



Extended Producer Responsibility (EPR) Law of the Philippines: A White Paper

November 2022



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Executive Summary

This White Paper aims to highlight the importance of implementing an Extended Producer Responsibility (EPR) scheme that is inclusive, integrative, and impactful for reducing plastic pollution. In the Philippines, the EPR law emerged as a supplement and amendment to the existing law, Republic Act (RA) 9003, or the Ecological Solid Waste Management Act of 2000.

The EPR bill lapsed into law on 23 July 2022, now RA 11898, and after a series of nationwide public consultations, the Department of Environment and Natural Resources (DENR) drafted its implementing rules and regulations (IRR) as the lead agency for its implementation.

EPR is an environmental policy approach that encourages plastic waste reduction through (1) the elimination of unnecessary plastic packaging of products; (2) the development of more environmentally friendly and recyclable packaging design; and (3) the recovery of plastic packaging from the trash in order to reuse them or recycle them back into the production process.

In line with this and as a complement to the DENR public consultations, the World Wide Fund for Nature (WWF)-Philippines conducted workshops of its technical working group from among various sectors, i.e., large enterprises; micro, small, and medium enterprises (MSMEs); recyclers; local government units (LGUs); government agencies; academic institutions; social enterprises; non-government organizations (NGOs); and the informal waste sector (IWS). The project was made possible with the support of UNEP, the SEA circular Project funded by the Government of Sweden.

These workshops discussed what the various sectors hoped to see and monitored in the first year of implementation of the EPR law, such as:

- 1. The role of Producer Responsibility Organization (PRO) and stakeholders in the EPR system should be defined more to facilitate collaboration with and among obliged enterprises (OEs), LGUs, cooperatives, social enterprises, recycling industry, civil society organizations, the informal waste sector, academe (schools and universities), consumers, and the general public.**

Under the EPR law, the OEs are given three (3) choices on how to comply: (1) submit their EPR programs individually; (2) submit as a group of companies, i.e., as a Collective as when they carry the same brands or trademarks; or (3) join a PRO that will take care of submitting their EPR Program. After submission, then the real work begins. OEs are mandated to target a minimum of 20% recovery rate for the Year 2023.

The law also mandates the adoption of viable reduction rates for using plastic, which will be issued by the DENR.

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

The National Solid Waste Management Commission (NSWMC), together with the National Ecology Center (NEC), and Environmental Management Bureau (EMB), may issue coordinating rules and regulations with the other national government agencies (NGAs) to simplify the process for registration and compliance, and to create a database of OEs and their submitted EPR programs, baselines of plastic footprint, and yearly compliance.

This is important as the integrity of the EPR system rests on the reporting and audit. There should be clear standards for both.

- 3. Eco-modulation of EPR fees should be emphasized, and this should ensure support for improving the solid waste management system through eco-financing.**

Eco-modulation of EPR fees can be made an incentive to improve plastic packaging design. The goal is to eventually replace low-value plastic packaging with high-value plastic packaging, which has potentially lower EPR fees due to higher recyclability.

4. Investment should also include research and development, technology sharing, and reduction of plastic waste.

The NSWMC, together with the Department of Science and Technology (DOST), Bureau of Investments (BOI), Bureau of Internal Revenue (BIR), Bureau of Small and Medium Enterprises (BSMED), Cooperative Development Authority (CDA), academe, OEs, and social enterprises, may also issue coordinated plans of action to adopt fiscal and non-fiscal incentives, such as for research and development on alternatives to plastic, and investments in recycling and materials recovery technology and infrastructure.

There should be enough of these facilities located all over the Philippines to make them accessible and affordable. OEs and other manufacturers can start introducing a portion of recycled plastic material back into manufacturing and aim to use less virgin material and more recyclates, in addition to making their designs more environmentally sustainable.

5. Labelling is an important aspect to facilitate re-use, recycling, return to the manufacturer, and other means to circulate the material back into the system.

Together with the Department of Trade and Industry (DTI), Food and Drug Administration (FDA), and the recycling industry, the NSWMC may issue standards for plastic labeling and recycling instructions that are easy to see and follow by consumers, households, waste pickers, and recyclers.

6. EPR programs should be inclusive and be built on the existing solid waste management system.

The LGUs, through the Department of Interior and Local Government (DILG) and the Union of Local Authorities of the Philippines (ULAP), must ensure that the EPR law implementation is not just concentrated in urban areas or cities but all throughout the country. They can encourage their barangays to join and oversee compliance with plastic waste collection, segregation, recovery, transport, recycling, and proper disposal within their jurisdictions. They can continuously improve their waste management to encourage their constituents to participate as well.

The LGUs are also key to the integration of the IWS workers into the EPR circular economy and ensure that the benefits trickle down to the local communities. It is hoped that EPR is not only an environmental policy approach but also a human rights-based approach that looks after the welfare of the IWS and waste diverters, and also guards against gender discrimination, child labor, and other forms of discrimination in the workplace.

The law also mandates that the EPR scheme be taught in both formal and informal education. The academe, professionals (e.g., engineers, environmental planners, scientists, lawyers, etc.), NGOs, social enterprises, and other civic organizations (e.g., Rotary Club, churches, etc.) are central in engaging the general public to raise awareness about recycling and plastic segregation at source and in effecting behavioral change to reuse, reduce, and recycle plastics.

In sum, we hope to see the EPR system at work to attain the circularity of operations to reduce plastic pollution in the first year of implementation. We commend the authors of the law and the DENR for leading the drafting of the IRR in close consultation with the other NGAs and relevant stakeholders in the plastic value chain.

A Call to Action for All Stakeholders

The EPR scheme should be a balance of upstream and downstream solutions. We all have tasks to make this system work, and we call on all to participate in this journey of finding an inclusive, integrative, and impactful solution to reduce plastic waste pollution.

As the work on implementing the EPR system now begins, everyone is encouraged to join, because this is just the beginning of a long but worthy endeavor for our shared future.

ABCs of EPR (Key Terms, Concepts, and Definitions)

A	Alternative Delivery Systems (ADS) A management system or mechanism where consumers are encouraged to buy products using refillable containers or in other means without using SUPs and/or unnecessary packaging.
B	Bonus These are reduction in fees or discounts applied for packaging that has more recycled content and less virgin material in its formulation, use less material overall, have designs that further increases its viability for recycling, or have proof of compostability.
C	Collective Refers to a group of Obligated Enterprises that organized themselves, not as a PRO, to implement a common platform for the implementation of their EPR program.
E	Eco-modulation One of the means of encouraging OEs 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).
F	Fees The EPR fees are an important component of the EPR. They shall be collected by the PRO from the obliged companies. 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).
G	Government National Government Agencies (NGAs) are one of the important stakeholders in EPR implementation. Their roles vary depending on the office that they represent.
H	High-value plastics and High recyclability These plastics have high value for consumers and high recycling potential. High recyclability refers to a condition wherein the value of recovery and reprocessing of a product is high, due to its design, composition, content, and density, among other things.
	Human rights-based approach (HRBA) This approach focuses on those who are most marginalized, excluded, or discriminated against. In the EPR law, it ensures that the IWS and waste diverters are properly included and involved in the implementation process, and guard against gender discrimination, child labor, and other forms of discrimination.
I	Informal Waste Sector These are individuals engaged in services with the primary objective of generating employment and income for the individual concerned, and who typically operate with a low level of the organization without formal contractual arrangements. This may include individuals who are formally employed but engage in sideline activities to supplement income on top of formal employment.
J	Junk Shops These shops usually belong to the informal waste sector and are considered vulnerable sectors in the waste recovery chain. Junk shops are considered one of the important actors in ERP implementation because their contribution to recovery efforts is significant as long as there is an economic motivation for them to do so.

K	Kinds of Plastics Plastics are categorized into seven kinds marked with triangles (and sometimes three arrows) with numbers inside to indicate their type. The categories of plastics are (1) PET, (2) HDPE, (3) PVC, (4) LDPE, (5) PP, (6) PS, and (7) Others.
L	Low-Value Plastics These plastics have little to no value for consumers and little to no recycling potential. In the EPR law, the collection of low-value plastics will be increased by proving it with higher value.
M	Materials Recovery Facilities (MRFs) These are solid waste management facilities that include a solid waste transfer station or sorting station, a drop-off center, a composting facility, and a recycling facility.
N	National Solid Waste Management Commission (NSWMC) The NSWMC is the main government agency created to implement RA 9003 and is directly under the Office of the President. In the implementation of the EPR, together with the DENR, NSWMC will supervise and oversee the effective implementation of the EPR scheme, receive and audit data sent by the PRO, and monitor and evaluate compliance of the obliged companies and PROs with the registration of their EPR programs. The commission also maintains an EPR Registry that contains the registered EPR programs submitted by the obliged companies or PRO; and provides an assessment of the volume or footprint of other generated wastes, for priority inclusion in the EPR scheme.
O	Obligated Enterprises These are product producers that are required to implement an EPR program based on RA 11898.
P	Producer Responsibility Organization (PRO) This is the central element for the organization of all tasks associated with the EPR system. It allows producers and importers to assume responsibility by combining their efforts and jointly managing the arising waste through collective responsibility. The PRO is the most important stakeholder (organization) and is responsible for setting up, developing, and maintaining the system, as well as the take-back obligations of the OEs.
Q	Quality recycling An output is achieved after following a recycling standard and/or guideline usually set by the government or an international organization. The presence of high-quality recycled plastic resin could encourage brands to use recycled materials or increase recycled content in the packaging.
R	Reduction The practice of using less material and energy to minimize quantities of generated waste and preserve natural resources. It includes ways to prevent materials from becoming waste before they reach the recycling state. It also includes reusing products.
S	Segregation A solid waste management practice of separating different materials found in solid waste promotes the recycling and reuse of resources and reduces the volume of waste for collection and disposal.
T	Targets These are the reasonable and measurable endpoints of the sorting, recycling, and recovery of plastic wastes under the EPR implementation that needs to be met on a certain timeline.

U	Unnecessary Plastics These 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. In contrast, necessary plastics are otherwise considered to require alternatives before being removed, as they may cause significant behavioral or infrastructural change.
V	Virgin material These are materials that are sourced from new raw materials. A virgin plastic material means that the plastic resin is newly created and does not have any recyclates. In the EPR law, it is highly encouraged to use fewer virgin materials and more recyclates.
W	Waste management This is the storage, collection, transportation, and disposal of solid wastes. It is also described as a practice by which several waste management techniques are used to manage and dispose of specific components of solid waste. Waste management techniques include avoidance, reduction, reuse, recycling, recovery, and disposal.
X	Local context The EPR scheme varies from one country to another; hence, to increase the success rate of the new system, the EPR scheme for the Philippines was contextualized. This ensured that the EPR scheme would complement and be mainstreamed with the current solid waste management system in the country.
Y	You (consumers are essential to EPR) You and the rest of the stakeholders are important actors in the implementation of the EPR in the Philippines. The general public, in particular, is encouraged to be educated about correct practices and benefits of proper waste management; practice waste minimization; segregate at source; and participate in take-back schemes, deposit refund schemes, home composting, and other practices.
Z	Zero plastics in nature Zero or No Plastics in Nature Initiative is 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. Providing support to develop EPR policy here in the Philippines is one of the key areas of activities of WWF-Philippines.

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Acronyms and Abbreviations

BIR	Bureau of Internal Revenue
BOI	Bureau of Investments
BSMED	Bureau of Small and Medium Enterprises Development
CDA	Cooperative Development Authority
DA	Department of Agriculture
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG	Department of 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
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
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
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
ULAP	Union of Local Authorities of the Philippines
WACS	Waste Analysis and Characterization Study
WWF	World Wide Fund for Nature

List of Stakeholder Participants

This White Paper is not possible without the support of the following stakeholders throughout our series of dialogues and validation workshops:

- Alaska Milk Corporation
- Avon Products Manufacturing, Inc./ Avon Cosmetics, Inc.
- BizArchitecture Complex Systems Design
- Central Philippine University
- City Government of Makati
- City Government Parañaque
- Government of Quezon City
- Coca-Cola Beverages Philippines, Inc.
- Colgate-Palmolive Company Philippines, Inc.
- Dole Philippines, Inc.
- DENR-Environmental Management Bureau (EMB)
- DTI-Bureau of Small and Medium Enterprise Development (BSMED)
- Ecoloop
- Ecowaste Coalition
- Greenpeace–Philippines
- Metropolitan Manila Development Authority (MMDA)
- Mondelez International, Inc. Philippines
- Mother Earth Foundation (MEF)
- Nestlé Philippines, Inc.
- Oceana, Inc.
- Office of Senator Cynthia A. Villar
- Philippine Plastics Industry Association (PPIA)
- Philippine Reef and Rainforest Conservation Foundation, Inc. (PRRCFI)
- Plastic Bank Philippines
- Plastic Credit Exchange (PCX)
- Procter and Gamble Philippines, Inc.
- Pure Oceans
- Republic Cement & Building Materials, Inc.
- Sambayanan ng Muling Pagkabuhay Multi-Purpose Cooperative (SMP-MPC)
- San Jose Sico Landfill Multipurpose Cooperative, Batangas
- SYSU International Inc./ Javier, Santiago, Torres & Panghulan Law Offices
- The Plastic Flamingo Philippines, Inc. (PLAF)
- Unilever Philippines, Inc.
- UP Diliman Environmental Management Office (UP-DEMO)
- UP Diliman Institute for Small-Scale Industries (UP-ISSI)

1.0 INTRODUCTION TO EPR

1.1 State of Global and National Plastic Pollution

Plastic pollution has reached gigantic dimensions 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 is 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 1,230.63 Mt, where 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.

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 plastics (**Figure 1**).³

Further, for every dollar that producers pay for plastic, governments, and society will pay at least 10 times as much to 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

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/aaledf33-en/1/3/2/index.html?itemId=/content/publication/aaledf33-en&_csp_=ca738cf5d4f327be3b6fec4af9ce5d12&itemIGO=oecd&itemContentType=book

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

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

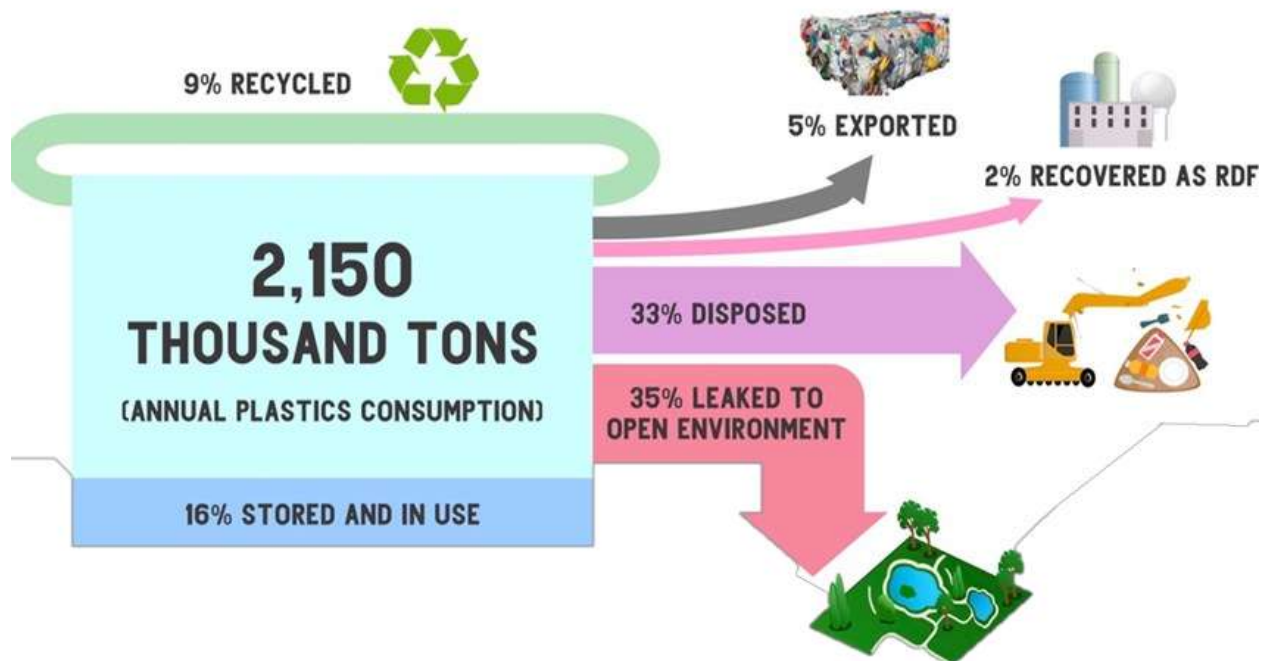


Figure 1. The flow of plastic materials in the Philippines in 2019 (WWF Philippines, Inc., cyclos GmbH, & AMH Philippines, Inc., 2020)

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 collected ending up in disposal sites or leaked into 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 be leaked into the environment.

These factors lead to identifying EPR as a policy tool in aiding the RA 9003 implementation and improving the waste management system.

1.2 State of Current Solid Waste Management of the Philippines vs the Planned System from RA 9003

The basic framework for regulations and operations on solid waste management is hinged upon RA 9003, or the Ecological Solid Waste Management Act of 2000. The National Solid Waste Management Commission (NSWMC) is the main government entity in charge of solid waste management policy-making and monitoring the implementation of laws and national and local SWM plans.

Under the Office of the President, the NSWMC's main duty is to prescribe policies to attain the objectives of RA 9003 and to oversee the overall implementation of the solid waste management plans and programs. The NSWMC is led by the Department of Environment and Natural Resources (DENR) and has fourteen government sectoral members and three private sectoral members. Representatives from the private sector consist of one member each from a non-governmental organization, the recycling industry, and the manufacturing and packaging industries.

LGUs, particularly cities and municipalities, are responsible for the RA 9003 implementation. They are tasked to prepare local SWM plans, draft waste reduction policies, manage the collection and disposal of various wastes within their jurisdiction, maintain materials recovery facilities (MRFs), and adopt revenue-generating measures to support local SWM.

Waste segregation and its disposal at landfills are under the jurisdiction of the city or municipality. Meanwhile, barangays are mandated to manage all waste segregation, sorting, recovery, recycling, and composting activities within their area. Cities and municipalities coordinate the activities of barangays within their jurisdiction. Provinces coordinate and integrate SWM plans and efforts of LGUs within the provincial boundaries (except for highly-urbanized cities). Along with national-level offices, provinces provide administration, legislation, and financial support.

The infrastructure and operationalization for solid waste management consist of segregation at source, collection, and disposal, among others. Considering that RA 9003 is more than 20 years old already, there are still challenges in meeting the targets set by the law and its frameworks.

Some LGUs have passed ordinances and started implementing plastics regulations since 2011. According to the NSWMC, as of 2019, 489 cities and municipalities (30% of all cities and municipalities in the country) have some form of policy to regulate the use of plastics, particularly plastic bags. However, the effectiveness of these initiatives is not yet assessed. All regions in the country except in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) have LGUs regulating plastics. 13 out of 17 LGUs in Metro Manila have plastic ordinances.

Table 1 shows the status of the Philippines in meeting the SWM targets.

Table 1. Status of Philippine SWM Targets and Actual Accomplishment

Items per RA 9003	Details by law	Target	Actual
Segregation at source	Waste should be segregated at source before collection	100%	53-100% Nationwide ⁵
Collection	Collection efficiency from residential, commercial, industrial, and agricultural sources	100%	40-85% Nationwide; ⁶ 85% Metro Manila ⁷
Use of SLF as the final disposal site	Open dump sites should be closed, and use sanitary landfill (SLF) instead	100%	403 open dumpsites and 108 controlled dumpsites in operation (2016) ⁷ 118 SLF with less than 15% access to LGU ⁷
Waste diversion rate and recovery	Activities which reduce or eliminate the amount of solid waste from waste disposal facilities	50%	48% Metro Manila; ⁷ 46% outside Metro Manila ⁶
MRFs	One MRF per barangay or cluster of barangays	100%	31.3% Nationwide ⁷
10-Year SWMP	Each LGU is required to prepare and have a 10-year SWMP approved	100%	1,592 plans submitted ⁷ 72.05% approved ⁸ 27.7% under evaluation ⁸ 0.25% no submission ⁸

Sources for the targets:

National Solid Waste Management Commission (2019).
<https://emb.gov.ph/wp-content/uploads/2019/08/National-Solid-Waste-Management-Status-Report-2008-2018.pdf>

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1.3 What EPR is

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.⁸

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 (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.

⁵ National Solid Waste Management Commission (2016).
<https://nswmc.emb.gov.ph/wp-content/uploads/2016/07/NSWM-Strategy-2012-2016.pdf>

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⁷ National Solid Waste Management Commission (2022). Solid Waste Database.
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⁸ EPR Scheme Assessment for Plastic Packaging Waste in the Philippines, WWF Philippines, October 2020.
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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.

2.0 ITEMS TO BE MONITORED IN YEAR 1 OF EPR IMPLEMENTATION

The EPR bill lapsed into law on 23 July 2022, now Republic Act 11898, and after a series of nationwide public consultations, the DENR drafted its implementing rules and regulations (IRR) as the lead agency for its implementation.

In line with this and as a complement to the DENR public consultations, WWF-Philippines conducted workshops of its technical working group from among various sectors, i.e., large enterprises, micro, small and medium enterprises (MSMEs), recyclers, local government units (LGUs), government agencies, academic institutions, social enterprises, non-government organizations (NGOs), and the informal waste sector (IWS).

These workshops discussed what the various sectors hoped to see and monitored in the first year of implementation of the EPR law, such as:

1. The role of PRO and stakeholders in the EPR system should be defined more to facilitate collaboration with and among OEs, LGUs, cooperatives, social enterprises, recycling industry, civil society organizations, the informal waste sector, and the general public;
2. A public registry and information data bank should be readily available for monitoring and guidance;
3. Eco-modulation of EPR fees should be emphasized, and this should ensure support for improving the solid waste management system through eco-financing;
4. Investment should also include research and development, technology sharing, and reduction of plastic waste;
5. Labeling is an important aspect to facilitate re-use, recycling, return to the manufacturer, and other means to circulate the material in the system; and
6. EPR programs should be inclusive and build on the existing solid waste management system.

3.0 DISCUSSION

The following subsections provide the salient points of the EPR Law, it is the draft IRR, the draft National Framework from the DENR, and a summary of recommendations from the workshops of the technical working group from among the various sectors.

3.1 The PRO and Stakeholders

The role of the Producer Responsibility Organization (PRO) and stakeholders in the EPR system should be defined more to facilitate collaboration with and among OEs, local government units (LGUs), cooperatives, social enterprises, recycling industry, civil society organizations, the informal waste sector, and the general public.

3.1.1 The Producer Responsibility Organization

The implementation of EPR Programs can be done by the OEs, the collective, or through the PRO. The composition of a PRO is not yet clearly defined in the IRR. Still, 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 to register, implement, monitor, and report the EPR Programs on their behalf. The PRO also organizes and finances all collection and treatment of the waste. This concept makes the PRO different from the collective obliged enterprises.

The recommended responsibilities of the PRO for the EPR are not limited to: (1) determination and calculation of EPR fees/eco-modulation of fees to be paid by all OEs; (2) collection and administration of the EPR fees while ensuring fair costs and therefore not harming the competitiveness of a participant; (3) providing support to LGUs in the operations of MRFs; (4) documentation of collection, sorting, and recycling of packaging waste; (5) conducting solid waste management-related information-education-communication (IEC) campaigns for the consumers; (6) register, monitor, and implement EPR programs with NSWMC; (7) report data to central platform or registry that will be developed by the NEC; and (8) being open to audits and having the reports open to the public for transparency and accountability.

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 boards, and advisory boards.

3.1.2 The Stakeholders

Aside from the PRO, 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. These stakeholders are the National Government, Government Agencies, Local Government Units (LGUs), OEs, waste collectors (including formal and informal waste sectors), recyclers and consolidators, academe (schools and universities), civil societies, and consumers.

The **National Government** is mainly responsible for EPR-related policies; support for stakeholders in the EPR scheme through fiscal and non-fiscal incentives; and investment in necessary infrastructure and research and development on plastics. The NSWMC, together with the Department of Science and Technology (DOST), Bureau of Investments (BOI), Bureau of Internal Revenue (BIR), Bureau of Small and Medium Enterprises (BSMED), Cooperative Development Authority (CDA), and other government agencies, may issue coordinated plans of action to effect these policies.

The **Government Agencies** include, but are not limited to, the DENR, NSWMC, NEC, DTI, FDA, DepEd, DOST, and the Philippine Information Agency (PIA). Together, they work with other stakeholders to implement the EPR, such as the supervision, formulation of necessary standards (for pricing, labeling, reporting, etc.), processes for registration, database creation, and IEC campaigns, among others. They should also ensure that EPR programs are not concentrated in urban areas/cities but are implemented throughout the country.

The **LGUs** (including the barangays and the Provincial Government) will oversee compliance with plastic waste collection, segregation, recovery, transport, recycling, and disposal within their jurisdiction. They can develop policies that will further improve the implementation of the EPR of the OEs within their jurisdiction. They shall continuously improve their waste management and planning systems and make means to encourage their constituents to participate in the EPR law.

The **waste collectors** can serve as the link and ensure that each component of the waste stream reaches its intended recipient and does not leak into the environment. In the EPR, MRF operators buy material from the informal sector but sell only to formal recycling companies. Meanwhile, the **recyclers and consolidators** are expected to collect recyclables and recovered materials to be transformed into

new products; partner with the OEs, or collective; and must comply with government standards to ensure high-quality recycling.

The role of the **academe** is to promote solid waste management education, and raise awareness and continuous development of scientific, social, and economic research and approaches to addressing plastic waste. **Civil societies**, on the other hand, can maintain an active role in plastic waste management to supplement the efforts of the national and local governments and assist in the integration of the informal waste sector.

Finally, the **consumers** are needed to be educated about the correct practices and benefits of proper waste management, and how to practice waste minimization, segregate their wastes at source (household), and participate in take-back schemes, deposit refund schemes, home composting, and other practices.

3.1.3 Micro, Small, and Medium Enterprises (MSME)⁹

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 obliged enterprises. This group accounts for 99.58% of the business establishments in the country¹⁰ 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 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.

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 suggests 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.

In addition, the UP Institute of Small Scale Industries (UP ISSI) agrees that the EPR law is a step in the right direction to manage and reduce plastic waste in the country. While the law only enjoins the voluntary participation of the MSMEs, the law already recognizes their potential contribution, considering their number and the manpower they employ. As it is, some of the MSMEs are already taking action to reduce plastic waste, such as by shifting to alternative packaging.

⁹ WWF-Philippines (2022). Interview meeting with DTI-BSMED on 11 October 2022.

¹⁰ Philippine Statistics Authority (2021), as mentioned by DTI-BSMED during their interview meeting with WWF on 11 October 2022.

As part of the academe, UP ISSI recognizes its role in the implementation of the EPR law, particularly in information and education campaigns (IECs) and research and development (R&D). They join in the hope that the first year of implementation will have full IECs for MSMEs, and for the youth and adult consumers, and that R&D will not only be limited to developing alternative packaging but also look into consumer practices and industry best practices that can contribute to the rollout of the EPR law.

3.1.4 Informal Waste Sector

The informal waste sector (IWS) is small-scale, labor-intensive, unregulated, and unregistered.¹¹ 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. 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 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 to be 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.

If economic incentives can also be made available to recycling companies and converters for them to invest in technology that can recycle or recover value from these low-value plastics, not only will this provide motivation to increase the collection of low-value plastics, but the informal waste pickers and small junk shops who often come from low-income groups will have additional revenue.

3.2 EPR Programs, Monitoring, and Reporting

EPR programs should be inclusive and be built on the existing solid waste management system.

The formulation of the EPR Programs should consider the proposed EPR implementation scheme/framework. 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;

¹¹ Wilson, D., Whiteman, A., Tormin, A. (2001). *Strategic Planning Guide for Municipal Solid Waste Management*. Washington, DC: World Bank.

- 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.

To assist the OEs, 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.

In the case of MSMEs that want to participate voluntarily, they can reach out to the DTI-BSMED to be eligible to receive assistance (e.g., through Negosyo Centers, DTI Regional and Provincial Offices). They must first register the business name with DTI/SEC and secure the necessary permits from the barangay, city/municipality, and BIR.¹²

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 and their 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.

The LGUs, through the Department of Interior and Local Government (DILG) and the Union of Local Authorities of the Philippines (ULAP), can spearhead the spread of the EPR to reach every barangay, all throughout the Philippines. The EPR law implementation should not just be concentrated in urban areas or cities but also reach all the islands of the archipelago. They can perhaps start with prototypes and replicate them nationwide, covering plastic waste collection, segregation, recovery, transport, recycling, and proper disposal. They can continuously improve their waste management to encourage their constituents to participate as well.

3.3 Plastics and Other Waste Products

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 see 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.

¹² 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.

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.

3.4 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.

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

3.4.1 Target Plastic Footprint Recovery

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 sector, 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, the 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 mentioned previously, the law only mentioned ‘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 reporting on the recovery of the plastic product footprint shall be presented using these three categories.

A working baseline value on the existing plastic packaging volume of the OEs is needed and shall be reported the first time the obliged enterprise has registered to 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.

3.4.2 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 2013 updated RIC symbol in their products (i.e., triangle and not the three arrows). 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 some need to be disposed of. This information should also be put into the plastic packaging and each component to aid the consumers 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.

3.5 Collaboration with LGUs, Cooperatives, and Informal Waste Sector

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 partnership 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 other civic organizations (e.g., Rotary Club, churches, etc.).

A partnership shall be used for collecting and management of 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.

3.6 Fees and Financing

The 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. 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 has set 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 like 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, on the other hand, is one of the means to encourage producers to transition into more sustainable and environmentally friendly product development by incentivizing (like reduction of EPR tax/fees) the use of recyclable packaging and penalizing those that do not (malus or increase of EPR tax or fees). Eco-modulation of EPR fees should be emphasized, and this should ensure support for improving the solid waste management system through eco-financing.

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 **Annex B, Table B-1**). 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. A sample of EPR fees on different packaging types from Citeo (France) is provided in **Annex B, Figure B-1**.

In terms of incentives, the law has already provided and identified means by which LGUs, enterprises, or private entities, including OEs, PROs, and NGOs, will benefit from joining the EPR implementation. This means that the incentives provided by the law are not limited to the OEs and the PRO. As long as the MSMEs are registered, they can be covered by the incentives once they participate in the EPR implementation. Further, they can also apply for benefits under Tier II of SIPP (i.e., green ecosystems).

3.7 Investment and Infrastructure

Investment should also include research and development, technology sharing, and reduction of plastic waste.

The National Government should invest in the waste management facilities needed to implement the EPR Act. 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 needs 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.

3.8 Research and Development, and Technology sharing

There is a need for continuous research and development of better packaging products and means to process them, thereby making packaging design more environmentally sustainable or eco-design.

Eco-design shall be considered by the manufacturers and OEs as one of the main factors of the EPR to:

- conserve raw materials;
- use of recyclates (critical to close the loop in a circular economy); and
- design of 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. OEs may investigate through research and development (R&D) to eventually replace low-value plastic packaging with high-value plastic packaging, which has potentially lower EPR fees than the former.

As mentioned previously, the academe can support R&D. Currently, there are existing fabrication laboratories at the University of the Philippines Diliman, DOST, 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.

3.9 Registry and Information

A public registry and information data bank should be readily available for monitoring and guidance. The NEC is expected to develop the EPR Registry, and it should contain an integrated database of existing EPR programs and solid waste management. It should also ensure that EPR programs are not concentrated in urban areas but are implemented throughout the country.

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. The work on implementing this law now begins.

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 call and challenge the OEs to integrate upstream solutions in the EPR programs that they will be submitting to the National Ecology Center (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 Local Government Units (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 who 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.

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

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

Plastic pollution is a systems problem that requires a holistic approach that addresses 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.

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.¹³ Further information on how WWF helps in addressing plastics pollution can be seen in this link <https://wwf.org.ph/what-we-do/plastics/>.

¹³<https://wwf.org.ph/what-we-do/plastics/wwf-continues-its-work-on-extended-producer-responsibility-with-unep-sea-circular/>

ANNEXES

ANNEX A: 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 symbol¹⁴ from the three arrows into a triangle.

Table A-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.

¹⁴ <https://www.plasticsnews.com/article/20130611/NEWS/130619978/say-so-long-to-recycling-code-arrows>

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

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
 1 PETE	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.	Bottles and jars for water, detergent, juice, and food.	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.	
 2 HDPE	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.	Crates and boxes, bottles for milk, food products, detergents, cosmetics, food storage containers, chemicals, and pesticides.	Can be easily recycled into new items and is not recommended to be reused as food storage.	
 3 V	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.	Clear jars and bottles for toiletries, food and medication cling film. PVC pipes and other industrial use.	Recycling is challenging due to the high chlorine content and other additives like plasticizers.	
 4 LDPE	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.	Single-use lightweight bags, bags for frozen vegetables, bread, garbage and toilet paper, milk sachets, and shrink and stretch wrap.	Challenges in the collection and its lightweight nature make it less competitive in terms of recycling price.	

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
	Polypropylene (PP) A versatile material that is easier to mold and has a high melting point making it suitable for holding hot liquid.	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.	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 can sometimes be recycled.	
	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.	Yogurt cups, clamshells, food trays for meat, fruit, and vegetables, and vending cups.	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.	

Resin Identification Code	Polymer Type and Characteristics	Products	Recyclability	Illustration
	Others A plastic type that does not fall into the six types are considered 'others'. There are multilayered plastics or those that have more than one type of plastic in one product or packaging.	In packaging, it can be multilayer materials for long-life products like sachets for sauces, juices, processed meats, and other food and non-food products.	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.	

Sources:

Plastics Federation of South Africa (2018). <https://www.plasticsinfo.co.za/wp-content/uploads/2019/10/All-About-Plastics-May2018.pdf>
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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 but rather, giving more focus on the household level may improve and increase the rate of recovery of plastic packaging wastes.

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 A-2** shows the suggested categorization and the illustration of plastic packaging types.

Table A-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	 https://www.industrialpackaging.com/hs-fs/hubs/Blogging/Images/flexible-packaging-materials-bofu.jpg?width=600&name=flexible-packaging-materials-bofu.jpg  https://5.imimg.com/data5/SELLER/Default/2021/2/BA/WP/RQ/57468957/sun-plus-packaging-plastic-pouch-500x500.jpg
II	Rigid plastic packaging (including containers for food, beverages, home, and personal care products, cosmetics, and their coverings, necessities and labels)	 https://www.ascreports.com/media/PR_29631.jpg

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

Target Plastic Recovery Rate

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 sector, it was raised that it “is unclear if ‘plastic footprint’ covers plastic sales volume or if it includes all manufactured and imported products.” In this regard, the recovery of plastic product footprint shall be categorized into three to meet the targets further:

- **Target reduction of unrecyclable and unnecessary 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.
- **Target increase in 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.
- **Target increase in 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 reporting on the recovery of the plastic product footprint shall be presented using these three categories.

The target percentage and timeline for meeting these can be adopted from what was already provided in the law but with a certain adjustment. The implementation of the **recovery of plastic product footprint** shall be adjusted to the following, by category:

- 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%).

With this adjustment, the first year after the lapse of the law shall be used as the *adjustment phase* of the OEs, LGUs, recycling companies, waste management sectors, and other related stakeholders, which shall include filling the knowledge and capacity gap of the various entities and create necessary infrastructures in order to meet the targets in the coming years.

In terms of target recovery percentage, 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 A-3**.

Table A-3. 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 liter or kg but less than 4.9 litres or kg, as the case may be	10	15	20	25
B. Rigid plastic packaging with volume of weight equal or more than 4.9 litres or kg	70	75	80	85

Note: Category I (rigid plastic packaging); Category II (flexible plastic packaging of 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 sheets 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>

Finally, 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.

A working baseline value on the existing plastic packaging volume of the OEs is needed and shall be reported the first time the obliged enterprise has registered to 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.

The calculation for the baseline value, by plastic category, shall be standardized and unified. Thereby, the following formula shall be implemented:

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

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

ANNEX B: Fees and Financing

Table B-1. 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 which have PP caps and PVC labels, each component shall be assessed individually and shall be charged their corresponding basic fees.
Bonus	These are reduction 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 increases 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.
Eco-modulated Total Fee	This corresponds to the total fee that is paid per material once all applicable bonuses and maluses are applied to the basic fee. Total Fee = Basic Fee × (100% - Bonus) × (100% + Malus)

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)	61.35 € 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 B-1. Sample EPR Fees for different Packaging