VERRA

Plastic Waste Reduction Standard

DISCUSSION PAPER

PLASTIC CREDITS AND EXTENDED PRODUCER RESPONSIBILITY

This discussion paper outlines the potential of Plastic Credits from Verra's Plastic Waste Reduction Standard Program to serve as an innovative financial instrument and to support the implementation of high-functioning Extended Producer Responsibility (EPR) systems in emerging markets and developing economies.

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ABOUT THIS PAPER

The findings and recommendations in this paper are based on a comprehensive literature review, supplemented by interviews with a diverse group of stakeholders. These include international policy and subject-matter experts, national policymakers, and grassroots plastic collection and recycling operators—such as representatives from the informal sector and waste pickers—as well as leading consumer packaged goods companies. While this paper reflects insights gathered from expert interviews, **not all contributing organizations necessarily endorse every aspect of its content**.

The global extended producer responsibility (EPR) landscape is evolving rapidly. The six countries featured as case studies in this report are advancing their EPR regulations and implementation at different paces. The findings should not be interpreted as prescriptive guidance for any specific country but rather as a **broad characterization of potential approaches** that nations may consider as they develop, implement, and refine their EPR systems. These insights represent a snapshot in time and may evolve as policies and market dynamics shift.

Verra views this paper as a foundation for **deeper, country-specific engagement with local stakeholders**. We welcome feedback and opportunities for collaboration to further refine insights and develop tailored recommendations.

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EXECUTIVE SUMMARY

Despite continued efforts to reduce dependence on plastics, its demand is projected to grow by 30% over the next 25 years. Plastic waste is projected to triple to 1.3 billion tonnes by 2060. This threatens the health of ecosystems, economies, and communities worldwide.

Plastic pollution is complex and requires a mix of interventions, including significant investments in waste management and recycling infrastructure, as well as regulatory and data management systems, particularly in emerging market and developing economy contexts. Although there are examples of functioning waste management systems with full cost recovery models in mature economies, there is a lack of locally appropriate examples that emerging market and developing economies can learn from or replicate.

Extended producer responsibility (EPR) is a policy approach that can address plastic pollution when well-designed and implemented in a context-appropriate manner. It holds producers responsible for the environmental impacts of their products and aims to shift the cost and responsibility of waste management from local governments to producers.

The implementation of effective EPR occurs over a development trajectory that is unique to each country. However, there are typical phases that most countries go through:

- **Phase I: Initiation—exploration of EPR**: This phase comprises initial exploration of EPR as a viable policy tool within a country. It focuses on putting EPR on the political agenda and paving the way for binding legislation.
- **Phase II: Transition—moving towards mandatory EPR**: The transition phase is marked by ongoing efforts to establish a legally binding and enforceable regulatory framework that is appropriately adapted to the national context.
- **Phase III: Maturity—effective and efficient EPR**: The EPR system has been implemented as a mandatory measure, based on clearly defined and enforceable regulations. This phase is marked by continual monitoring and adaptation to improve performance, increase efficiencies, and enhance accountability.

Graduation from one phase to the next involves progress in numerous overlapping factors. Therefore, the change does not occur at a single moment in time but is a gradual, and often non-linear process.

Effective implementation of EPR in emerging markets and developing economies faces the following common challenges:

- The solid waste management sector is nascent and often requires extensive development.
- Instituting the legal, regulatory, and administrative requirements for implementing EPR is resource-intensive for governments.
- There is a substantial deficit in funding for infrastructure.
- EPR implementation often does not include the informal sector, which is a significant contributor to existing systems.

It can take 10–20 years or more for an EPR system to reach its maturity. To ensure EPR effectively and promptly meets its objectives, it must be a part of, or work in tandem with, other policies and innovative financial instruments.

Plastic Credits generated under Verra's Plastic Waste Reduction Program can serve as a complementary and innovative financial tool to scale up plastic waste management and support the development of an inclusive, high-functioning EPR system. Verra's Plastic Waste Reduction Program (Plastic Program) is underpinned by a globally applicable measurement framework, rigorous requirements, robust social and environmental safeguards, and mandatory third-party audits. Plastic Credits can be tracked on a transparent registry that is publicly accessible.

This discussion paper explores the key benefits that Plastic Credits could bring to EPR development in six different national contexts (Ghana and Indonesia, Phase I Initiation; Kenya and Viet Nam, Phase II Transition; and Chile and the Netherlands, Phase III Maturity). These case studies illustrate how Plastic Credits generated by projects under the Plastic Program can support and eventually integrate with EPR systems to improve EPR effectiveness in various phases of implementation,

especially in emerging markets and developing economies.

The three key elements of effective EPR systems—administration, finance, and operations —can benefit from the integration of Plastic Credits in the following ways:

- **Strengthening Administration**: Use of the program infrastructure associated with Plastic Credits can support governments and producers in adopting transparent monitoring, reporting, and verification frameworks. These tools enhance accountability, streamline compliance processes, and promote best practices.
- **Enabling Finance**: Plastic Credits help mobilize resources from voluntary and regulatory channels to address significant funding gaps in waste management infrastructure. They provide a results-based mechanism to attract and align investments from various sources and ensure the efficient use of financial contributions towards high-quality projects.
- **Boosting Operations:** By certifying projects with the Plastic Program, waste management operators can demonstrate adherence to social and environmental safeguards while showcasing best practices for operational due diligence and impact measurement. Plastic Credits can also incentivize innovation in collection and recycling practices, benefiting underserved areas and material streams.

The benefits of leveraging Plastic Credits for key elements of EPR systems vary across the different phases of EPR implementation.

In the initiation phase, the case studies show that there tends to be a lack of reliable data and administrative capacity to track and monitor progress. The collection and recycling infrastructure is underdeveloped, and there are no clear financing mandates or mechanisms. Entities generating Plastic Credits exemplify operating in line with environmental and social safeguards and incorporating robust monitoring and verification procedures in plastic waste collection and recycling activities. Integration of Plastic Credits is most impactful in strengthening administration while relieving government's administrative burden in this phase.

In the transition phase, the key objective of all system actors is to accelerate the achievement of tangible results. However, the legal and operational framework tends to be fragmented. Significant funding gaps remain due to the lack of compliance and low confidence level in the distribution of funds. And shortcomings in existing waste management infrastructure remain. Plastic Credits can be leveraged to ensure financial contributions are results-based, to verify participation within the system, and to reduce regulatory burdens while strengthening transparency and accountability across the value chain. Integration of Plastic Credits is most impactful in enabling finance in this phase.

In the mature phase, EPR is dynamic and requires continual monitoring and adaptation to improve performance. Non-compliance may still exist, and recycling rates and coverage of different material types can still be improved. Plastic Credits offer an opportunity to support all system actors in driving the innovation necessary to continually improve system performance and efficiency. System actors can leverage the broad scope of activities covered by the Plastic Program to target new material streams, improve collection systems in underserved areas, and promote new recycling technologies. Integration of Plastic Credits is most impactful in boosting operations in this phase.

The integration of Plastic Credits into EPR systems offers potential benefits to major system actors: producers, governments, and waste management operators. And these benefits may change over time in connection with the maturing EPR system's priorities.

Initially, producers are best positioned to benefit from the incorporation of Plastic Credits, which sets the baseline for best practice and allows producers to advocate for effective governance systems. Over time, governments move into an EPR leadership role with clear aims of mobilizing finance, codifying governance structures, and promoting equitable access. In an EPR system's most mature phase, a strong sense of shared responsibility is demonstrated across actors with a common commitment to continually drive innovation and operational improvements.

Integrating Plastic Credits into EPR systems can help mobilize finance for socially and environmentally responsible projects with verified impact while reducing administrative burdens through Verra's robust monitoring, reporting and verification frameworks. By aligning the efforts of producers, governments, and waste operators, Plastic Credits can strengthen system performance and support the transition to a more effective, inclusive, and financially sustainable waste management system.

CHAPTER 1: INTRODUCTION

Plastic waste accounted for nearly 20% of all global waste generated in 2020. Despite decades of efforts to reduce dependence on plastics, demand is projected to grow by 30% over the next 25 years (OECD 2022). Plastic waste is projected to triple from 460 million tonnes in 2019 to 1.3 billion tonnes in 2060, threatening the health of ecosystems, economies, and communities worldwide (OECD 2022). Poor management of this waste has led to widespread plastic pollution.

In recognition of this challenge, the international community has come together in a landmark agreement to develop an international legally binding instrument to end plastic pollution, including in the marine environment (UNEP 2024). The agreement has broad global support from governments, as well as actors across the plastics value chain, as well as academia and non-governmental organizations (NGOs). As countries prepare to resume talks to reach a consensus on the legally binding instrument at INC 5.2 in Geneva in August 2025, it is clear that a suite of interventions will be required to fully address the scale and breadth of environmental and human health challenges associated with plastic pollution.

We must continue to prioritize a full life cycle approach—one that includes upstream interventions that promote reduction and reuse, alongside downstream measures. Efforts to collect, recover, and transform plastic waste into valuable resources are essential to advancing a circular plastics economy. Rapid and significant scaling of collection, sorting, recycling, and safe disposal of plastic waste is needed to end plastic pollution. Improvements are needed across the entire solid waste management system, which requires significant additional investment.

International policymakers are currently exploring implementation of extended producer responsibility (EPR) in all markets (UNEP/PP/INC.5/4) as a necessary means to provide dedicated, ongoing, and sufficient financing for sustainable waste management. EPR holds producers responsible for the environmental impacts of their products and aims to shift the cost and responsibility of waste management from local governments to producers. It is a performance-based instrument in which financing is directly tied to the achievement of specific outcomes and objectives (Ellen MacArthur Foundation 2021). The OECD (2024) characterizes EPR as "a group of economic instruments that raise revenues and set incentives for the collection and recovery of material at the post-consumer stage of the product lifecycle." Since its introduction in Germany in the 1990s (Der Grüne Punkt 2024), EPR has been rapidly adopted, particularly in developed economies, and is often considered a best practice for financing and operating solid waste management systems (Ellen MacArthur Foundation 2021; Prevent Waste Alliance 2021). Global interest has grown rapidly over the past two decades (OECD 2024; Ellen MacArthur Foundation 2021). Nearly 400 EPR programs exist globally, covering numerous product types. Each is underpinned by different policies and system configurations. Approximately 45 policy-backed, mandatory, fee-based EPR mechanisms exist for plastic packaging worldwide, with further adoption expected (Ellen MacArthur Foundation 2021).

Well-designed EPR is considered a powerful tool to connect upstream and downstream objectives. However, not all governments start with the same foundation. Nearly half of the world's population lacks access to comprehensive waste collection services (UNEP 2024). Lack of infrastructure, funding, and governance structures are some of the factors that make the introduction of effective EPR systems challenging in certain regions.

1.1 Key Challenges to Implementing Effective EPR in Emerging Markets and Developing Economies

Estimates suggest that transitioning to a circular plastics economy could cost between USD 60 billion and USD 255 billion annually by 2050 (Pew Charitable Trusts and SYSTEMIQ 2020; UNEP 2024). Yet, many of the regions most in need of investment are also grappling with the economic fallout of COVID-19, energy crises, rising inflation, debt burdens, and weakening currencies, which further constrain public budgets (World Bank 2024a).

Municipalities in emerging economies face significant financing challenges, with waste management costs

consuming an average of 19% of municipal budgets, compared to just 4% in high-income countries (World Bank 2018). These costs often compete with other pressing social and economic needs, resulting in chronic underinvestment in waste infrastructure.

Despite strong demand, 90% of circularity investments from 2018–2023 went to North America and Europe, where lower market risks and more favorable policy environments make such investments more attractive (The Circulate Initiative 2023). The disparity in per capita capital assets for waste infrastructure between developed and developing economies remains a critical barrier (UNEP 2024; World Bank 2021a).

These structural financing gaps intersect with several other challenges that make implementing effective EPR systems particularly challenging in emerging markets and developing economies. The following section outlines four key challenges that must be addressed to enable scalable and inclusive EPR implementation.

THE SOLID WASTE MANAGEMENT SECTOR IS NASCENT AND OFTEN REQUIRES EXTENSIVE DEVELOPMENT.

Waste management systems in emerging markets and developing economies are often not well-established. Important stakeholders such as manufacturers, producer responsibility organizations (PROs), municipalities, and recyclers, which play significant roles in EPR, are not always engaged at this stage (Akenji et al. 2011). Often, the policy and regulatory structures that EPR relies on, such as systems for tracking compliance and frameworks for regular monitoring and reporting of impacts, are absent or nascent. This is often overlooked when designing and implementing EPR in emerging markets and developing economies.

INSTITUTING THE LEGAL, REGULATORY, AND ADMINISTRATIVE REQUIREMENTS TO IMPLEMENT EPR IS RESOURCE-INTENSIVE FOR GOVERNMENTS.

EPR is not just a market-based instrument reliant on industry leadership, its success is also dependent on significant operational, administrative, and enforcement capacity to ensure that governments can partner with and oversee regulated producers (OECD 2024). However, capacity-building interventions are complex and resource-intensive and often rely on limited and inconsistent development aid.

THERE IS A SUBSTANTIAL DEFICIT IN INFRASTRUCTURE FUNDING REQUIRED FOR EPR IMPLEMENTATION.

Solid waste management is one of many competing financial demands on governments of emerging markets and developing economies. These governments must also mobilize resources for basic services such as universal housing, health care, education, clean water, affordable food, and security. As such, municipal and national solid waste management budgets often experience shortfalls and are largely unpredictable (World Bank 2021). This can lead to volatility in public financing for infrastructure, creating uncertainty that hinders efforts to attract much-needed private capital for waste management development. The risk of non-compliance by free riders, particularly in the early stages of EPR implementation, further discourages private sector investment by undermining market stability and fairness.

IMPLEMENTATION OF EPR IS OFTEN NOT INCLUSIVE OF THE INFORMAL SECTOR, WHICH IS A SIGNIFICANT CONTRIBUTOR TO EXISTING WASTE MANAGEMENT SYSTEMS.

Implementing EPR in emerging markets and developing economies in an inclusive and just manner must support key actors who have traditionally driven most of the global recycling market—informal workers and waste pickers (UNEP 2024; OECD 2024; PREVENT Waste Alliance 2024; Cass Talbott et al. 2022; Ellen MacArthur Foundation 2021). The collection of recyclable material in emerging markets and developing economies depends heavily on the informal sector. An estimated 20 million informal waste workers are engaged in recycling globally. They play a critical role in providing waste services and are quite effective in collecting material of economic value. However, informal waste workers generally belong to marginalized groups, including migrants, women, youth, and the unemployed, disabled, and elderly. They provide fundamental environmental services, often with externalized costs to their health, safety, security, dignity, and livelihoods. They are often deprived of access to sustainable income sources and basic social services (UNEP 2022; Cass Talbott et al. 2022; OECD 2016). Countries have struggled to effectively and equitably include informal workers and waste pickers in newly introduced EPR systems (Cass Talbott et al. 2022).

These challenges demonstrate the immediate need for innovative financial instruments that can mobilize finance and provide much-needed investment stability in traditionally volatile markets. They also underscore the importance of regulatory and administrative frameworks that governments can use to promote plastic waste management activities and improve waste management infrastructure. This discussion paper outlines the potential of Plastic Credits from Verra's Plastic Waste Reduction Program (Plastic Program) to act as an innovative financial instrument, as well as a monitoring and verification framework to support implementation of high-functioning EPR systems. Six country case studies are used to explore the role that Plastic Credits can play in the different phases of EPR development. Recommendations are provided for main stakeholder groups.

CHAPTER 2: VERRA'S PLASTIC PROGRAM AND PLASTIC CREDITS

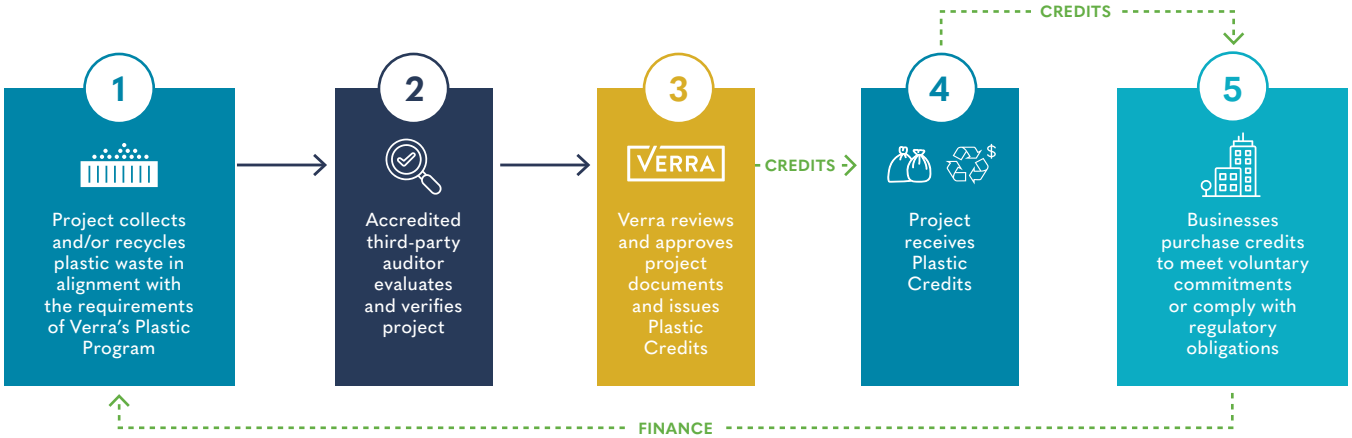
2.1 Introduction to Plastic Credits

Verra's Plastic Waste Reduction Program establishes a framework for measuring and verifying plastic waste collection and recycling impacts. It includes environmental and social safeguards that can address potential health risks and facilitate additional social benefits. The Plastic Program covers a broad range of important activities, such as waste recovery from the environment, the creation of waste collection infrastructure, and the development of new and scaled-up recycling facilities. There are two types of credits issued under the Plastic Program—Waste Collection Credits and Waste Recycling Credits, referred to collectively in this paper as Plastic Credits (Figure 1).

Figure 1: Waste Collection Credits (WCCs) and Waste Recycling Credits (WRCs)

Projects certified with the Plastic Program generate Plastic Credits after being audited by a third party to demonstrate conformance to the Plastic Waste Reduction Standard (Figure 2). Plastic Credits are a results-based innovative financial instrument that allows entities to make downstream investments in new or expanded plastic waste collection and recycling activities and infrastructure. The purchase of a Plastic Credit channels finance back to the project, allowing it to scale its impact.

Figure 2. Overview of Plastic Credit Generation Process



2.2 An Independent, Modular, and Adaptable System

The Plastic Program is underpinned by a globally applicable framework, which allows for consistent monitoring and measurement of various activities in different local and regional contexts. The program has various key modules that can be integrated into existing and emerging EPR policies.

2.2.1 ESTABLISHED STANDARD AND METHODOLOGIES

The Plastic Waste Reduction Standard (**Plastic Standard**) sets important requirements for stakeholder engagement, social and environmental safeguards, and third-party validation and verification. The two supporting methodologies—the **Plastic Waste Collection Methodology** and **Plastic Waste Recycling Methodology**—provide activity-specific eligibility, measurement, and monitoring criteria for plastic waste collection and recycling activities.

The standard and methodologies facilitate uniform measurement, monitoring, accounting, and reporting of plastic waste collection and recycling outcomes by projects around the world.

2.2.2 STAKEHOLDER ENGAGEMENT AND SOCIAL AND ENVIRONMENTAL SAFEGUARDS

The Plastic Program's requirements around stakeholder engagement support inclusion of the informal sector.

The stakeholder engagement requirements mandate that project proponents must identify potentially impacted stakeholders, with special emphasis on vulnerable and marginalized groups such as waste workers. Identified stakeholders must be consulted and engaged throughout the project's design and implementation process.

Social and environmental safeguards are also essential elements of the Plastic Program. Project proponents must:

- mitigate any negative health or safety risks that could result from the project activity through, for example, training and the provision of personal protective equipment.
- seek to prevent income displacement resulting from the introduction of the activity.
- take measures to prevent forced or child labor in the project.
- pay those involved in the project regionally prevailing wages.
- identify and mitigate any direct negative impacts of the project on air, water, and soil quality, and biodiversity and ecosystem health.

2.2.3 THIRD-PARTY AUDIT

Independent third-party audits are mandated by the Plastic Program. Accredited auditors validate projects and verify reported impacts, making sure that activities are implemented in compliance with the program's requirements.

2.2.4 PUBLIC DIGITAL REGISTRY

Plastic Credits are listed on the Verra Registry, which enables the public listing, transfer, and retirement of all issued Plastic Credits in a transparent manner. Each Plastic Credit includes a serial number that uniquely identifies the activity type, the material type, and the end destination of the plastic waste, where relevant.

To date, more than 70 projects in 34 countries have registered with or are in the process of registering with Verra's Plastic Program. Various governments that are designing or implementing EPR systems have expressed interest in exploring the role of Plastic Credits within their EPR implementation.

CHAPTER 3: THE THREE PHASES OF EPR IMPLEMENTATION

As more countries work to adapt EPR principles and frameworks to fit local legislative and social contexts, a variety of implementation scenarios have emerged, offering valuable insights for other countries and practitioners. The World Bank has provided a framework for assessing common challenges and opportunities across three phases of EPR implementation and operationalization (World Bank 2022): initiation, transition, and maturity.

Phase I: Initiation—exploration of EPR

Initial exploration of EPR as a viable tool within a country can take from less than two years to more than ten years, often depending on the political climate and familiarity with EPR across public institutions and private stakeholders. Key milestones that characterize Phase I are:

- initial discussion with key stakeholder groups (e.g., private sector, informal sector, municipalities, civil society) to build a common vision and language
- goal and target setting (e.g., for collection and recovery volumes, priority materials)
- detailed analysis of the current waste management system and key interventions required to achieve targets
- support of voluntary industry-led initiatives to demonstrate willingness and capacity to take on leadership (e.g., through an industry-led, PRO-executed model) and set best practices

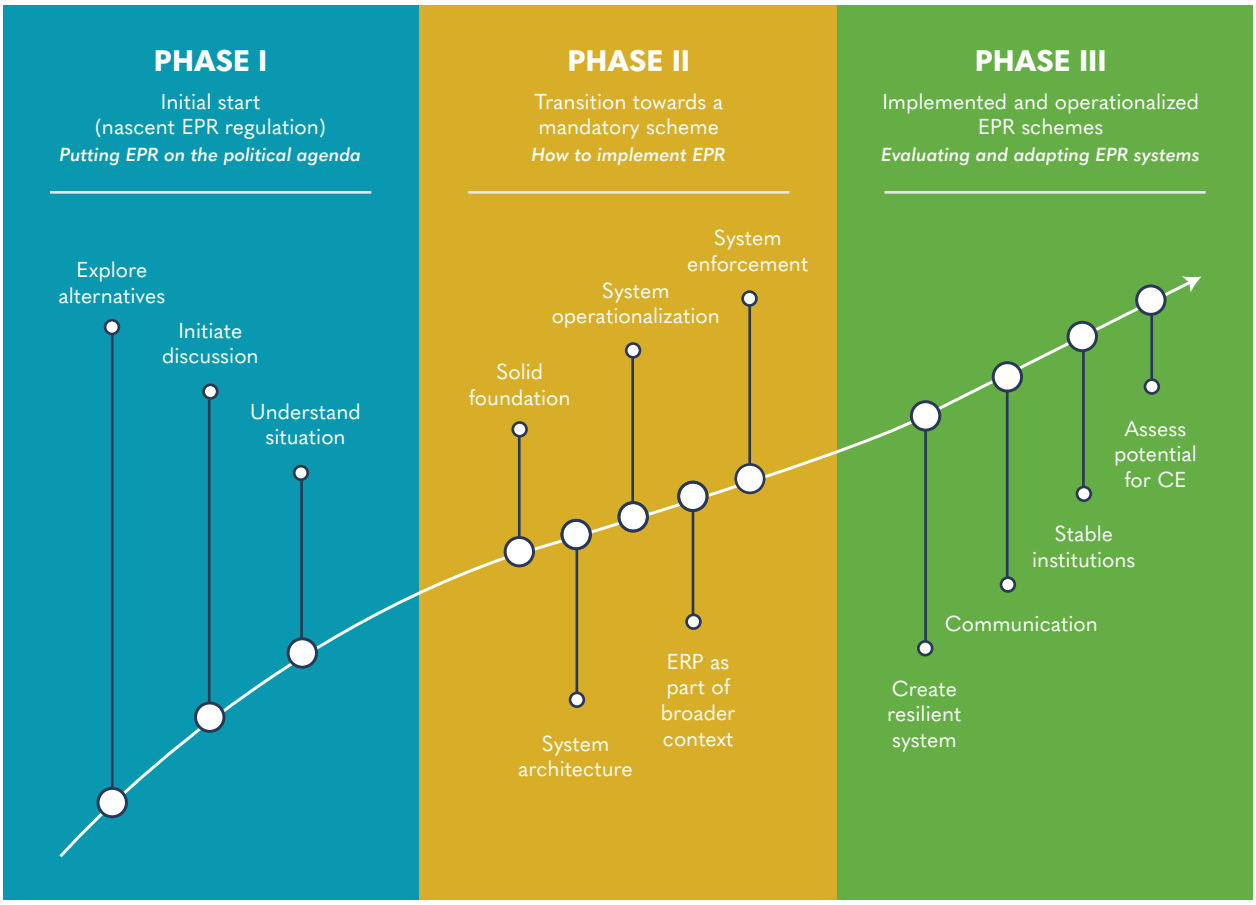
Phase II: Transition—moving towards mandatory EPR

The transition phase is marked by ongoing efforts to establish a legally binding and enforceable regulatory framework that is appropriately adapted to the national context. Expectations and stakeholder roles must be balanced against the responsibilities required to establish the primary governance and operational functions of a well-performing EPR system. A key task of this phase is equitably and efficiently delegating responsibilities to finance and improve the operational performance of municipal waste management infrastructure.

Phase III: Maturity—effective and efficient EPR

EPR systems continue to change as waste stream and recovery technologies evolve and global market dynamics shift. EPR is dynamic and requires continual monitoring and adaptation to improve performance, increase efficiency, learn from national experiences, and enhance accountability. In the mature phase, the key task is continual operational improvement and innovation, which involves all system actors.

Figure 3. Characteristics of typical phases in EPR implementation



Source: World Bank 2022

The adoption and implementation of effective EPR systems can be strengthened by intentionally integrating Plastic Credits, especially when this is prioritized by system actors. The potential benefits that Plastic Credits can offer differ across stakeholder groups, based on each group's perceived priorities, and change over time as EPR systems develop through the three stages of implementation.

The Plastic Program's Plastic Credits are versatile and relevant to a variety of policy contexts. The use case scenario for Plastic Credits may evolve with the political and regulatory landscape of a country, but its applicability as an outcome measurement framework remains consistent. It enables uniform accounting, especially where an EPR system does not otherwise prescribe or mandate how results are measured.

The next chapter presents six country case studies, each with varying EPR implementation and operationalization models in a variety of socio-political and economic contexts, to illustrate the potential benefits of integrating Plastic Credits into EPR systems in each phase of implementation.

CHAPTER 4: ANALYSIS OF CASE STUDIES

4.1 Introduction to Case Studies

As many countries share similar challenges based on their phase of EPR implementation, case studies can help identify context-appropriate opportunities for the integration of Plastic Credits. This chapter follows a comparative case study approach to highlight common opportunities that countries and key stakeholder groups—particularly governments, producers, and waste management operators—can leverage from the integration of Plastic Credits as a mechanism to directly complement EPR efforts in emerging markets and developing economies. National performance is not assessed or ranked in this analysis; specific national scenarios are used only to contextualize EPR implementation archetypes.

The table lists the six country case studies, indicating different phases of EPR implementation.

PHASE	CASE STUDIES
Phase I: Initiation This phase's focus is to put EPR on the political agenda and pave the way for emerging legislation.	Ghana
	Indonesia
Phase II: Transition This phase focuses on the development and implementation of a specific national legal framework for EPR	Kenya
	Viet Nam
Phase III: Maturity This phase emphasizes evaluation, adaptation, and continual improvement to ensure the EPR system remains relevant and suitable	Chile
	The Netherlands

As EPR is an evolving landscape, some of the case studies highlighted are likely to move into subsequent implementation phases in the future. However, the features and characteristics highlighted will continue to be relevant to policymakers and stakeholders working on EPR systems in similar stages of development.

OUTCOME OF CASE STUDY ANALYSIS

EPR systems should have three key elements, financing, operations, and administration, and the case studies provide an assessment of how Plastic Credits can be used to support in different implementation phases and different national contexts. Overall analysis reveals three important themes under each EPR system element that best summarize how Plastic Credits can provide benefits to EPR development and implementation across different political and social contexts:

- **Enabling finance:** Align financial flows from a range of sources towards high-quality collection and recycling projects, thereby de-risking investments in waste management
  - ***Access:*** *Increase project visibility and facilitate connection with potential investors through listing on a public registry*
  - ***Security:*** *De-risk investments into high-quality collection and recycling operations through showing compliance with a globally recognized standard*
  - ***Contributors:*** *Mobilize new funding sources beyond the regulatory boundaries of EPR*
- **Boosting operations:** Increase infrastructure capacity while providing a best practice approach for operational due diligence and impact measurement
  - ***Coverage:*** *Scale capacity and/or investible infrastructure essential to fulfill EPR obligations and expand services to new areas and materials*
  - ***Standard:*** *Provide a uniform monitoring, reporting, and verification framework for operational due diligence*
  - ***Impact:*** *Drive measurable outcomes and prioritize results*
- **Strengthening administration:** Provide frameworks for transparent auditing, monitoring, and reporting on regulatory compliance and waste management outcomes, including safeguards for environmental and social protection
  - ***Record-keeping:*** *Provide frameworks and digital infrastructure for tracking progress and producers' financial contributions*
  - ***Safeguards:*** *Demonstrate best practice for environmental and social protection*
  - ***Transparency:*** *Ensure publicly accessible data and information for verifying compliance*

The key benefits of Plastic Credits in addressing the challenges faced by the case study countries are presented in the rest of this chapter, grouped under the EPR system elements of enabling finance, boosting operations, and strengthening administration. The specific contribution of Plastic Credits to each element in each country is labeled with one or two of the themes listed above, to aid general, widely applicable interpretations to be drawn from the specific national contexts of the case studies.

4.2 Key Stakeholders

Key stakeholders analyzed in this chapter are **governments, producers, and waste management operators**. Different actors within these categories may have competing priorities and interests. Municipal authorities, utility service providers, citizens, and others also play a critical role in well-functioning EPR systems but have not been included in the simplified model used to analyze the case studies.

4.3 Phase I: Exploration of EPR

This phase focuses on bringing EPR to the attention of government officials and encouraging emerging legislation. An in-depth and aligned understanding of the situation and its associated root causes can be created through effective, goal-oriented discussions with stakeholders. This process should be transparent with broad stakeholder inclusion and an emphasis on capacity building. Mechanisms for measuring and tracking progress should also be explored, along with innovative finance mobilization to improve waste management infrastructure. Voluntary, industry-driven initiatives can provide important insight into stakeholder experiences and demonstrate best practices (World Bank, 2022).

The following country cases will highlight some of the opportunities for Plastic Credits for a country in this phase of EPR development.

GHANA

EPR Policy Overview

Ghana produces approximately 840,000 tonnes of plastic waste annually and only 9.5% is currently collected for recycling (Packaging MEA 2023). The Ministry of Environment, Science, Technology, and Innovation (MESTI), with the support of the Ghana National Plastic Action Partnership and many other actors, has been exploring EPR for packaging and other manufactured products since at least 2018. The National Plastics Management Policy was adopted in 2020 (MESTI 2020).

The EPR system will require the establishment of collection and recycling centers for used plastics. The ultimate goal is to significantly increase collection rates and promote recycling to eliminate plastic litter (Packaging MEA 2023).

Prominent producers, particularly multinational companies, have demonstrated interest and leadership. The Association of Ghana Industries formed a voluntary PRO, the Ghana Recycling Initiative by Private Enterprises (GRIPE), in 2017.

The situation in Ghana exemplifies common solid waste management challenges experienced by many emerging markets and developing economies, particularly in Africa. These challenges include high rates of waste mismanagement, limited access to waste management services, particularly outside of urban centers, and high levels of informality along the value chain (UNEP 2024).

Benefits of Plastic Credits in Addressing Key EPR System Challenges in Ghana

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• Finance for waste management activities is limited and inconsistent. • There is low patronage of waste management services and low rates of payment of household user fees. • High costs of fuel, electricity, and importation of foreign equipment limit profitability of waste management operations.	**Access and Security:** Plastic Credits can unlock new funding to bridge the finance gap and help waste management operations to become more profitable and sustainable. The third-party audit of projects generating Plastic Credits helps de-risk financing of local operations, offering security that may attract new investors.
Boosting Operations 	• Waste collection, recovery, and recycling infrastructure are limited. • Rates of littering, open burning, and dumping are high. • Robust operational systems and regulatory oversight are lacking, particularly regarding small collection and recycling organizations.	**Standard:** The reporting and verification requirements associated with Plastic Credits can provide a framework for capacity-building. Regulators can use the framework to build the capacity of local operators, including informal actors, to fulfill operational performance requirements. This will help local operators become "EPR-ready."

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Strengthening Administration	• Waste management governance and funding structures are complex and often have overlapping mandates. • Irregular funding cycles lead to investment uncertainty. • Informal waste collectors and recyclers have limited organization, system visibility, and accountability.	**Safeguards and Transparency:** Plastic Credits can be leveraged in various ways to direct funding to verifiable plastic waste collection and recycling activities. As EPR is being explored, members of a voluntary PRO could purchase Plastic Credits to demonstrate their commitment to addressing local waste management challenges. The projects generating the purchased Plastic Credits might target priority materials in a socially and environmentally responsible manner while promoting inclusion of the informal sector.

INDONESIA

EPR Policy Overview

Indonesia has adopted a unique approach to EPR, and the policy landscape is evolving quickly. Article 15 of the Solid Waste Management Law No.18/2008 assigns responsibilities to producers for managing waste associated with their products. Decree NO. P.75 / MENLHK / SETJEN / KUM NUMBER .1 / 10/2019 Road Map of Waste Reduction by Producers, also known as the "roadmap to EPR" was introduced in 2019. It requires all producers to reduce the waste generated from their products by 30% by 2029. The system encompasses all packaging and products made from plastics, aluminum cans, glass, and paper that are non-biodegradable, non-recyclable, and/or non-reusable. The system primarily targets large national and multinational companies.

Compliance with current legislation is low due to the lack of: clear penalties for non-compliance, specified modalities for producer responsibility, fee-setting mechanisms, clear financial responsibility, and guidance on how to coordinate with local government to finance and expand waste collection, recovery, and recycling services and infrastructure (Consumer Goods Forum 2024; WWF 2022; IPRO 2022; SYSTEMIQ 2021a). Compliance is also affected by the broad nature of the waste reduction target; there are no specific recovery or recycling targets.

Prominent stakeholders advocate for a more formalized and collective approach to EPR, such as through the mandate of a collective PRO. The Indonesia Packaging Recovery Organization (IPRO) was established in 2020 to focus on increasing the collection and recycling of used packaging. IPRO is an industry-led initiative, overseen by members of the Packaging and Recycling Association for Sustainable Environment (PRAISE).

Benefits of Plastic Credits in Addressing Key EPR System Challenges in Indonesia

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• Balancing individual producer responsibility with collective action is difficult. Each producer must fully finance and execute their own compliance plans while also supporting and co-financing municipal waste collection, recovery, and recycling system development. Finding scalable, efficient, and equitable solutions remains a key challenge. • There is no formal, enforceable mechanism for collecting and distributing funds to finance EPR. There are no fees charged by the system, nor is there a penalty for non-compliance.	**Security:** Plastic Credits offer a standardized, results-based and scalable mechanism for obligated entities to take action and finance activities in the absence of legislative guidance. Plastic Credits also provide credible proof of compliance, and of contributions made to waste management systems.
Boosting Operations 	• Plastic waste management infrastructure is lacking, especially in rural areas and small to medium-sized cities from where approximately 72% of plastic pollution originates (World Economic Forum 2020). • There are limited collection centers in cities. Separating recyclables at source remains a challenge. • Essential infrastructure and equipment, such as specialized garbage trucks and recycling facilities, is lacking.	**Coverage:** Waste management infrastructure must be expanded to meet waste reduction targets. Plastic Credits can help finance improvements to the infrastructure needed to meet ambitious and progressive waste management targets.
Strengthening Administration 	• There is a lack of structure for tracking progress in EPR implementation. • Administration, oversight, and supervision are deemed shared responsibilities across national, regional, and local governments. Coordination and synergy among stakeholders needs to be improved. • Producers are calling for a strengthened governance system to disincentivize free-riding and establish clear rules for compliance.	**Transparency and Record-Keeping:** While government actors continue to improve the legislative and administrative framework for EPR, Plastic Credits offer a trusted means of tracking contributions to downstream pollution reduction. This may be relevant to obligated entities and PROs that want to begin measuring and demonstrating their compliance and tracking outcomes through a public registry.

BENEFITS OF INTEGRATING PLASTIC CREDITS INTO PHASE I EPR

Key system change benefit for Phase I: Demonstrate best practice

As governments and other system actors begin exploring options for adopting EPR, generation of Plastic Credits can be instrumental in demonstrating best practices related to existing plastic waste collection and recycling activities, with robust monitoring and verification incorporated. Introduction of projects registered with the Plastic Program can also bring benefits to the informal sector by identifying grassroots organizations and providing regionally prevailing wages and respecting environmental and social safeguards.

During the initial stages of EPR exploration, the private sector often drives national dialogue to co-create a robust and effective governance system that enables innovation and market-based solutions, while discouraging free-riding. Plastic Credits are a tool that can be leveraged by voluntary PROs and corporate front-runners to demonstrate the industry's willingness and ability to achieve system-level improvements and verifiable results. Credits can spur capital investment in collection and recycling infrastructure so that once enacted, EPR may be quickly operationalized.

Key benefits of integrating Plastic Credits in Phase I of EPR implementation, in order of importance:

1. **Strengthening administration: Safeguards, Transparency, and Record-Keeping**
   In Phase I, the administrative structures needed to support EPR are often absent or in early development. Plastic Credits can be leveraged by system leaders, such as members of voluntary PROs, as a trusted means of tracking contributions to waste management on a public registry. Further, since stakeholder engagement and application of social safeguards are mandatory requirements for projects certified with the Plastic Program, activities are more likely to support the development of locally appropriate and inclusive waste management from the outset.
2. **Enabling finance: Access and Security**
   In the absence of firm financing mandates, countries in Phase I must source funding for the scale-up of infrastructure through non-regulatory means. The third-party audit of projects generating Plastic Credits de-risks investment and can offer a standardized, results-based means of financing infrastructure necessary to achieve ambitious and progressive waste management targets.
3. **Boosting operations: Standard and Coverage**
   Facing challenges associated with an underdeveloped waste sector, countries in Phase I look to enhance infrastructure, especially in underserved areas while more formal legislation is being developed. The reporting and verification requirements of the Plastic Program can promote best practice while providing regulators with a framework to prepare local operators' capacity to meet operational performance requirements.

RECOMMENDATIONS

Specific opportunities for stakeholder groups during Phase I:

1. **Producers** can leverage Plastic Credit and make credible investments into high quality projects to demonstrate leadership, set a high standard for best practice and prepare for the forthcoming EPR regulations.
2. **Governments** can create an enabling environment to encourage the uptake of Plastic Credits projects to mobilize investment from voluntary channels to boost waste management operations while EPR is being developed. Governments can also leverage existing administrative frameworks associated with Plastic Credits, such as the Plastic Program's monitoring and verification procedures and environmental and social safeguards, to promote best practices and hold system actors accountable.
3. **Waste management operators** can certify projects with the Plastic Program and generate Plastic Credits as a means of financing activities before sufficient regulatory funding streams become available. The documentation and audit process required for project certification helps demonstrate operational, administrative, and environmental excellence. This is crucial for accessing additional funding and improving preparedness for reporting once mandatory EPR is enacted.

ASASE FOUNDATION COMMUNITY-BASED COLLECTION AND RECYCLING PROJECT [ID 3964]

The ASASE Foundation project is a community-based plastic waste collection and recycling project established in Ghana and currently operating in three municipalities of the Greater Accra Region.

Prior to implementation of this project, local conditions were characterized by extremely low plastic collection rates, especially in areas where municipal waste collection services were (and continue to be) minimal. Poor sanitation and hazardous flash flooding were major issues. The minimal data available suggests that the majority of collected plastic waste ended up being burned or dumped and ultimately leaked into the ocean. There was also an apparent widespread lack of community engagement on waste management.

The ASASE Foundation project involves starting small recycling plants as social enterprises in communities where plastic pollution is most severe, and empowering women entrepreneurs to build their own plastic waste collection businesses as a sustainable source of income and employment. Networks of waste pickers collect LDPE, PET, HDPE, and PP from numerous sources, including households, businesses, schools, markets, and landfills. The collected waste is transported to ASASE's collection centers and warehouses for aggregation and sorting. It is then transferred to ASASE's Cash It! plants for processing into shreds and pellets, which are sold to downstream manufacturers of construction materials and household items. **This example demonstrates how Plastic Credits can channel critical financing to regions in the early stages of EPR development. The Plastic Program includes a portfolio of high-quality, third-party audited initiatives. Potentially obligated entities can immediately and securely invest in these projects through purchasing Plastic Credits.**

Find more details about the project on the Verra Registry.

BATAM OCEAN IMPACT PROJECT [ID 4199]

The Batam Ocean Impact Project tackles plastic pollution by hiring and training community members to collect and manage plastic waste from coastal and riverine environments in Batam, an island in the Riau Archipelago, Indonesia.

Due to a lack of access to adequate waste management services, local households tend to litter or directly dump household waste into the sea. As a result, excessive debris accumulates in the open environment. This is a major source of local pollution and a significant health risk to local communities.

This project encompasses the design, mobilization, and implementation of clean-up and waste management activities carried out by formally hired and trained local community members. Waste is collected manually at community-based sites, then sorted and weighed. Plastic waste collection activities include boat-based collection in the river, river barriers, and household collection.

Non-recyclables are transported to a sanitary landfill or waste-to-energy facilities and recyclables are sent to a material recycling facility for sorting and subsequent recycling.

Sales of Plastic Credits help fund program investment and daily operational costs, such as setting up proper waste collection infrastructure and logistics. The formally hired workers are provided with a living wage salary, health insurance, and education and training programs.

Plastic Credits from this project have been purchased by companies both within and outside of Indonesia, underscoring the role of Plastic Credits in providing a secure mechanism for enabling both local and international financing. Purchases by domestic companies signal a proactive effort by local operators to prepare for the full implementation and enforcement of national EPR regulations.

Find more details about the project on the Verra Registry.

PLASTIC CREDITS IN BLENDED FINANCE INSTRUMENTS

Leveraging blended finance opportunities is of particular interest to parties to the international legally binding instrument on plastic pollution currently under development. Blended finance offers a way to maximize the pool of contributors that are supporting plastic waste reduction activities in order to better meet the instrument's ultimate goals. Plastic Credits can be leveraged to attract private investment for upfront capital needed by plastic waste management projects, particularly when used within a blended finance mechanism that reorients cash flows from traditional financing approaches.

The World Bank's Plastic Waste Reduction-Linked Bond is a notable example. It uses a novel approach to channel private funds into plastic waste reduction efforts while offering bond investors Plastic Credit-linked returns. The plastic waste reductions achieved will be certified through Verra's Plastic Program to generate Plastic Credits. This bond diverges from traditional bonds by linking part of the bond's interest payments to the sale of Plastic Credits generated by the project (World Bank 2024c).

Plastic Credits provide a way to de-risk projects and fund those that otherwise may not be economically viable. This allows project developers to avoid paying high interest rates. The bond structure accommodates different risk appetites from participants (e.g., project risk versus market risk) and enables projects to secure funding that would otherwise be inaccessible (Circulate Initiative 2024).

The ASASE Foundation's Community-based Collection and Recycling Project (**ID 3964**) and SEArcular Indonesia Collection and Recycling Project (**ID 4805**) have received approximately **USD 14 million** in upfront financing from the Plastic Waste Reduction-Linked Bond for their plastic waste collection and recycling activities.

Phase II: Transition Towards Mandatory EPR

This phase focuses on the development and implementation of a specific legal framework for EPR. The journey from the drafting of legislation to its successful implementation is complex. A mandatory EPR system requires a holistic approach that focuses on the system architecture created by the legal framework, the ability to mobilize finance, and the achievement of tangible outcome.

System architecture must assign unambiguous roles and responsibilities, balance ambitious yet practical targets, and integrate the informal sector. To operationalize the system effectively, a reliable structure must be established for managing all packaging waste regardless of its value. Strategies that promote domestic sourcing and support the recycling industry are equally important. Identifying the right approaches often involves trial and error and should build on existing initiatives, pilot programs, and partnerships with businesses.

Monitoring and enforcement are critical to ensure that all stakeholders fulfil their responsibilities, and the system is appropriately operationalized. Adequate resources, such as sufficient staff and training, must be allocated to ministries responsible for enforcement. Adoption of standards across the waste management value chain should also be required (World Bank 2022).

KENYA

EPR Policy Overview

Kenya began establishing an EPR system more than a decade ago. In 2011, the National Environment Management Authority (NEMA) published the National E-Waste Guidelines to streamline procedures for handling and disposal of electrical and electronic waste (e-waste). This established a national precedence for EPR. It was followed by the Environmental Management and Co-ordination Act (EMCA; 2012). In 2018, NEMA published draft Environmental Management and Coordination (Plastic Bags Control and Management) Regulations, adopting an EPR-like approach to the management of single-use plastic carrier bags. Section 13 of the Sustainable Waste Management Act (2022) clearly establishes mandatory EPR for all packaging of non-hazardous and hazardous materials. The legislation also covers non-packaging items such as durable plastics, furniture, tires, and textiles.

Several prominent actors from the private sector have publicly advocated for the establishment of mandatory EPR since 2018, with the initiation of two voluntary, industry-led schemes, PETCO/PAKPRO1 and KEPRO2 (NEMA 2024). There is a strong coalition of shared public and private interest in improving sustainable management of packaging waste (Kenya Plastic Pact 2021).

The Sustainable Waste Management Act tasks NEMA with setting targets, in consultation with the National Waste Management Council, to be published by the Ministry of Environment. The targets should be cognizant of technical and economic feasibility, as well as geographic and demographic characteristics. Current implementation plans provided by NEMA (2024) highlight the importance of collaborating with county governments and waste picker associations to meet producer obligations. The plans also recommend the use of buy-back centers.

NEMA monitors PROs, which have full financial and organizational responsibility for implementing EPR. PROs can collect funds directly from producers and can enter direct contracts with waste service providers. PROs set fees for registration, annual subscription, and modulated EPR, which should cover the costs of waste management for their products, including separate collection, transport, disposal, administrative, and communication costs.

The Sustainable Waste Management (Extended Producer Responsibility) Regulations (2024) allow for individual or collective producer responsibility. Licensing of producers is based on annual reporting. Free riders and other offenders can be prosecuted with fines or the removal of their products from the market. Producers continue to be active in the EPR reform discussion and seem most focused on boosting operations. They are particularly committed to driving operational best practices and due diligence and strengthening governance frameworks for compliance.

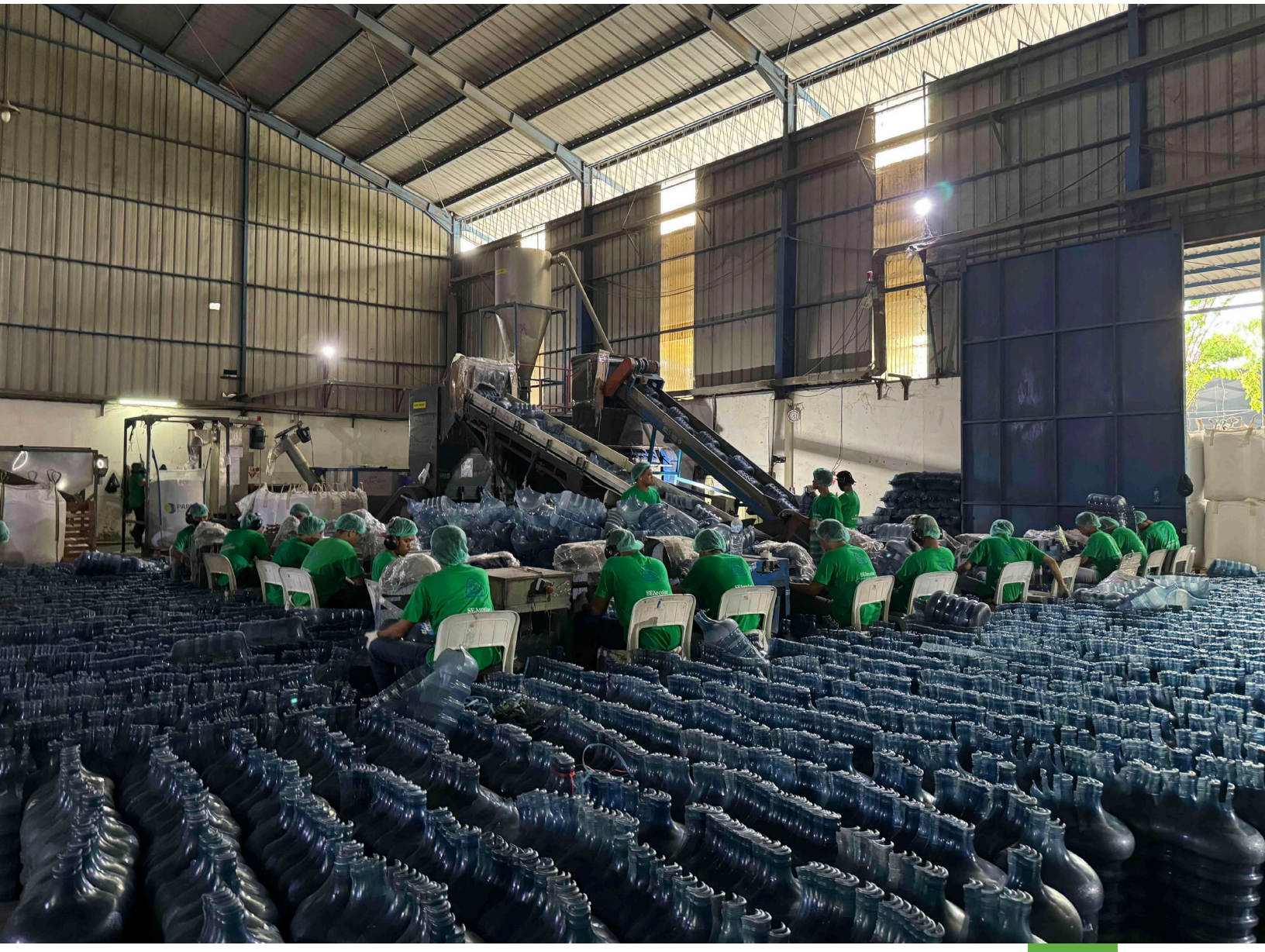
Despite Kenya having made good progress in developing an EPR system, on May 7, 2025 the High Court in Nairobi issued a temporary conservatory order halting the implementation of EPR regulations. This underscores the complex and often non-linear nature of EPR implementation in emerging markets. Nevertheless, the policy framework and scenarios analyzed in this section remain relevant for countries in similar situations.

1 https://pakpro.co.ke
2 https://kepro.co.ke/

Benefits of Plastic Credits in Addressing Key EPR System Challenges in Kenya

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• Most government enforcement agencies at both national and county levels lack sufficient resources to effectively discharge their legal mandates. Limited funding constrains availability of human resources and infrastructure to support waste management activities (WWF 2022; Opondo 2020). • Small-scale enterprises may face difficulties in complying with regulations due to the administrative burden of financing and operating waste management activities. • There is some criticism that, at less than USD 4 per tonne (KES 0.5 per kilo; Malesi 2024), collected fees are insufficient to cover waste management needs.	**Access:** Governments and producers can leverage Plastic Credits to quickly mobilize financial resources to complement the full cost of waste management while relieving some of the administrative burden on regulators and obligated entities.
Boosting Operations 	• Lack of capacity, adequate systems, and infrastructure for waste collection, transportation, recovery, and disposal leads to high levels of mismanagement. According to the 2019 census (KNBS 2019a,b), only 1.5% and 54.6% of solid waste generated in rural and urban areas, respectively, is collected at the household level. • In many rural and urban parts of Kenya, formal waste management services are absent, leaving the informal sector responsible for waste management activities. Such informal sector activities are often characterized by a lack of regular income for workers, simple work equipment, and harsh working conditions. • Most domestic recyclers source recyclables from other countries to meet required volumes. This does not improve the recycling rate for domestic plastic waste. • The current draft EPR legislation lacks details for operationalizing the framework. Further information is needed on the regulatory body's responsibilities, auditing requirements, and scope of products covered.	**Standard and Impact:** Projects generating Plastic Credits can demonstrate best practices for operational due diligence. For example, the Plastic Program's social and environmental safeguard requirements mandate that stakeholders are involved on an ongoing basis and the project should not have a negative impact on the local community or environment. Plastic Credit finance can help build up local infrastructure to improve collection, sorting, and segregation at source, thus reducing reliance on imported recyclable plastic and improving domestic circularity.

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Strengthening Administration	• Free riders, lack of detailed regulations to guide implementation, and limited enforcement capacity continue to stall progress in raising finance and establishing new recovery and recycling operations. • The presence of multiple PROs leads to competition and increased capacity demand for NEMA to effectively harmonize reporting and monitor progress.	**Record-Keeping:** Producers and PROs can benefit from the reporting requirements of the Plastic Program. The transparency of Plastic Credits listed on Verra's Registry can streamline integration of Plastic Credits into compliance frameworks that the industry already uses.



VIETNAM

EPR Policy Overview

Viet Nam has a long history of EPR policy development, dating back to 2004 under Resolution 41-NG/TW for waste electronics and related items. In 2020, the Ministry of Natural Resources and Environment (MONRE) strengthened its commitment to EPR in articles 54 and 55 of the Law on Environmental Protection (LEP 72/2020/QH14). It added packaging to the list of regulated materials and addressed several shortcomings of the original legislation, which provided a framework for a voluntary mechanism that delivered modest results (Nguyen 2022). Since 2024, producers of regulated products (e.g., plastic packaging, batteries, tires, chargers, electronic equipment, and vehicles) have been required to comply with mandatory recycling obligations. The legislation covers packaging of all kinds, including that used for food and beverages, cosmetics, pharmaceuticals, and other transport or commercial purposes. Mandatory recycling ratios for each type of product or packaging are revised every three years. According to the targets set by MONRE in 2024, in the first three years, obligated entities must recover at least 40% of a product's volume and recycle 22% of rigid PET packaging.

Article 54 of the 2020 Law on Environmental Protection contains five key characteristics of the transition from voluntary to mandatory EPR (Nguyen 2022):

1. Setting mandatory recycling rates and specifications
2. Providing methods for producers to fulfil their recycling responsibilities, based on market principles
3. Requiring EPR based on consensus among the State, enterprises, and social and environmental organizations
4. Issuing regulations on determining rates for collection and disposal of household waste based on volume to boost at-source sorting of household waste
5. Adopting and improving policies on the development of infrastructure facilities for solid waste collection and disposal, developing the recycling industry, providing incentives and support for environmental protection activities, and promoting development of a circular economy

Producers have the option to choose financial or operational responsibility for waste management. The financial path requires paying a fee to the Viet Nam Environmental Protection Fund (VEPF). MONRE—now part of the Ministry of Agriculture and Environment—revises fees every three years. Financial contributions are calculated according to government guidance on the cost of recycling a unit volume of product. Producers are expected to calculate their financial contribution based on factors specifically relevant to them.

The operational responsibility path requires producers to take responsibility for the collection and recycling of one or a group of products and packaging in one of the following ways:

- Self-operated recycling
- Hiring a recycling unit to carry out the recycling
- Authorizing an intermediary to organize the recycling

Producers are individually responsible for complying with the law. They must register their recycling plans and report to MONRE annually (Huld 2024).

Decree No.05/2025/ND-CP (2025) amends Decree No. 08/2022/ND-CP (2022), clarifying that recycling of imported waste, and of packaging generated by industrial processes, is not counted towards the mandatory recycling rate; and that organizing recycling (operational responsibility) is preferred over making a financial contribution to the VEPF (KPMG 2025).

Benefits of Plastic Credits in Addressing Key EPR System Challenges in Viet Nam

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• Many stakeholders have called for greater transparency on VEPF spending. Distribution of the funds, whether in payment to recycling facilities, capacity building, technology investment, or other supporting activities, should be publicly reported for increased transparency (Circular Economy Working Group of the Green Growth Sector Committee 2023; Hoa 2022). Further clarity and detailed guidance are needed regarding how financial contributions to the VEPF are calculated and beneficiary recycling projects are selected. • Lack of VEPF spending efficiency is likely to erode investor confidence, creating a setback for EPR implementation. • Decree 05/2025/ND-CP removed the previous process for requesting financial support from the VEPF. Entities wishing to request support must wait for future regulations to be issued (KPMG 2025).	**Access:** If VEPF-funded projects were certified with the Plastic Program, the independent measurement framework of the program may increase investor confidence in the VEPF. It would be easier to see that contributions to the VEPF were driving real results in waste management outcomes. In turn, this may increase the pool of investors willing to finance relevant projects.
Boosting Operations 	• Recycling activities are heavily dependent on imported plastic scrap. Domestic plastic scrap is unstable and contains many impurities that increase recycling costs and affect the quality and competitiveness of recycled plastic products. • Current recycling operations are mostly small-scale and use outdated technology. • The informal sector performs 90% of existing recovery activities (Salhofer et al. 2021) and is often not adequately compensated for the services it provides.	**Coverage and Standard:** Generating Plastic Credits from waste management activities in Viet Nam can support essential infrastructure for better collection, sorting, and segregation, thus improving the availability of domestic feedstock for recycling. It can also drive innovation in recycling technology, improve recycling rates, and help to enhance operational due diligence through embedded environmental and social safeguards.

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Strengthening Administration 	• There is a lack of specific guidance on the establishment of a dedicated governmental unit and regulations governing its effective operation. • There is a lack of clarity on monitoring compliance; producers are individually responsible for registration and reporting to demonstrate their own compliance.	**Record-Keeping:** Regardless of the compliance route chosen, Plastic Credits could be used as a proxy to measure and report on the impact of plastic waste recycling activities facilitated by the VEPF or by organizations responsible for recycling activities. The common framework of the Plastic Program brings measurement consistency and transparency and allows for a flexible approach.

BENEFITS OF INTEGRATING PLASTIC CREDITS INTO PHASE II EPR

Key system change benefit for Phase II: Bolster performance

As EPR systems transition to mandatory compliance, the key objective of all system actors is to accelerate the achievement of tangible results. Certifying waste management projects with the Plastic Program and generating Plastic Credits can ensure financial contributions are results-based, verify participation within the system, and reduce regulatory burdens while strengthening transparency and accountability across the value chain.

During this phase of EPR implementation, governments will likely be leading the process, driving much-needed finance to the solid waste management sector and designing optimal system governance and administration. The rigorous systems associated with plastic credits from a high-quality standard can be an invaluable tool to governments in this phase (World Bank 2024a). The Plastic Program provides frameworks and digital infrastructure for registering system actors and robust mechanisms to ensure the additionality of investments, operational best practices, and due diligence, including ensuring environmental and social protections.

Key benefits of integrating Plastic Credits in Phase II of EPR implementation, in order of importance:

1. **Enabling Finance: Access**
   A major priority of all system actors during Phase II is significantly increasing financing of the sector in order to achieve ambitious targets and address sizeable shortcomings in existing waste management infrastructure and operations. The transparent and verified results-based approach of the Plastic Program boosts investor confidence by supporting efficient expenditure and tracking of financial contributions, even when aggregated at the collective level through a PRO. Such pooling of funds while demonstrating individual compliance will likely drive the greatest system improvements and scaled investment into new infrastructure.
2. **Strengthening Administration: Record-Keeping**
   Reporting requirements, monitoring and evaluation procedures, and verification of results are some of the major administrative functions that are being established in Phase II. The Plastic Program provides proven frameworks with which the industry can demonstrate its capacity for compliance. The Plastic Program can be directly leveraged or used to improve, harmonize, launch, or inspire locally adapted frameworks. Its reporting requirements and the listing of Plastic Credits on Verra's digital public registry can help streamline transparent compliance reporting.
3. **Boosting Operations: Coverage, Impact, and Standard**
   Plastic Credits can be strategically leveraged to mobilize funding for scaling essential infrastructure for collection, sorting, and segregation, thus improving the availability of domestic feedstock for recycling. Use of Plastic Credits can also drive innovation in recycling technology and improve recycling rates while promoting best practice for operational due diligence and driving system improvements, such as supporting waste pickers and underserved communities to benefit from EPR systems.

RECOMMENDATIONS

Specific opportunities for stakeholder groups during Phase II:

1. **Governments** are clearly driving the agenda to strengthen EPR systems during Phase II. They can formally incorporate Plastic Credits as a mandatory or voluntary compliance instrument. Such an approach offers efficiency for enforcing compliance through the incorporation of an existing registry and reporting requirements, which can reduce the administrative burden associated with developing these approaches from scratch. Use of the Plastic Program can also ensure uniformity in tracking progress and impacts across projects in different jurisdictions.
2. **Producers** may benefit from the purchase of Plastic Credits as a means of meeting compliance mandates, or by using the Plastic Program measurement framework as a means of evaluating the outcomes of individual or collective investments in waste management. Greater transparency and ensuring that EPR fees are driving real collection and recycling outcomes allows producers to demonstrate their capacity to drive system-level improvement and achieve targets, while providing additional social and environmental benefits.
3. **Waste management operators** can certify their activities with the Plastic Program to demonstrate their alignment with important social and environmental safeguards, stakeholder consultation, measurement and reporting requirements, and third-party auditing and verification frameworks. This demonstrates their leadership in generating higher quality outcomes and competitiveness for the limited funding currently available within EPR systems. Competitive advantage may be more equitably determined across micro, small, and medium enterprises, grassroots organizations, and waste picker cooperatives that have traditionally been overlooked as potential partners and key actors in plastics recovery and recycling.

PLASTIC WASTE RECYCLING & IMPROVING WASTE PICKER LIVELIHOODS IN KENYA [ID 3838]

Taka Taka Solutions collects multiple types of plastic waste such as PP, HDPE, LDPE, and others through buy-back centers, material recovery facilities, and industrial partnerships. Collected plastics are transported to recycling facilities, where both rigid and flexible plastics undergo shredding, washing, and pelletizing to produce recycled plastic pellets, which replace virgin plastics in local manufacturing. Operating in multiple regions, the project reduces waste destined for landfill and open burning, alleviating environmental and health risks while creating approximately 300 direct and 3,000 indirect jobs. The project establishes an end-to-end plastic collection and recycling system for the areas it serves. It also supports workers with personal protective equipment, training, and social programs, including childcare services. Finance from Plastic Credits further enhances recycling capacity and socioeconomic support for workers.

As of the date of publication, the project has verified the collection of 1,158 tonnes and recycling of 260 tonnes of plastic waste. In total, the project expects to be able to collect 144,840 tonnes and recycle 83,214 tonnes of plastic waste in its seven-year crediting period.

This project features the first recycling plant for flexible waste polymers and single-use plastics (e.g., trays, cups) in Kenya. This demonstrates how Plastic Credits can provide access to finance for expansion of infrastructure for efficiently managing significant domestic waste streams.

Find more details about the project on the Verra Registry.

4.5 Phase III: Effective and Efficient EPR

This phase emphasizes evaluation, adaptation, and continual improvement to ensure the EPR system remains relevant and suitable for its context, while continuing to improve broader compliance. Actions include guaranteeing stable institutional structures, creating resilient waste management structures, and investing in communication to inform stakeholders about changes and provide transparency to the process and system. The potential of the EPR system to contribute to the circular economy transition, especially considering moving up the waste hierarchy from landfill to recycling, should be assessed (World Bank 2022).

CHILE

EPR Policy Overview

Since becoming an OECD member in 2010, Chile has made significant progress towards adopting more rigorous standards in waste management and recycling. The Waste Management, Extended Producer Responsibility and Recycling Initiatives Act (No. 20.920, Ministry of Environment 2016) was published in 2016 to establish waste recovery as a central component of solid waste management and to enhance existing regulations. It seeks to increase the amount of waste recycled by diverting what is currently sent to sanitary or illegal landfills.

A decree associated with EPR Law No. 20.920 that covers packaging (Decree on Packaging Goals, DS 12/2020) was approved by the Council of Ministers in May 2020 following public consultation (Prevent Waste Alliance 2023). This decree has been applied progressively in different sectors and products over several years, with the aim of facilitating the adaptation of producers and management systems to the new regulations (EuroChile 2023). The EPR Law also contains a provision for a recycling fund, which is intended for recycling projects run by municipalities or associations (Prevent Waste Alliance 2023).

Producer obligations extend to ensuring proper storage, transportation, and treatment of waste materials to meet recovery targets. These obligations became enforceable in September 2023 and a progressive scale based on packaging material subcategories was established.

The EPR system requires producers of priority products to comply with certain obligations such as registering, organizing, and financing waste management, meeting collection and recovery goals through one of the management systems, and ensuring that collected waste is treated by authorized entities. This can be done individually or collectively by financing collection of packaging waste through PROs. Producers must report annually on the volume of materials they put onto the market and register with the Pollutant Release and Transfer Register System. Penalties are imposed on producers who fail to meet their obligations.

The Ministry of Environment has released a Policy for the Inclusion of Waste Pickers 2016–2020, which includes a work plan to promote the social, economic, and environmental inclusion of informal workers through training and skill certification. It also promotes their formal participation in the EPR system as authorized waste managers.

Benefits of Plastic Credits in Addressing Key EPR System Challenges in Chile

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• Nearly 80% of properties are not required to pay for the collection and disposal of their waste. This means municipal authorities are underfunded (PREVENT 2023). • Most funding from the national waste program goes to supporting sanitary landfills, and it is unclear whether the recycling fund has been used for infrastructure development.	**Contributors:** Plastic Credits can mobilize funding for infrastructure not currently covered by the recycling fund. Furthermore, the recycling fund could deploy funds via purchase of Plastic Credits to ensure real outcomes are associated with its financing.

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Boosting Operations 	• Chile has a waste collection rate of nearly 100%, but only about 8.5% of waste is recycled, indicating that recycling needs to be increased. • Considering the substantial contributions of waste pickers, their inclusion is a key priority of this system. Waste pickers must complete a certification process to formally participate (PREVENT 2023). The effectiveness of this process is unclear.	**Coverage:** In environments with high rates of plastic recoverability, revenue from sales of Plastic Credits could help to increase domestic recycling capacity. Obligated entities can purchase locally generated Plastic Credits to demonstrate their leadership in redirecting waste to preferred end destinations. This would support continual system performance and optimization. Activities registered with the Plastic Program are likely to directly involve the informal sector and help informal sector members benefit from EPR policy.
Strengthening Administration 	• Multiple PROs exist. Methods for tracking progress in a consistent and transparent manner need to be developed. • Only 15% of the companies regulated by national legislation are subscribed to a PRO, creating significant challenges for meeting targets (BIR 2024).	**Transparency and Record-Keeping:** As governments work to continually drive system improvements, Plastic Credits could be integrated into existing or enhanced platforms to further improve the traceability of real outcomes. The established framework of the Plastic Program and the listing of Plastic Credits on Verra's public registry can also be leveraged to harmonize measuring and reporting across various PROs.

THE NETHERLANDS

EPR Policy Overview

The Netherlands has one of the highest recycling rates for general materials at 80%. Its circular material use rate is 29% (ten Wolde 2019) and it is progressing towards a 50% reduction in use of raw materials in 2030 compared to 2016 (Global Plastics Policy Center 2024).

The Netherlands' plastic packaging EPR system is governed by the Packaging Management Decree (2014) and the Extended Producer Responsibility Scheme Decree (2023). The framework requires producers, including foreign companies selling in the Dutch market, to pay waste management contributions for the packaging they place on the market. The fees set by the government through Verpact (PRO) are based on the type and weight of packaging material. The Ministry of Infrastructure and Environment is tasked with setting targets relevant to the EPR system.

EPR obligations include financing waste collection, sorting, and recycling, with specific rates varying by material. Companies introducing over 50,000 kg of packaging annually must comply with all obligations, while those below this threshold have fewer obligations.

The European Union's directive to reduce the environmental impact of single-use plastics adds additional levies.

EPR fees are disaggregated based on material type (e.g., glass, paper, plastic), packaging type (single use, deposit, commercial, consumer), recyclability, and cost of end-of-life management. Rates range from EUR 0.017 per kilogram of paper and cardboard to EUR 1,320 per kilogram of flexible, multi-material, single-use plastic (Verpact 2025). The Netherlands uses a collective responsibility model; a single, non-competitive PRO covers financial, operational, administrative, reporting, and ancillary functions (Kingdom of the Netherlands 2022). The PRO is responsible for annual reporting on behalf of its members. It reports on the volume of materials placed on the market and the volume collected, recycled, and disposed of. It also manages corporate compliance with several regulations beyond EPR, including the single-use plastic directive, and the deposit return mechanism, as well as promoting research and innovation into new packaging.

The Netherlands is considered a global leader in plastic waste management, a position driven by strong policies and widespread public awareness.

Benefits of Plastic Credits in Addressing Key EPR System Challenges in the Netherlands

SYSTEM ELEMENTS	CHALLENGES	KEY BENEFITS OF PLASTIC CREDITS
Enabling Finance 	• EPR systems entail significant financial commitments from producers, encompassing administrative expenses and compliance costs. These financial demands can be particularly burdensome for smaller enterprises, potentially hindering their active participation.	**Contributors:** Sale of locally generated Plastic Credits can attract additional funding and new funders on top of EPR fees for improved recovery rates and product recyclability. Philanthropists, technology/innovation providers, and small-scale businesses producing luxury products can fund innovation through the trusted, results-based mechanism provided by the Plastic Program.
Boosting Operations 	• Collected plastic waste is mixed and/or contaminated with other waste which hampers sorting optimization and results in quality issues (Holland Circular Hotspot and TNO 2021). • Recycling of hard-to-recycle, flexible, multi-material, and durable products still falls short. Only a fraction of plastic waste is suitable for mechanical recycling because of its design. Plastics with additives, mixed waste streams, and highly contaminated material cannot be mechanically recycled. Alternative recycling technologies are needed.	**Coverage:** Registering with the Plastic Program and generating Plastic Credits can drive innovation and interest in complementary collection and recycling activities for particularly unique and complex packaging fractions such as multi-materials, flexible packaging, and non-packaging materials (e.g., durables, post-industrial waste) not currently covered by legislation.
Strengthening Administration 	• Complex policy and rising targets require increasing granularity of performance reporting.	**Transparency:** The measurement framework that underpins the generation of Plastic Credits can be used to enhance the transparency and integrity of reported collection and recycling volumes.

BENEFITS OF INTEGRATING PLASTIC CREDITS INTO PHASE III EPR

Key system change benefit for Phase III: Drive innovation

As EPR systems mature, the use of Plastic Credits offers a unique opportunity to support all system actors to drive innovation to continually improve system performance and efficiency. System actors can leverage the broad scope of activities covered under the Plastic Program to drive innovation to target new material streams, such as hard-to-recycle formats, underserved areas in need of increased collection systems, and new recycling technologies.

During the most mature phase of EPR implementation, all system actors should work together in a well-functioning, high-performing, efficient, adequately financed, and robust government-led framework. In this phase, Plastic Credits continue to offer opportunities to all system actors, and particularly producers of harder-to-recycle formats and waste management innovators who are pushing the frontier of circularity.

Key benefits of integrating Plastic Credits in Phase III of EPR implementation, in order of importance:

1. **Boosting Operations: Coverage**
   The sale of locally generated Plastic Credits can be an efficient tool to target incremental improvements in underperforming areas, such as increasing

collection and recovery in rural or underserved areas, increasing recycling rates for hard-to-recycle materials, and including new products and materials.

2. **Enabling Finance: Contributors**
   Plastic Credits offer a low-risk mechanism for obligated producers to participate in the EPR system and to test new, innovative approaches for recovery and recycling. Such approaches may eventually drive down costs and provide a mechanism to attract new funders, such as non-obligated producers of luxury goods, hospitality providers, and other generators of large volumes of waste, to contribute to achieving ambitious recovery and recycling goals.
3. **Strengthening Administration: Transparency and Record-Keeping**
   As governments work to continually drive system improvements, Plastic Credits can be integrated into existing or enhanced platforms to further improve the traceability and granularity with which outcomes can be reported. The established framework associated with Plastic Credits and the digital public registry on which they are listed can be leveraged to harmonize monitoring and reporting across various PROs.

RECOMMENDATIONS

Specific opportunities for stakeholder groups during Phase III:

1. **Waste management operators** can leverage the verified results represented by Plastic Credits to mobilize financing for new equipment, facilities, and operational best practices as circular economy ambitions will continue to demand innovation and efficiency.
2. **Producers** can leverage the low-risk and flexible mechanism offered by the Plastic Program to test new, innovative approaches to continually increase performance while driving down costs. Producers may also purchase Plastic Credits to differentiate themselves from competitors, demonstrating their leadership in contributing to waste management beyond what is legally required.
3. **Governments** tend to raise ambitions in order to continually drive system performance and can use Plastic Credits to incentivize industry innovation to meet higher performance targets, such as expanding recovery and recycling systems for new materials and in underserved areas.

PRODUCING DURABLE GOODS FROM HARD-TO-RECYCLE PLASTIC WASTE [ID 4432]

Led by Braskem, this project based in the Netherlands addresses the challenge of recycling composite and mixed plastic waste—a waste stream not directly covered by current national EPR regulations. Using innovative technology, the project transforms difficult-to-recycle plastics that are typically incinerated or sent to landfill into durable products like road plates, transport pallets, and heavy-duty mats. This single-process mechanical recycling method involves shredding, washing, extruding, and molding. The recycled products are durable, reusable, recyclable, and support diverse industries, including construction and agriculture.

Since launching, the project has redirected a substantial amount of local waste to a second life. Revenue from the sale of Plastic Credits will support facility upgrades, research, and expansion.

This project exemplifies how activities enabled by revenue generated by Plastic Credits can complement the impact of existing EPR systems to ensure more comprehensive treatment of waste streams in the region and promote the development of domestic waste infrastructure to reduce waste export.

As of the date of publication, the project has verified the recycling of approximately 14,411 tonnes of plastic waste.

Find more details about the project on the Verra Registry.

CHAPTER 5: SUMMARY OF KEY BENEFITS AND A PATH FORWARD

Plastic pollution remains a significant environmental challenge, particularly for emerging markets and developing economies. While EPR offers a promising pathway to address plastic waste, its effective implementation requires tailored approaches, collaborative efforts, and innovative financing mechanisms.

5.1 Key Benefits of Plastic Credits in Strengthening EPR Systems

Plastic Credits provide a unique opportunity to address key gaps in finance, operations, and administration that hinder the effective implementation of EPR systems. By leveraging the adaptability and transparency of the frameworks associated with Plastic Credits, stakeholders can accelerate progress across the three phases of EPR development: initiation, transition, and maturity.

4. **Enabling Finance:** Plastic Credits help mobilize resources from voluntary and regulatory channels to address significant funding gaps in waste management infrastructure. They provide a results-based mechanism to attract and align investments from various sources and ensure the efficient use of financial contributions towards high-quality projects.
5. **Boosting Operations:** By certifying projects with the Plastic Program, waste management operators can demonstrate adherence to social and environmental safeguards while showcasing best practices for operational due diligence and impact measurement. Plastic Credits can also incentivize innovation in collection and recycling practices, benefiting underserved areas and material streams.
6. **Strengthening Administration:** Use of the program infrastructure associated with Plastic Credits can support governments and producers in adopting transparent monitoring, reporting, and verification frameworks. These tools enhance accountability, streamline compliance processes, and promote best practices across jurisdictions.

Plastic Credits issued by Verra's Plastic Program provide an opportunity to complement and strengthen EPR systems across all phases of development. Key challenges faced in each of the three phases, and the key Benefits of Plastic Credits in addressing these challenges and bringing system benefits, are summarized in the following tables.

Summary of Key Findings:

	PHASE I: INITIATION *Exploration of EPR*	**PHASE II: TRANSITION** *Moving toward mandatory EPR*	**PHASE III: MATURE** *Effective and Efficient EPR*
Top Three Challenges	- Lack of reliable data and administrative structures needed to measure and track progress - Underdeveloped collection and recycling infrastructures - Lack of clear financing mandates and mechanisms	- Fragmentation in the legal and operational framework - Significant funding gaps due to lack of broader compliance and low confidence in fund distribution - Shortcomings in existing waste management infrastructure and operations (e.g., lack of informal sector integration)	- Remaining non-compliance - Lack of harmonization of measurement and reporting mechanisms across multiple PROs - Need to increase recycling rates and include more material types
Key Role of Plastic Credits	Demonstrate best practice: Plastic Credits can be instrumental in demonstrating best practices related to existing plastic waste collection and recycling activities. Entities generating Plastic Credits exemplify operating in line with environmental and social safeguards and incorporating robust monitoring and verification procedures.	**Bolster performance:** To accelerate the achievement of tangible results, Plastic Credits can be leveraged to ensure financial contributions are results-based, to verify participation within the system, and to reduce regulatory burdens while strengthening transparency and accountability across the value chain.	**Drive innovation:** Plastic Credits offer a unique opportunity to support all system actors in driving innovation necessary to continually improve system performance and efficiency. The broad scope of activities covered under the Plastic Program can be leveraged to drive innovation, and to improve collection systems in underserved areas.

KEY OPPORTUNITIES FOR SYSTEM ELEMENTS TO BENEFIT FROM THE INTEGRATION OF PLASTIC CREDITS			
PRIORITY	**PHASE I: INITIATION** *Exploration of EPR*	**PHASE II: TRANSITION** *Moving toward mandatory EPR*	**PHASE III: MATURE** *Effective and Efficient EPR*
#1	**Strengthening Administration:** Plastic Credits can be leveraged by system leaders, such as members of a voluntary PRO, to demonstrate commitments to achieving clear targets for priority materials in a socially and environmentally responsible manner.	**Enabling Finance:** The transparent and verified approach associated with generating Plastic Credits supports tracking of individual financial contributions to boost investor confidence. Such a results-based approach will likely drive investment into new infrastructure.	**Boosting Operations:** Plastic Credits can be an efficient tool to target incremental improvements in underperforming areas to achieve higher EPR system performance.
#2	**Enabling Finance:** Plastic Credits mandate third-party audits, which de-risks investments and offers a standardized and results-based mechanism to help drive finance to improve necessary infrastructure.	**Strengthening Administration:** Producers can use the established framework of the Plastic Program to improve or launch locally adapted reporting mechanisms. The reporting requirements and the transparent listing of Plastic Credits on Verra's digital public registry can help streamline compliance reporting.	**Enabling Finance:** Plastic Credits offer a flexible and low-risk mechanism for obligated entities to test new, innovative technologies for recovery and recycling. Plastic Credits can also be used to mobilize additional financial contributions from actors not obligated under existing EPR systems.
#3	**Boosting Operations:** The reporting and verification requirements of the Plastic Program can promote best practices and provides a framework for regulators to prepare local operators' capacity to meet operational performance requirements.	**Boosting Operations:** Plastic Credits help mobilize funding for scaling essential infrastructure needed to increase recycling rates. Projects registered with the Plastic Program promote best practices for operational due diligence and can drive greater system improvements, such as supporting waste pickers and underserved communities.	**Strengthening Administration:** Plastic Credits can be integrated into existing or enhanced platforms to further improve the traceability of real outcomes. The established framework of the Plastic Program and Verra's public digital registry can be leveraged to harmonize measurement and reporting across various PROs.

5.2 Stakeholder-specific Opportunities

To realize the full potential of EPR systems, stakeholders can leverage the opportunities presented by Plastic Credits to address their own priorities:

1. PRODUCERS:

- In the **initiation phase**, producers can purchase Plastic Credits to demonstrate leadership and prepare for impending EPR regulations by activating investment in collection and recycling infrastructure.
- During the **transition phase**, producers can leverage the Plastic Program framework to measure and demonstrate the outcomes of their investments, ensuring EPR fees drive tangible results. Collaborating with informal sector actors, such as waste picker cooperatives, can enhance social and environmental benefits.
- In the **mature phase**, producers can generate Plastic Credits by testing innovative approaches, targeting new materials, and exceeding regulatory requirements. Producers can also continue to invest in Plastic Credits which can position them as industry leaders while reducing costs over time.

2. GOVERNMENTS:

- In the **initiation phase**, governments can use Plastic Credits to create an enabling environment for voluntary investments in waste management and can leverage the Plastic Program's administrative frameworks to ensure transparency and accountability.
- In the **transition phase**, governments can formally incorporate Plastic Credits as a mandatory or voluntary compliance instrument, streamlining monitoring and enforcement through Verra's public registry and the Plastic Program's reporting mechanisms. This approach reduces administrative burden and ensures uniformity in tracking progress.
- In the **mature phase**, governments can use Plastic Credits to incentivize industry innovation to meet higher performance targets, such as expanding recovery and recycling systems for new materials and in underserved areas.

3. WASTE MANAGEMENT OPERATORS:

- In the **initiation phase**, organizations can certify their activities with the Plastic Program, which help demonstrate operational, administrative and environmental excellence which is crucial for accessing additional funding for infrastructure and operations.
- During the **transition phase**, certification with the Plastic Program can help waste processors demonstrate operational excellence, making them competitive for limited funding opportunities while meeting EPR system requirements. This can also create opportunities for smaller actors, such as micro, small, and medium enterprises and informal sector cooperatives to participate equitably.
- In the **mature phase**, generation of Plastic Credits can provide waste management operators with investment security, enabling financing for research and development, new equipment, and enhanced operational practices to meet circular economy goals.

5.3 Addressing Limitations of Integrating Plastic Credits in EPR Development

Alongside the potential benefits of integrating Plastic Credits in EPR development, there are some real and perceived limitations.

Some worry that Plastic Credit Mechanisms distract efforts to implement EPR or compete with existing EPR systems and create a "race to the bottom". The concern is misplaced as compliance systems in general may create a "race to the bottom," prioritizing low-cost solutions that do not cover the cost of waste management services. To mitigate this risk, governments can establish a minimum price for a Plastic Credit when used for compliance purposes, which is similar to establishing minimums or standard fees for services in EPR systems. This would mean that funds generated are more likely to cover the real costs of collection and recycling. And many actors that generate Plastic Credits would welcome well-designed EPR if it meant sustainable revenue to support their activities.

It is a risk that poorly designed EPR pr plastic credit systems may risk not equitably sharing financial benefits with all value chain actors, particularly informal workers. Use of the Plastic Program to certify projects reduces this risk because projects are required to consult with all impacted stakeholders and implement social safeguards such as benefit sharing mechanisms, avoidance of income displacement, and equitable payment of workers. In some cases, the requirements underpinning Plastic Credits are more stringent than the local EPR mandates. Requirements for detailed technical documentation and third-party auditing mechanisms further strengthen the quality of Plastic Credit projects, even beyond the acceptable standard of the local EPR mandates.

Another misconception is that Plastic Credits are a short-term solution that does not support longer-term infrastructure development. However, Plastic

Credits are designed to mobilize the finance necessary to establish and scale the infrastructure crucial for successful EPR implementation. It is especially true when EPR has targets that increase over time that cannot be achieved with existing infrastructure. At inception, many Plastic Program projects are designed to operate for at least seven to ten years. The time and investment required for registering and verifying projects reflects project developers' commitment to sustained long-term impact.

Finally, it is often misinterpreted that Plastic Credits, or other measures addressing downstream actions could undermine upstream action. Analysis has shown that it's a false dichotomy, and both upstream and downstream interventions are needed to significantly abate plastic pollution (Pew Charitable Trusts and SYSTEMIQ, 2020). Crediting mechanisms that focus on downstream interventions do not compete with upstream actions. Rather, they deliver measurable, high-quality outcomes while upstream measures are being developed and scaled. In fact, robust downstream systems are essential to the success of upstream interventions — for example, recycling infrastructure must be in place for products that are redesigned to be recyclable. Moreover, by placing a price on waste management, crediting mechanisms create an added incentive for companies to reduce plastic use and design more sustainable packaging earlier in the value chain.

Plastic Credits are not a panacea for securing the significant sustainable financing needed to end plastic pollution, and neither is EPR. However, they should both be considered one of many tools that will be required in a blended suite of interventions customized for each country. Where certification programs are integrated into EPR systems, governments should require the use of high-quality programs such as Verra's Plastic Program to ensure that outcomes are trusted.

5.4 A Collaborative Path Forward

The integration of Plastic Credits into EPR systems underscores the importance of collective responsibility in combating plastic pollution. Each stakeholder group—producers, governments, and waste management operators—has a vital role to play in advancing system performance, fostering innovation, and driving sustainable outcomes.

The path to effective EPR implementation is long and complex, but the lessons outlined in this discussion paper demonstrate that progress is achievable through innovative solutions, inclusive approaches, and sustained commitment from all parties.

Plastic pollution is a multifaceted issue, requires significant investment into infrastructure, regulatory, and data management systems in emerging markets and developing economies, and must equitably include all stakeholders involved in existing waste management systems. Neither EPR or Plastic Credit alone is insufficient to meet the environmental, social, economic, and infrastructure needs associated with plastic waste management. Instead, they should be integrated into a broader suite of innovative policy and financial instruments to drive systemic change and sustainable impact (OECD 2024).

As emerging markets and developing economies work towards developing resilient and effective EPR systems, Verra's Plastic Program offers tools and frameworks to support this journey. By directing finance to high-quality projects, Plastic Credits can support the development of local waste management capacity and infrastructure. The mandatory third-party audit, monitoring, reporting and verification framework of the Plastic Program ensures integrity while relieving governments of extra administrative burden. The program's established stakeholder engagement and social and environmental safeguards requirements also ensure that the informal sector is not excluded from EPR systems.

Together, governments, producers, and waste management operators can harness the potential of Plastic Credits to overcome challenges, seize opportunities, and realize the potential of EPR systems.

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