The certified reports on plastic product footprint generated and recovered by the obliged enterprises shall be made available to the public through the website of the Department: *Provided*, That a record, report, or information, or particular portion thereof deemed by the Department as confidential, shall not be made public when such would divulge trade secrets, production or sales figures, or methods and processes unique to the enterprise that would otherwise tend to adversely affect its competitive position.

"SEC. 44-H. *Producer Responsibility Organization (PRO)*. - Obligated enterprises may voluntarily organize themselves to form or authorize a PRO for the purpose of establishing a viable platform to implement their EPR program under this Article.

"For this purpose, the Department, in consultation with the NSWMC and obliged enterprises or their PRO, shall establish a system or parameters necessary to make the PRO sustainable and compliant with the purposes of this Act. These shall include standards, rules, or guidelines for the following:

"(a) Organizational structure and leadership;

"(b) Membership requirements;

"(c) Duties and responsibilities, to include:

"(1) implementation parameters of the EPR program;

"(2) financing mechanisms;

"(3) cooperation mechanism with other stakeholders, waste management entities, distributors, retailers, grocery and store owners, junkshop operators, and individuals or entities in the informal sector involved in waste management; and

"(4) implementation strategies;

"(d) Setting standards towards plastic neutrality;

"(e) Reporting, verification, and auditing of waste footprint generation, recovery, and diversion; and

"(f) Data collection and database maintenance."

SEC. 7. Section 45 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 45. *Incentives*. -

"(a) Rewards and recognitions, monetary or otherwise, shall be provided to individuals, private organizations and entities, obligated enterprises, and PROs, including non government organizations, that have undertaken outstanding and innovative projects, technologies, processes, and techniques or activities in reuse, recycling, and reduction. Said rewards shall be sourced from the Fund herein created.

"(b) An incentive scheme is hereby provided for the purpose of encouraging LGUs, enterprises, or private entities, including obliged enterprises, PROs, and NGOs, to develop or undertake effective solid waste management, including recovery and diversion of plastic product footprint, or actively participate in any program geared towards the promotion thereof as provided for in this Act, as amended.

"(1) Fiscal Incentives

"(a) Tax incentives - Any provision of law to the contrary notwithstanding, obliged enterprises or PROs acting on their behalf, and other registered business enterprises may apply for incentives following the approval process provided under Title XIII (Tax Incentives) of the National Internal Revenue Code of 1997, as amended, for eligible activities: *Provided*, That such activities shall undergo the standard processes in the identification of qualified activities under the Strategic Investment Priority Plan (SIPP).

"(b) The EPR expenses of obliged enterprises, PROs, and private enterprises shall be considered as necessary expenses deductible from gross income subject to the substantiation requirements for necessary business expenses deductible from gross annual income in accordance with Section 34(A)(1) of the National Internal Revenue Code of 1997, as amended.

"(c) Tax and Duty Exemption of Donations, Legacies, and Gift - x x x."

SEC. 8. Section 49 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 49. *Fines and Penalties.* - (a) x x x

"(g) Any obliged enterprise that fails to register under Section 44-E or fails to comply with Section 44-F shall be imposed with the following fines:

"(1) a fine of not less than Five million pesos (P5,000,000.00) but not exceeding Ten million pesos (P10,000,000.00) for the first offense;

"(2) a fine of not less than Ten million pesos (P10,000,000.00) but not exceeding Fifteen million pesos (P15,000,000.00) for the second offense; and

"(3) a fine of not less than Fifteen million pesos (P15,000,000.00) but not exceeding Twenty million pesos (P20,000,000.00) for the third offense and automatic suspension of the business permit until the requirement of the law is complied with.

"In case of failure to meet the targets set under Section 44-F, the obliged enterprise shall pay the same fines set above, or a fine twice the cost of recovery and diversion of the footprint or its shortfall, whichever is higher.

"The penalty shall be imposed whether or not the noncompliance is the result of the failure to register under Section 44-E, falsification of documents, misdeclaration of generated or recovered footprint, employment of any scheme to maliciously evade the responsibility of an enterprise under the Extended Producer Responsibility Act of 2022, or tamper its compliance with the provisions of Section 44-F.

"The Pollution Adjudication Board of the Department shall hear and adjudicate cases of violations or offenses under this section, and impose appropriate fines therefor."

SEC. 9. *Mandatory Review.* - Within five (5) years after the effectivity of this Act, or as the need arises, Congress shall review the accomplishments, and impact of this Act, as well as the performance of its implementing agencies, and the compliance of obliged enterprises to achieve the objectives of this Act, for the purpose of determining the necessity of remedial legislation mandating for more stringent footprint recovery targets, higher incentives, or phase-out of certain types of single-use plastic packaging.

Within one (1) year after the effectiveness of this Act. The NEC shall further identify, review, and update the list of non-environmentally acceptable products and plastic packaging material that shall be phased out, especially those that are highly unnecessary or replaceable, or cannot be efficiently reused, recovered, or recycled, consistent with the provisions of this Act.

SEC. 10. *Appropriations.* - The sum necessary for the effective implementation of this Act shall be charged against the appropriations for the DENR under the General Appropriations Act: *Provided*, That obliged enterprises and the respective PROs shall be responsible for the funds necessary to operationalize and maintain the EPR programs, in compliance with this Act and its implementing rules and regulations.

SEC. 11. *Implementing Rules and Regulations.* - The DENR, in consultation with relevant government agencies, representatives from obligated enterprises, and other stakeholders shall formulate the rules and regulations necessary to implement the provisions of this Act within ninety (90) days from its effectiveness.

SEC. 12. Section 60 of Republic Act No. 9003 is hereby amended to read as follows:

"SEC. 60. *Joint Congressional Oversight Committee.* - There is hereby created a Joint Congressional Oversight Committee to monitor the implementation of the Act and to oversee the functions of the implementing agencies. The Committee shall be composed of five (5) Senators and five (5) Representatives to be appointed by the Senate President and Speaker of the House of Representatives, respectively. The Oversight Committee shall be co-chaired by the Chairpersons of the Committee on Environment, Natural Resources and Climate Change of the Senate and the Committee on Ecology of the House of Representatives."

SEC. 13. *Separability Clause.* - If any portion or provision of this Act is declared unconstitutional, the remainder of this Act or any provision not affected thereby shall remain in force and effect.

SEC. 14. *Repealing Clause.* - Any law, presidential decree or issuance, executive order, letter of instruction, rule, or regulation inconsistent or contrary to the provisions of this Act is hereby repealed or modified accordingly.

SEC. 15. *Effectivity.* - This Act shall take effect fifteen (15) days following its complete publication in the *Official Gazette* or in a newspaper of general circulation.

Approved,

sgd.

LORD ALLAN JAY Q. VELASCO
Speaker of the House of Representatives

sgd.

VICENTE C. SOTTO III
President of the Senate

Annex B. Plastic Packaging Waste Management

In addressing plastic packaging wastes and pollution, it is vital that we level off with the understanding of the types of plastics, whether they are recyclable or not, how they affect the environment, what makes them pollutive, and which among them is the target for management.







Categories of Plastics





Plastics are categorized using the Standard Classification of Plastics (using the resin identification code or RIC) developed by the Society of Plastic Industries in 1998. Depending on its material and how it is produced, plastics are categorized into seven types. It should be noted as well that each type of plastic corresponds to a unique code which is usually mandated to be put in the plastic product in other countries. Further, the RIC is never meant to be confused as the “recyclability” code for plastics but rather, the type of its plastic hence, in 2013, ASTM International updated the RIC symbol¹⁶ from the three arrows into a triangle.



Table B-1 shows the information on the different types of plastics. Plastics also have the potential for reuse and recycling and are not entirely disposable (or single-use); thereby, the table also provides details on the recyclability of each plastic type.



¹⁶ <https://www.plasticsnews.com/article/20130611/NEWS/130619978/say-so-long-to-recycling-code-arrows>

Table B-1. Summary of Plastic Types, Characteristics, Sample, and Recyclability

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
 <p>1 PETE</p>	<p>Polyethylene Terephthalate (PET) Used with petroleum-based polymer and is commonly used for beverage packaging due to its properties, such as transparency, lightweight, a barrier to gas and water, impact strength, and un-breakability, among others.</p>	<p>Bottles and jars for water, detergent, juice, and food,</p>	<p>Can be recycled and reused as food storage (unless previously used for non-food); caution must be observed to avoid potential hazardous content contamination due to repeated use.</p>	
 <p>2 HDPE</p>	<p>High-Density Polyethylene (HDPE) Considered versatile (especially for packaging) and has a low risk of leaching. Has a higher density and is stronger than the LDPE and has strong chemical resistance, hence its use for storing a variety of chemicals.</p>	<p>Crates and boxes, bottles for milk, food products, detergents, cosmetics, food storage containers, chemicals, and pesticides.</p>	<p>Can be easily recycled into new items and is not recommended to be reused as food storage.</p>	
 <p>3 V</p>	<p>Polyvinyl Chloride (PVC) PVC is a tough material that is usually used for pipes and other equipment. Due to its affordability, this is also used as packaging for many types of products. PVCs are formed into either rigid, soft flexible, or liquid.</p>	<p>Clear jars and bottles for toiletries, food and medication cling film. PVC pipes and other industrial use.</p>	<p>Recycling is challenging due to the high chlorine content and other additives like plasticizers.</p>	

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
 <p>4 LDPE</p>	<p>Low-Density Polyethylene (LDPE) Lighter and more flexible than HDPE. Usually used for packaging or bags/containers (e.g., plastic labo), because of its thin nature/film and even liner of other types of materials.</p>	<p>Single-use lightweight bags, bags for frozen vegetables, bread, garbage and toilet paper, milk sachets, and shrink and stretch wrap.</p>	<p>Challenges in the collection and its lightweight nature make it less competitive in terms of recycling price.</p>	
 <p>5 PP</p>	<p>Polypropylene (PP) A versatile material that is easier to mold and has a high melting point making it suitable for holding hot liquid.</p>	<p>Yogurt and margarine tubs, ice cream containers, bottle tops, closures and clear, microwave dishes, single-use face masks, and metalized films for confectionery and sweets.</p>	<p>Recycling is difficult and expensive. In many cases, it's hard to get rid of the smell of the product this plastic contained in its first life. Usually ends up being black or grey, making it unsuitable for packaging and sometimes for recycling.</p>	

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
	<p>Polystyrene (PS) Commonly used for food packaging and protective and display packaging. It can be formed into rigid or foam products. PS is characterized as lightweight, good as an insulator, and resistant to heat.</p>	<p>Yogurt cups, clamshells, food trays for meat, fruit, and vegetables, and vending cups.</p>	<p>Can sometimes be recycled and is challenging to do so. This depends on the locality and the presence of infrastructure that does so. Recycled but only in small amounts, because it is difficult to do. Most flexible PS materials like plastic boxes, cutlery, and coffee cups are usually disposed of, but some are recycled and used as thermal insulation in buildings. Most of the rigid PS like CDs or other clear cases are also rarely recycled, while high-impact PS like plastic cabinets are not recycled.</p>	

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
	<p>Others A plastic type that does not fall into the six types is considered 'others'. There are multilayered plastics or those that have more than one type of plastic in one product or packaging.</p>	<p>In packaging, it could be multilayer materials for long-life products like sachets for sauces, juices, processed meats, and other food and non-food products.</p>	<p>Due to its nature, 'other' types of plastics have low market value for recycling since their type of plastic is usually unknown and cannot easily be recycled. The same applies to multilayered plastics, where recycling is challenging since the plastic composition does not have the same melting point.</p>	

Sources:

Plastics Federation of South Africa (2018). <https://www.plasticsinfo.co.za/wp-content/uploads/2019/10/All-About-Plastics-May2018.pdf>
 WWF Philippines (2020). https://wwf.org.ph/wp-content/uploads/2020/10/Panda-Talks_Plastics.pdf

Benyathiar, P.; Kumar, P.; Carpenter, G.; Brace, J.; Mishra, D.K. Polyethylene Terephthalate (PET) Bottle-to-Bottle Recycling for the Beverage Industry: A Review. *Polymers* 2022, 14, 2366. <https://doi.org/10.3390/polym14122366>




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Target Plastic Packaging under the law

The EPR scheme encourages waste reduction through the elimination of unnecessary packaging of products and the development of more environmentally friendly packaging designs. As recommended in the previous EPR study, the EPR scheme should be applied to **all household packaging of any material and as much as possible, service packaging and specific single-use plastic items**. On the other hand, this does not mean that other sources of waste should not be addressed; rather, giving more focus on the household level may improve and increase the rate of recovery of plastic packaging waste.

In addition to this, it is suggested that the types of plastic packaging to be covered in the EPR law will be formed into categories. In this way, the monitoring and reporting on the recovery, reuse, recycling, and reduction of the type of plastic packaging will be more structured/standardized. For reference, **Table B-2** shows the suggested categorization and the illustration of plastic packaging types.

Table B-2. Suggested Plastic Packaging Categorization

Category	Coverage	Sample Plastic Illustration
I	Sachets, labels, laminates, and other flexible packaging products, whether single-layer or multi-layered with plastics or other materials	 <p>https://www.industrialpackaging.com/hs-fs/hubfs/Blogging_Images/flexible-packaging-materials-bofu.jpg?width=600&name=flexible-packaging-materials-bofu.jpg</p>  <p>https://5.imimg.com/data5/SELLER/Default/2021/2/BA/WP/RQ/57468957/sun-plus-packaging-plastic-pouch-500x500.jpg</p>
II	Rigid plastic packaging (including containers for food, beverages, home, and personal care products, cosmetics, and their coverings, necessities, and labels).	 <p>https://www.asdreports.com/media/PR_29631.jpg</p>

Category	Coverage	Sample Plastic Illustration
		 <p>https://marketresearch.biz/wp-content/uploads/2019/02/rigid-plastic-packaging-market.jpg</p>
<p>III</p>	<p>Plastic bags/sheets (including SUP bags).</p>	 <p>https://recyclecoach.com/wp-content/uploads/2021/04/how-to-recycle-plastic-bags-600x600.png</p>
<p>IV</p>	<p>Polystyrene (such as flexible PS materials boxes, cutlery, and coffee cups).</p>	 <p>https://www.echotape.com/wp-content/uploads/2017/06/tapa-challenge-polystyrene-foam.jpg</p>