The Recycling Partnership
Building a Better Recycling System

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Getting Started:

A Guide to Well-Designed, Implementable Extended Producer Responsibility (EPR) for Packaging and Printed Paper

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List of Acronyms

EPR Extended Producer Responsibility

MRF Materials recovery facility

PRO Producer Responsibility Organization

REM Responsible end market

Introduction

Extended Producer Responsibility (EPR) is a policy tool that directs brand owners and manufacturers (i.e., “producers”) to manage products and packaging from design to end-of-life. As U.S. policymakers at the national and state level navigate the interconnected limitations in the country's recycling systems, increasing pressure on municipal recycling budgets, and increases in plastic pollution, EPR for packaging has become a key legislative tool to address all three issues in tandem.

Recycling is the workhorse of a circular economy. The aging and underfunded U.S. recycling system is at a critical juncture, with municipalities and individual households unable to pay for the needed upgrades. While some states have higher recycling rates than others, The Recycling Partnership's (The Partnership's) *Paying it Forward Report* estimates that the United States (U.S.) loses 37 million tons of valuable recyclable packaging and printed paper materials to landfills and incinerators each year. To fully update U.S. recycling systems, The Partnership estimates that a $17 billion investment is needed, which can produce a return of over $30 billion in economic benefits and create almost 200,000 jobs over 10 years. EPR for packaging is a proven policy that can help jurisdictions close the recycling gap to save precious natural resources, reduce greenhouse gas emissions and plastic pollution, and boost the local economy.

To date, seven U.S. states have passed an EPR for packaging law: Maine, Oregon, Colorado, California, Maryland, Minnesota, Washington. While the core of each state’s EPR law requires producers to fund the operational, infrastructural, and educational costs of recycling, each law also has its own unique approach. These differences can make it hard for policymakers exploring EPR legislation in new jurisdictions to understand which model to prioritize.

The Partnership has developed this guidance memo as a tool for national and state policymakers as they navigate the complexities of EPR legislation. Specific policy approaches outlined in the guidance memo capture the core requirements of a well-designed and implementable EPR for packaging law, distilled from The Partnership’s years of leadership in state EPR for packaging negotiations. While some states' EPR laws have packaging requirements that are not addressed in this guidance memo, The Partnership is happy to discuss any policy measures with interested policymakers.

At the heart of well-designed, implementable EPR for packaging laws are several key elements, outlined in greater detail in the sections below:

- Clear **definitions** of covered materials, producer, recycling, and recycling rate
- A program that includes the **full range of packaging and printed paper** intended for household consumers
- A **Producer Responsibility Organization (PRO)** that is responsible for gathering packaging data from producers, developing a fee schedule — including eco-modulation — approved by the oversight agency and advisory board, collecting fees from producers, and developing a program plan outlining key performance metrics for the program and how the PRO will achieve those metrics
    - **Performance metrics** should include material-specific collection and recycling rates, collection convenience standards, inbound contamination standards, and material-specific recycled content standards
- Clearly sequenced **timelines** that allow the PRO, the oversight agency, the advisory board, and producers to successfully develop the program
- Allowance for producers to **comply individually** with the EPR law
- A **needs assessment** developed by the PRO that provides the underlying data needed to set performance metrics in the program plan
- An **advisory board** representing a diverse set of interest holders that provides advisory input on the needs assessment, PRO plan, and PRO annual reports but does not have regulatory or decision-making authority
- Development of a standard, **jurisdiction wide recyclables materials list**, created by the PRO and approved by the oversight agency and advisory board, with clear onramps for new materials as infrastructure investments allow new materials to be collected for recycling
- Clear requirements for **responsible end markets (REMs)**, aligned with requirements in other EPR states.

Policymakers also often express confusion about the various actors involved in the EPR legislative and implementation process.

- To help clarify the “who’s who” of EPR, sections 1 and 2 of the guidance memo will explore the recycling system, its actors, and their roles in the recycling system.
- Additional sections will address the elements above in further detail.
- The final two sections of the guidance memo will address best practices for incorporating post-consumer recycled content mandates, plastic source reduction, and reusable and refillable containers, if policymakers wish to include those elements in proposed legislation.

Developing a full EPR for packaging bill is a significant undertaking, requiring expertise. Please feel free to reach out to The Partnership with any questions.

1. The Recycling System and EPR

Recycling in the U.S. is a dynamic system that has evolved over many decades from local neighborhood collection efforts into a multibillion-dollar industry. Yet even with the size of the recycling industry, local governments are still often in charge of either directly collecting recyclables or at least managing and funding contracts for recycling. Where municipalities do not manage recyclables, individual households may be required to hire a company to collect their recyclables for them.

The Recycling System

The recycling system does not start with collection. Recycling instead starts with the packaging choices made by brands for the products that are available on store shelves or online. Which package to use for a product is a complex decision involving functional considerations such as product protection, cost of the packaging, and sustainability. Ultimately, the choices brands make impact the recycling system. As packaging has become lighter and more complex, the recycling system has struggled to keep up. Because of those complexities, lots of packaging is not considered recyclable in many programs across the U.S.

For packaging that is considered recyclable, capturing that material from homes is a major hurdle. For materials to be recycled, households need to have **access** to recycling services, understand the nuances of what and how to recycle, and then actively **participate** in the collection of recyclables. Household participation in recycling means households need to set carts out for collection, but also means households need to know what can and should go in the bin, and what should not. This means having appropriate bins and convenient collection, combined with clear and consistent education and messaging. The Partnership's 2024 *State of Recycling Report* found that while 73% of U.S. households have access to recycling services, only 43% of those households actively participate in recycling. This means that only 21% of residential recyclable material is recycled.

After collection, materials are taken to sorting facilities called materials recovery facilities, or MRFs. At the MRF, a complex set of conveyer belts, optical sorters, and workers separate paper and cardboard from plastic water bottles and aluminum cans. The final products are bales of commodity-grade recyclables. While MRFs successfully sort many packaging and printed paper types, many facilities are in desperate need of infrastructure upgrades.

Commodity bales are then sent to a processor, which may also be referred to as the end market. For paper and cardboard, the processor is a paper mill. For metals, the processor is a smelter. For glass, usually a beneficiation plant takes glass shards and remelts them for use in new glass products. For plastics, processing can be more complex, involving additional sorting, shredding, and washing of the plastic, followed by a step to melt it and produce pellets that are then introduced into new packaging.

Emerging plastic recycling technologies may also use solvents to skip several of these steps. Finally, fully processed materials are ready for sale back into the production of new products or packaging.

Funding Limitations for Local Governments

While recycling starts with producer packaging choices, the engine of the system is municipal tax dollars. Without dedicated funding from local governments around the country, free market demand for recycled materials would not cover the cost of collection and processing at scale. When MRFs sell sorted materials to processors, the value may partially offset some of the costs for some municipalities, but if there are financial shocks to the system, those are absorbed by local governments and ultimately by the taxpayers.

The cost of recycling to local governments is influenced by:

1. **Strength of markets for recycled materials**. Recycled materials must always compete with virgin materials. If virgin materials are cheaper than recycled materials, brands will usually opt to purchase virgin materials unless consumers demand sustainable packaging or policy requires that brands incorporate recycled materials.
2. **Complexity of packaging.** More complex packaging such as multi-material films and flexibles have many benefits for delivering products to customers, but they are difficult to recycle. They can become tangled in machines at MRFs or can flow to the paper line, contaminating paper bales. Even if complex packaging is collected and appropriately sorted, the low market value does not create a compelling financial drive for recyclers and municipalities.
3. **Contamination.** If households place non-recyclable materials in the bin, MRFs must sort and dispose of contamination, increasing operating costs. If contamination is not properly extracted by MRFs, contaminants either reduce the quality of the recycled material or raise costs for processors, making recyclable material less valuable.

Despite these limitations, local governments and recycling companies have invested billions of dollars into the recycling system, circulating millions of tons of recycled materials back into the economy each year. Each ton of recycled materials saves precious natural resources, reduces greenhouse gas emissions and plastic pollution, and boosts the local economy.

Well-Designed EPR Addresses Weaknesses in the Recycling System

The Recycling Partnership estimates that $17 billion is needed to recover the 37 million tons of recyclable materials sent for disposal each year in the U.S. That lost material represents $30 billion in lost economic activity and is a significant waste of precious natural resources. With municipal budgets strained across the nation, it is impossible to expect local governments to fill this gap. Instead, states are adopting EPR laws for packaging and printed paper that financially connect the brands placing packaging on the market with the recycling system.

EPR for packaging and printed paper is a proven policy adopted around the world. Well-designed EPR will support:

1. **Packaging designed for recycling.** Well-designed EPR places several direct financial incentives on brands to ensure their packaging is designed for the recycling system.
2. **Access and participation.** Dedicated funding from brands through well-designed EPR ensures households have universal, convenient, and equitable recycling services. Well-funded education and outreach campaigns can spur households to participate and raise the likelihood that packaging gets placed in the bin, reducing plastic pollution.
3. **Investments in MRFs.** Well-designed EPR directs brand funding toward critical sorting infrastructure in MRFs, ensuring MRFs can appropriately sort recyclables into high-value commodity bales.
4. **Higher processing capacity at end markets.** Well-designed EPR injects significantly more high-value material into the local economy, creating the business case for new processors. In addition, well-designed EPR requires brand funding to invest in end markets, driving local jobs and expanding regional economic activity.

2. EPR and Its Key Actors

The primary function of an EPR system is to improve and deliver the circular economy for a given jurisdiction to encompass federal opportunities. EPR works in different ways but simply put; the producers or brands of products pay small fees on the covered packaging and printed paper (including newspapers, magazines, office paper, or direct mail), a target material. The PRO, a nonprofit organization created by brands to deliver specific recycling goals laid out in the EPR law, collects these fees.

The PRO then lays out a plan to achieve a particular recycling rate, and an advisory board composed of key actors in the recycling system reviews this plan. Once the advisory board has reviewed the plan, the appropriate environmental regulatory agency ultimately approves the plan.

After the plan is approved, the PRO will contract either directly with municipalities or with the hauler or service provider delivering recycling services to a given community, and they will reimburse or direct the activities of that hauler. They will also help pay for the sortation of the material once it is collected, ensuring reduced contamination and high-value material commodity bales. The PRO may also help pay for system improvements to recycling infrastructure and processes. The cost for this range of products and services is then divided between each piece of packaging sold within a particular jurisdiction based on the underlying recyclability, sustainability, and market value of material.

Several distinct yet collaborative sectors are the key actors in EPR programs:

- Residents/Consumers
- Brands (producers)
- Producer Responsibility Organization (PRO)
- Advisory board
- Oversight agency
- Local governments
- Haulers
- Materials recovery facilities (MRFs)
- Processors (end markets)

Residents, local governments, haulers, MRFs, processors, and the relevant oversight agency have historically been the key actors in the recycling system. Under EPR, new actors in the recycling system include brands, the PRO, and the advisory board.

Residents/Consumers

Households are a linchpin for recovering and recycling consumer packaging and printed paper products. Without universal, convenient, and equitable access to recycling, material recovery and recycling rates will remain low. EPR investments in collection capacity and education are critical to ensure as much material is recycled as possible.

Brands (Producers)

In general, the "producer" is the brand owner whose name is on the packaging. Think of the names you see walking up and down the aisles of a store — more likely than not, the owner of that brand is the producer. When a brand name is not placed on a package or printed paper, the obligated producer is typically the company that manufactured the product and/or package.

Because the PRO manages most of a producer's compliance steps, each individual producer's role is straightforward unless a producer is complying individually (***see Section 10***). Producers must register with the PRO, collect their packaging and/or printed paper data, report the data to the PRO, and then pay fees based on the type and weight of packaging and/or printed paper from the producers supplied into the jurisdiction.

Smaller producers should be allowed to pay flat fees to the PRO to reduce administrative burden, and very small producers (less than $5 million in gross annual revenue) should be exempt from all requirements.

Under EPR, producers will also be incentivized to change their packaging design to be more recyclable and be required to achieve recycled content goals for packaging and/or printed paper. These actions must be coordinated with the PRO, but the actions must be taken by each individual producer.

An obligated producer is an entity (including for-profit and nonprofit) that places packaging or printed paper into the regulated market in greater quantities than the *de minimis* amounts. The obligation should extend to all packaging and printed paper that may enter the municipal waste management system, regardless of whether it is recycled, composted, or disposed of. Examples of obligated producers include:

Brand owners, including retail brands and takeout restaurants, for packaging and printed paper that will be disposed of by the consumer (not including packaging that may stay at the retailer).

Retailers for all packaging and printed paper related to their private label products, service packaging, printed fliers, and products they import that do not have an obligated producer.

- Service packaging, or point-of-sale packaging, is packaging added by a retailer and can include bags provided at checkout, packaging added at the deli, and bakery or prescription containers when the pills are removed from the original container.

E-commerce sellers for all packaging and printed paper from their private-label products, packaging, or printed paper they add to branded products (e.g., shipping or transport packaging), and products they import that do not have an obligated producer.

Producer Responsibility Organization (PRO)

The PRO is a joint compliance organization made up of producer members that is tasked with several key requirements in the EPR program. EPR legislation often requires that the PRO have producers on its board. To date, two PROs have been approved for packaging EPR in the U.S.: Circular Action Alliance and the Lubricants Packaging Management Association. In the EPR program, the PRO is front and center, acting as a conduit between the other actors in the system.

The approved PRO manages many of the requirements of the EPR program. Most importantly, the PRO is tasked with developing a program plan, which outlines how the PRO will achieve the program objectives specified in the EPR law. This includes a proposed fee methodology, performance targets, needed investments in recycling infrastructure, an education and outreach plan, and any other requirements specified in statute.

Advisory Board

The advisory board is a nonregulatory oversight group composed of a diverse set of representatives from all types of actors in the system. The advisory board should review the needs assessment, the PRO program plan, and annual reports submitted by the PRO to the oversight agency. The advisory board should not have regulatory or decision-making authority, with that role reserved for the oversight agency.

A good advisory board will have an open and consistent level of discourse with the PRO. This level of communication can help build a high-performing program plan by drawing on lessons from members on both sides. While the advisory board may have significant communication with the PRO and may be administered by the agency, it should function as an independent body.

> *Colorado's advisory board is a great example of this level of collaboration; they have held regular meetings with the selected PRO and formed technical working groups to inform specific aspects of the program plan development.*

Relevant Oversight Agency

The oversight agency oversees the program's development and operation. This includes reviewing and approving the needs assessment and the PRO's program plan. The oversight agency must also develop rules to implement the program. The oversight agency's costs are almost always funded by the PRO.

Local Governments

Traditionally, local governments have been central to the recycling system. In many cases, it is towns, cities, and counties that either directly provide recycling collection through curbside or drop-off services or manage the contracts with haulers and MRFs for provision of service. Waste management — including recycling — is a significant cost for local governments, and EPR helps offset some of those costs. Often, local governments want to maintain their current role in recycling provision even under an EPR program in exchange for reimbursement by the PRO.

Haulers

Haulers are the private companies that collect recyclable material and deliver it to a MRF for sorting. If a hauler has a contract with a local government, under EPR, the PRO will simply reimburse the local

government for its estimated recycling costs with its existing hauler. In geographic areas where a local government does not manage or contract for recycling services, haulers will be contracted by the PRO directly for provision of recycling service. Haulers and local governments will also need to adopt the education and outreach materials developed by the PRO and may be required to improve collection service to meet convenience standards.

Materials Recovery Facilities (MRFs)

MRFs sort recyclable material into market-ready bales, which are then sold to processors (i.e., end markets). In addition to separating recyclable material into market-ready bales, MRFs sort out non-recyclable contamination from the recycling stream and send it for disposal. Under EPR, MRFs may be contracted directly by the PRO, but they may also be funded through existing contractual relationships with haulers and local governments, who are in turn reimbursed by the PRO (as described above). The PRO may also provide funding for MRF infrastructure upgrades, such as new machinery for sorting specific materials.

To comply with the EPR program (see Section 8), MRFs may be required to report where bales of material are sold to ensure materials are sent to processors that meet the program's requirements.

Processors (End Markets)

Each material type has its own unique processing requirements. Metals must be sent to smelters, glass to beneficiation plants, paper to pulping mills, and plastics to facilities that wash, melt, and then pelletize or extrude the material. EPR laws usually refer to these facilities as “end markets.” Under EPR, end markets benefit from larger quantities of better-quality material more consistently, increasing the supply of recycled content for producers.

Historically, the end markets to which MRFs send material have not been transparent, generating concerns about international shipment of materials to under-regulated foreign processors. Transparency requirements (see Section 8) will require that end markets be screened for environmental and labor standards.

3. Clear Definitions

The Partnership has identified several definitions that are critical for implementable, well-designed EPR for packaging. In addition to ensuring each jurisdiction's program functions smoothly, adopting these definitions across states will also help make sure state programs are harmonized. More harmonization

across jurisdictions makes implementation easier for producers, PROs, and oversight agencies and lowers overall costs of the program.

Include the Full Range of Possible Covered Materials

In EPR laws, the covered materials are the different types of materials that must be included in the program. Because funding from the PRO is meant to cover commingled recycling, and EPR is also intended to target nonrecyclable packaging and printed paper, The Partnership supports including the full range of packaging and printed paper materials intended for household consumers, with few and minimal exemptions.

In addition, even highly recyclable materials like paper and aluminum cans cost money to collect, and these materials should not be excluded simply because they do not disrupt the recycling process.

To reduce complexity in the legislation, printed paper, packaging, and any packaging-like products (think utensils, plates, bowls, and wraps) should each be defined separately, with all subcategories of covered material grouped under the parent definition of “covered material.”

Align the Definition of Producer with Washington, Minnesota, and Maryland

Generally, The Partnership encourages that jurisdictions define the producer as the brand owner. Washington, Minnesota, and Maryland have all adopted nearly identical definitions of producer, creating a standard for others to follow. Jurisdictions with similar definitions of producer make compliance easier for relevant agencies, the PRO, and producers themselves.

Recycling Should Exclude Disposal or Production of Fuel

While most people have a sense of what “recycling” means, the specific definition of recycling is important to ensure that materials are recycled back into the economy. The Partnership recommends that a jurisdiction's definition of “recycling” means transforming materials into usable or marketable products and excludes any material sent for disposal — including landfill and incineration — or production of fuel.

Where new recycling technologies are introduced, The Partnership seeks for those technologies to be planet-positive, transparent, and measurable.

Recycling Rate Should Allow Performance Standards to Be Met by the PRO

The definition of recycling specifies the processes that count as recycling, but recycling does not define the methodology for measuring recycling rates. Since the recycling rate target is a key performance metric under an EPR program, clearly defining the intended methodology for recycling rates is important.

The Partnership recommends that the recycling rate methodology define materials sent to an end market for recycling as the numerator and set the denominator as all materials generated in the jurisdiction that are not reusable or compostable.

In measuring the recycling rate, the oversight agency should also be empowered to use a variety of data sources to verify which materials are generated in the jurisdictions. Sources can include producer data reported to the PRO, waste characterization assessments, and other relevant data sources.

Numerator – Materials sent to end markets for recycling

Denominator – All single-use, noncompostable covered materials introduced into the state

4. Producer Responsibility Organization and Performance Standards

In an EPR program, the PRO is the link between producers, the oversight agency, local governments, and the waste and recycling sector. The PRO has two primary responsibilities:

1. To identify and register producers so they can report their packaging and printed paper data and pay fees
2. To develop and implement the EPR program

Well-designed EPR laws require the PRO to develop recommendations for many of the key elements of an EPR program through a comprehensive program plan, which is then reviewed by the advisory board and approved by the oversight agency. The program plan describes how the PRO will operate the program on behalf of producers.

Structure of the PRO

EPR programs around the world have experimented with different PRO structures. The Partnership advocates for the PRO to meet the following structural requirements, which reflect the best outcomes for new programs:

1. **The PRO should be organized as a 501(c)(3) organization.** Requiring that the PRO be a 501(c)(3) means the PRO is subject to a greater degree of financial scrutiny than other corporate structures and helps to minimize concerns regarding monopolistic or anti-competitive conduct.
2. **The PRO's board of directors should be composed of producers**. The PRO's leadership should reflect the diversity of obligated companies under an EPR program, including annual revenue size, material types, formats, and product types. In addition, material trade associations can hold non-voting board seats to provide technical expertise. Other key actors should be represented through the advisory board and the oversight agency.

One Versus Multiple PROs

Experience globally and in the U.S. has demonstrated that a single PRO that functions across multiple jurisdictions is the most effective model. For example, PaintCare operates programs in 10 U.S. states and the District of Columbia for paint EPR, the Mattress Recycling Council runs the Bye Bye Mattress program in three states, and Call2Recycle has programs in seven states with mandatory battery recycling programs. A single, multi-jurisdiction organization offers:

1. **Consistency:** harmonization among jurisdictions, where possible
2. **Lower costs for producers:** reduced PRO administrative and operational costs
3. **Lower enforcement costs:** reduced enforcement costs for regulatory agencies
4. **Single compliance point for producers:** easier compliance for producers by allowing a single reporting portal.

The single-PRO model can work in tandem with jurisdiction-specific advisory boards that can provide feedback and engage with the PRO on jurisdiction-specific challenges.

Primary Responsibilities of the PRO

The PRO's primary responsibilities can be grouped into several broad categories and are explored in more depth in the following sections.

PRO Responsibilities		
Planning	**Financial**	**Engagement**
• Execute needs assessment • Develop program plan to achieve statutory goals (every five years) • Submit annual reports to the oversight agency and legislature • Propose performance targets to be approved by the regulatory agency	• Define annual budget for program • Set fees for producers • Collect fees from producers • Disperse fees to eligible entities (haulers, MRFs, local governments, end markets) based on program plan	• Conduct outreach to producers • Involve the public and key actors in review of the needs assessment and program plan • Conduct outreach to environmental justice communities and those with a first language other than English • Maintain communications through webinars, social media, public meetings, and direct outreach

Planning

The PRO has two primary planning responsibilities: executing a **needs assessment** and developing a **program plan** based on the needs assessment. The needs assessment should be conducted by the PRO and provide a robust picture of the current capacity of the jurisdiction's recycling system and investments and the upgrades needed to improve it. In addition, the needs assessment must include key recycling system cost information needed to inform the PRO's fee setting.

The program plan is a comprehensive document developed by the PRO that describes how the PRO will develop the program requirements in the EPR law. Through the program plan, the PRO must address:

- its education and outreach plan for households
- the fee methodology used to collect fees from producers

- the reimbursement model used to pay local governments, haulers, and MRFs
- infrastructure investments to improve recycling
- proposed performance targets for approval by the jurisdiction agency

The program plan is referred to extensively throughout the rest of the guidance memo.

Financial

The core function of the PRO is to determine the necessary annual program expenses based on the needs assessment, outline the reasonable costs of delivering services, and allocate those expenses through fees paid by producers. To facilitate the collection of fees from producers, the organization must develop a procedure for producers to submit the type and quantity of packaging and printed paper that the producer placed on the market in the jurisdiction.

The PRO must also develop operating agreements with service providers, determine granting and financial transfer mechanisms to fund the activities and investments required to implement and operate the program, and implement auditing procedures to ensure that jurisdiction-specific reporting, particularly on financial transactions, is accurate.

The process for setting fees is described in more detail in Section 6, and the process for dispersing funds to local governments, haulers, MRFs, and end markets is described in more detail in Section 9.

Engagement

As the link between the different actors in the system, the PRO also acts as a central communicator and focal point for planning. The PRO must conduct outreach to producers, develop relationships with local governments, haulers, MRFs, and end markets, and develop a compelling education program to ensure households participate in the program. These activities typically include maintaining a website and social media presence, investing in paid and in-kind advertising, and providing education and outreach materials to community programs.

Performance Targets

Clearly defined performance standards are critical to the success of producer-funded recycling programs around the globe. Performance targets must be achievable, based on data included in the needs assessment, and proposed by the PRO for approval by the oversight agency.

Such standards should be enforceable in that the PRO or individual companies can face penalties or other enforcement actions for failure to achieve them. Well-designed EPR should include the following performance standards:

1. **Collection rate targets:** Quantitative collection targets expressed as an overall goal or defined by material category or type, using the reported generation of covered materials as the denominator and the amount of material recovered at the point of collection as the numerator.

2. **Recycling rate targets:** Quantitative recycling targets expressed as an overall system goal or defined by material category or type, using the reported generation of covered materials as the denominator and the amount of material sent to end markets as the numerator. Material-specific targets are helpful in defining benchmarks and driving continual improvement (see Section 5).

3. **Collection convenience/access standards:** An approach for achieving widely available recycling services, which define expectations for regulatory assessment (e.g., “recycling as convenient as waste collection”).

4. **Inbound contamination rates:** The amount of contamination, or non-commodity material, in loads being delivered to the MRF from curbside collection routes and drop-off locations; the PRO’s plan should define baseline and target inbound contamination rates, on a path of continual improvement.

5. Material Categories and Jurisdiction Wide Recyclability Lists

At the heart of a well-designed EPR program is clear data, and the key to obtaining clear data is to establish clear material categories. Material categories are the classifications defining the different types of packaging and printed paper in the program, whether the material is recyclable or not. Once defined, the material categories become the basis for producer reporting, the fees paid by producers, the performance targets, and designating whether a material is recyclable.

Material categories **should not be set through the law**. Instead, either the oversight agency or the PRO should develop the categories early in the implementation process.

Producer Reporting and Material Categories

Material categories must be established for producers to report the type and quantity of packaging they market in the jurisdiction. Producers also need sufficient time to gather and prepare their data to ensure it is aggregated into the correct material categories. Therefore, it is critical for the PRO to have material categories early in the implementation process.

Producer Fees and Material Categories

Fees paid by producers to the PRO are based on the type and quantity of packaging and printed paper reported by each producer. The fees must be set by material type, and the material types must match the categories of packaging and printed paper that producers use for reporting.

Fee-setting is described in more detail in Section 6.

Performance Targets and Material Categories

Collection and recycling rate targets should be set with the numerator as the materials collected for recycling (collection target) and sent from an MRF to a processor (recycling target), and the denominator as all materials that are not reusable or compostable that are generated in the jurisdiction. In addition, collection and recycling targets should be set for any material category that is considered recyclable. The additional granularity targets laggard materials, ensuring that high-performing material categories do not mask low-performing categories.

Recyclability Determinations

Because EPR programs include both materials that are recyclable and those that are not, the oversight agency or PRO must be required to develop a list of materials that are: a) curbside recyclable, b) recyclable through an alternative collection program, or c) not recyclable. Fees should be higher for non-recyclable materials, providing an incentive for producers to either invest in recycling infrastructure or switch to more recyclable packaging formats.

To make recyclability determinations, the oversight agency and PRO should consider, at a minimum, the following factors:

1. **Availability of end markets:** stability, maturity, accessibility, and viability of end markets for the material
2. **Compatibility with the existing system:** whether the material can be managed using current infrastructure
3. **Amount of material:** investments or upgrades to MRFs may not be viable for small amounts of a specific material type.

6. Base Fees for Producers

Once the PRO has established the program costs, which are identified through the needs assessment and described in the program plan, the PRO can develop base producer fees that cover the program costs. Fees should be set based on the type and quantity of material the producer supplied to the jurisdiction, and fees should be differentiated by material category.

The formula used by the PRO to develop fees should be guided by principles designed to ensure fair application of fees across material categories. Fees should differentiate material categories and types based on their impact on the cost of the recycling system. The EPR law should include criteria that guide the principles developed by the PRO, including:

1. **Specific to each material category:** Fees should reflect the physical characteristics of the material categories and types and the cost to collect and process each material type.

2. **Value of the material category or type:** Fees should factor in the commodity revenue from the sale of the recycled materials.

3. **Flat fee and *de minimis* exemptions:** Fees should include a simplified flat fee payment for smaller companies, and *de minimis* exemptions for very small brands (less than $5 million in gross annual revenue).

While the fee principles and fee-setting formula can be developed with a long-term view, the data used to determine fees should be re-evaluated annually to ensure they account for current market conditions (e.g., cost and revenue), technical progress, and other emerging trends.

Setting Base Fees

The formula for fee-setting includes two parts, which must be clearly delineated in the EPR law. First, the PRO uses cost data from the needs assessment and the PRO's proposed budget to develop **base fees**. Base fees reflect the different material categories and incorporate recyclability and recycling cost factors into each material category's fee. Then, once the program has been launched, each producer's individual fees can be increased or decreased based on certain environmental factors to incentivize more sustainable packaging. This alteration is called **eco-modulation** (see Section 7)**.**

Fee-setting is an incredibly complicated, data-driven process to ensure that fees are fair, accurate, and sufficient to fund the program. The steps in the process usually include:

Step 1: System costs. The PRO uses existing jurisdiction recycling data and information from municipalities, haulers, and MRFs to develop a full program budget.

Step 2: Allocation of material costs. Once the PRO has a program budget, the PRO uses data from recycling facilities and modeling to develop a cost per material type.

Step 3: Additional system costs. Once costs per material type are defined, the PRO estimates any additional investments that should be made for individual material types.

Step 4: Administrative costs. Any costs that are not specific to a material type (administrative costs, education and outreach costs, etc.) are added to all material types.

Step 5: Producer data. Once costs per material type are known, the PRO must factor the *material category* costs with the total amount of material reported by producers. This step delivers a cents-per-pound for each material.

After these five steps, the PRO can provide producers with their specific fees for the next year. Usually, the PRO's system-cost assessment is redeveloped every several years, while the material revenue and administrative costs may fluctuate year by year. It is important to note that producer fees may decrease as more producers (and therefore more material) are reported. For this reason, producers and the PRO have a strong incentive to ensure all producers are reporting and paying fees into the program.

Producer Payments

Producers should be required to remit fees each year, based on the previous year's data. During program implementation, the PRO should be required to collect fees before the program begins to ensure the PRO is properly funded.

7. Eco-Modulated Fees

Policy discussions of EPR often focus on the environmental incentives EPR places on producers, including incentives to improve recyclability of packaging. These incentives are combined in a single term — **eco-modulated fees** — that are applied to a producer's fees *after* base fees have been set. Eco-modulation is often conflated with base fees and leads to confusion among legislators, regulators, and other interest-holders during implementation.

While base fees incorporate the recycling cost of each *material type* at the category level, eco-modulated fees focus on the environmental attributes of each *individual producer's* packaging. These attributes may include recyclability of the packaging, incorporation of recycled content, and conformance of the packaging with industry design-for-recyclability standards. Eco-modulation should focus on:

1. **Incentivizing desired behavior.** The fee structure should offer bonuses for:
    a. Conformance with industry standards for recyclability
    b. Use of certified recycled content that is appropriately differentiated by the material category
2. **Penalizing design choices.** Design choices that negatively impact the recycling system should be panelized, including:
    a. Disruptors to existing recycling streams (e.g., use of PVC or oxo-degradable plastics, or non-separable plastic elements on paper packaging)
    b. Package elements that violate design-for-recyclability standards, such as the use of dark-color plastics that result in improper sortation, high percentages of additives in certain resins, addition of non-fiber components in paper packaging (e.g., certain adhesives or foils) that impact fiber re-pulpability, non-ferrous closures to glass containers, etc.

Determining Eco-Modulation

The specific eco-modulation factors used should be developed by the PRO in consultation with industry experts as part of the fee-setting process. The balancing of bonus and penalty factors is important and must be placed in context of the overall system financing needs. To the extent possible, eco-modulation factors should be aligned with other factors to strengthen the signals producers receive to redesign packaging.

Incorporating eco-modulation factors can have a positive impact on the system by reducing costs and/or increasing revenues. For example, increasing the use of recycled content and system circularity could lead to an increase in material commodity revenues. Improving conformance with design-for-recyclability standards could also improve material revenue and reduce system costs by improving the

sortability of materials and, therefore, their value. Reducing the presence of disruptors also can decrease system costs by making sorting more efficient and minimizing contamination that local governments and MRFs need to pay to dispose of.

Eco-Modulation Should Only Be Introduced Once the Program Is Established

Since eco-modulation changes the base fees for individual producers, without careful incorporation, eco-modulation can jeopardize the PRO's solvency. Until the PRO has collected several years of producer data, it is impossible for the PRO to accurately alter costs to individual producers while also ensuring the PRO collects sufficient funds. The Partnership recommends that the PRO be required to introduce eco-modulation beginning in the third year of program operation.

8. Responsible End Markets

Most of the packaging EPR laws enacted in the U.S. require material collected through the statewide program to move to responsible end markets, or REMs. This notion of regulating where collected recyclables go after processing is baked into some European and Canadian programs, but more recently developed U.S. legislation puts a larger focus on REMs than EPR initiatives in other parts of the globe. Indeed, the term "responsible end market" did not exist in the EPR lexicon before U.S. laws were developed and passed.

The REM emphasis in the U.S. stems from news reports between 2015 and 2020 that documented American recyclables dumped or mishandled in Southeast Asia and other overseas markets. To help ensure that collected materials would not negatively impact the environment or human health after being sold to buyers, authors of legislation integrated REM provisions into EPR bills. A key objective of such requirements is to help rebuild public trust in recycling.

In general, language around REMs in statute has remained vague, with details on end market criteria and reporting guidelines left to be spelled out in rulemaking and/or the program plans submitted by PROs.

It is also important to note that as the first U.S. EPR programs have moved deeper into implementation and the full scope of potential REM requirements have become better understood by companies within the recycling system, REMs have become a topic of debate in some states. End-market entities, such as paper mills and plastic product manufacturers, have expressed concerns that REM provisions require them to publicly report proprietary business information. Local governments, environmental groups, and others, meanwhile, see REM systems as an avenue to bring more transparency and accountability to a part of recycling that has traditionally existed with little oversight.

The Recycling Partnership encourages legislators considering EPR in their jurisdictions to closely monitor how REM verification systems are developed for other programs moving through implementation, particularly in Oregon and California, both of which have significant end market requirements. REM provisions can help EPR laws achieve their goals of catalyzing strong, more reliable recycling systems. But the concept remains new, and it will be important for REM frameworks to be built out methodically and with ample input and buy-in from all links in the recycling chain.

9. Recipients of Producer Responsibility Organization Funding

The specific activities and assets to be funded by the PRO will vary, depending on the situation in each jurisdiction and the outcomes of the needs assessment. The following table provides activities that could be targeted by producer-funded programs.

Activity	Type of Investment	Potential Funded Entities
Access to recycling	• Collection infrastructure (e.g., carts or bins, trucks) • Targeted outreach to launch new recycling programs, expanding collection to new types of generators (e.g., multifamily buildings), or adding materials to existing programs	• Municipal governments • Community-based organizations • Recycling service providers
Hub-and-spoke collection and processing systems	• Feasibility analyses • Infrastructure to enable material to be consolidated from remote locations (spokes) for efficient, centralized processing (hub)	• Municipal or regional governments • Recycling service providers
Education and outreach	• General promotion to increase participation • Anti-contamination programming designed specifically to improve the quality of the recycling stream	• Municipal governments • Community-based organizations • Recycling service providers (e.g., haulers) • Direct spending by the PRO • Trade associations

Activity	Type of Investment	Potential Funded Entities
Sorting infrastructure	• Equipment and technology to improve sorting and recycled commodity quality at MRFs	• Public and private sector MRF operators
Special assessments	• Collection, sorting, processing, or redemption infrastructure that specifically targets a particular material category (e.g., drop-off centers for glass), as well as related operational costs	• Trade associations • Municipal governments • Recycling service providers (e.g., haulers or MRFs) • Innovation fund/MRF operators
Cost of delivering services	• Costs associated with operating recycling programs, including staff, vehicle maintenance, and MRF tipping fees	• Local governments

10. Clearly Defined Timeline

There is no magic wand for implementing an EPR program. Once an EPR policy becomes law, numerous critical steps need to be taken in the proper sequence for the program to be operational. As the seven U.S. states that have enacted an EPR law have rolled their programs out, The Partnership has been in the front row to see what has worked and what has not. The following recommended timeline reflects an effort to balance a timely program launch with careful sequencing.

In total, The Recycling Partnership recommends a four-year implementation period for a smart, well-designed EPR law.

Year 1

Step 1. Select a PRO

Because the PRO is central to most of the implementation steps of an EPR program, the law should require that the oversight agency select a PRO as soon as possible. Generally, this can be six months after the passage of the law. The approved PRO should be part of the advisory board, provide input on the development of the needs assessment, and begin identifying and registering producers as soon as possible.

Step 2. Form Advisory Board and Register Producers

Once the PRO is approved, the oversight agency should convene the advisory board for preparatory meetings as implementation begins. The first meeting could be six months or one year after the passage of the law.

Producers must also be required to register with the PRO as soon as possible. Registration may be as simple as filling out a contact form supplied by the PRO. The Partnership recommends the deadline be six months after the PRO is selected. An early, enforceable registration deadline ensures the PRO can begin helping producers prepare for reporting.

Year 2

Step 3. Complete Needs Assessment and Develop Recyclable Materials List

After the PRO is approved, the PRO must undertake the development of the needs assessment. As part of the needs assessment process, the PRO should also develop a list of material categories and determine which material categories are considered recyclable and which are not. The list of recyclable materials will inform the fees set by the PRO, producer data reporting, and the performance standards to be achieved through the program.

The needs assessment is the critical source of information for the PRO's development of the program plan. Therefore, the needs assessment must be complete well in advance of the program plan submission deadline (see below).

Step 4. Conduct Rulemaking and Producer Data Reporting

While the PRO develops the needs assessment, the oversight agency must finalize a rulemaking process. Rulemaking should begin in Year 1. The rulemaking process is also a key input to the PRO's program plan and must be completed in advance of the program plan submission deadline (see below).

After the PRO has developed the list of material categories, the statute should provide six months for the PRO to prepare producers for packaging and printed paper data reporting. Producer packaging and printed paper data is critical for the PRO's fee-setting process. That data must be collected before the PRO can set a fee schedule and charge fees to producers.

Year 3

Step 5. Submit Program Plan to Advisory Board and Oversight Agency

At least six months after rulemaking is complete, the PRO must be required to submit a program plan to the advisory board and the oversight agency for review and approval. Generally, each should have at least 60 days to review and approve, or deny subject to revision, the PRO's program plan.

Step 6. Approve Program Plan and Charge Producer Fees

After the PRO's program plan is approved, the PRO can finalize a fee schedule and charge fees to producers. It is critical that the PRO be required by law to charge producers a fee **before program launch** to ensure the PRO has sufficient funds. The deadline for producers to pay their invoices should be at least six months after the program plan is approved to allow the PRO sufficient time to prepare producers for payment (e.g., develop and distribute invoices).

Year 4

Step 7. Launch Program Plan

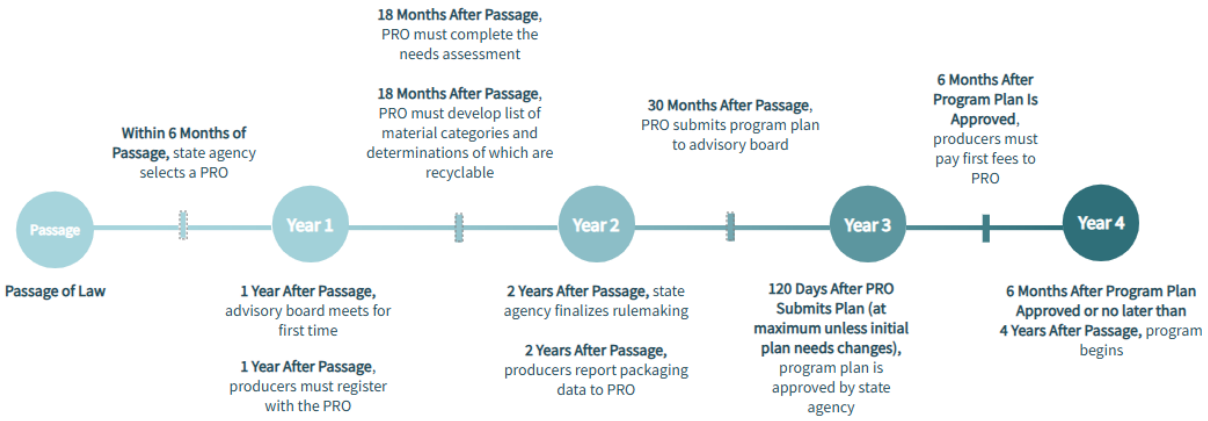
The PRO needs at least a few months after fees are first collected from producers before the program starts and accounts payable are submitted by municipalities and service providers.

Year 6

Step 8. Introduce Eco-Modulation into Fee Schedules

As noted above, incorporating eco-modulation into fee schedules in the first two years can jeopardize the PRO's fiscal stability. To incorporate eco-modulation into the fee schedule, the PRO needs several years of producer packaging and printed paper data to allow the PRO to modulate appropriately. Therefore, the EPR law should clearly delay the introduction of eco-modulation until the third year of program operation.

The Partnership's Proposed Timeline



11. Post-Consumer Recycled Content and EPR

Through investment in recycling collection and processing, EPR acts as a strong supply-side policy, meaning EPR acts in the recycling system to increase the **supply** of recycled materials. However, for the recycling system to operate, EPR needs to incentivize buyers for the recycled materials.

Because virgin materials for packaging and printed paper can sometimes be cheaper than their recycled alternatives, post-consumer recycled mandates within an EPR law can be an impactful way to conserve precious natural resources and stimulate domestic end markets for recycled material.

If EPR law incorporates a post-consumer recycled content standard, the following provisions should be included:

1. **Provide producers priority opportunities to purchase recycled content:** Ensure producers have access and opportunity to purchase recycled materials.
2. **Include markets in the needs assessment:** Examine availability and supply of recycled materials accessible to producers by material type, including for food contact applications, and assess carbon and environmental impact of using recycled content in packaging.
3. **Set performance targets for post-consumer recycled content:** Based on needs assessment findings, propose material-specific recycled content standards through the program plan.
4. **Specify "consumer" post-consumer recycled content:** Set recycled content standards that can only be met using post-**consumer**, not post-**industrial** content. Often, post-industrial content is cleaner, and therefore, it is more valuable and prioritized by producers. For that reason, incentives are not needed to induce purchase of that material.

Post-consumer recycled content mandates may also be a policy measure that policymakers choose to enact through separate legislation.

12. Source Reduction and Reuse and Refill in EPR

Several enacted U.S. EPR laws also incorporate requirements for producers to reduce the amount of packaging they place on the market. These measures can include shifting toward reusable and refillable packaging, switching away from non-recyclable materials, moving to compostable packaging, lightweighting and rightsizing packaging, or eliminating packaging outright. Collectively, these actions can be considered source reduction, but reuse and refill are often included as a separate set of requirements.

Existing EPR laws employ a range of approaches to source reduction, reuse, and refill. California's EPR law only focuses on source reduction and reuse and refill requirements for plastic packaging, while Washington and Oregon require that a certain percentage of program funds be dedicated to reusable and refillable packaging.

Source Reduction

If policymakers wish to include specific source reduction requirements in EPR law, The Partnership recommends these mechanisms:

1. **Incentivize reductions in virgin material:** Source-reduction requirements should emphasize the goal of reducing virgin material use.
2. **Allow for market growth:** Source-reduction requirements should provide flexibility and allowance for market growth.
3. **Specify source reduction actions:** Source reduction methods should include, but not be limited to: reducing the volume of a material in packaging; shifting covered material to reusable or refillable packaging; incentivizing varied reuse and refill solutions; eliminating unnecessary packaging or elements of packaging; and switching from virgin covered material to post-consumer recycled content.
4. **Allow for innovation:** Allow for innovative compliance strategies to encourage new approaches and emerging technologies and avoid the unintended environmental consequences of wasting more product or packaging.
5. **Set realistic targets:** Through the program plan, the PRO should be required to propose realistic, measurable source reduction targets based on the needs assessment.

Reuse and Refill

Specific requirements for reusable and refillable packaging may be included in EPR laws. If well-designed and implemented, reuse and refill models can be complementary to EPR and prevent waste by keeping materials circulating safely in the economy and out of the natural environment. The Partnership recommends the following considerations:

1. **Clear definitions:** Define the terms “reuse” and “refill.” Reuse means the package is collected after use and used again for its original or a similar purpose. Refill means the consumer accesses the product through a bulk distribution system where it is dispensed into a separate refillable container or through a delivery system that does not use packaging.

2. **Informed by data:** Reuse and refill efforts through an EPR law should be based on findings from the needs assessment about existing capacity and potential expansions.

3. **Designed for recycling:** Reusable and refillable packaging should be incentivized via eco-modulation or similar means to be designed for recycling at the end of its useful life.

4. **Sufficient infrastructure investment:** The statute should require that the PRO’s program plan outline how the PRO will sufficiently support the investment, development, and expansion of reuse and refill systems, incentivizing the use of existing infrastructure, to provide convenient participation at the point of sale or at home in reuse and refill models.

5. **Feasible, clearly defined performance targets:** The PRO’s program plan should propose feasible and clearly defined performance targets based on a globally established measurement methodology that drives meaningful environmental outcomes.

Conclusion

EPR for packaging and printed paper can help ensure universal recycling access, high participation rates, and optimal materials capture. It can also incentivize investments to bolster infrastructure, consistently educate consumers, and stabilize markets.

Companies, communities, and policymakers across the country agree that we need a better, bolder, and broader sustainable system of recycling. After all, according to The Partnership's Knowledge Report, eight out of 10 people believe recycling has a positive impact and see it as a valuable public service. Bolstering our recycling infrastructure creates a stronger, more resilient, and circular economy, creates jobs, protects natural resources, and reimagines how we design and deliver goods to the public.

Smart and well-designed EPR policy can help deliver on that promise.

This guidance memo is intended to provide leading practices and define key elements that are applicable to any producer responsibility programs for packaging and printed paper. Through implementation of the best practices and key elements of an effective producer-funded program, packaging can be optimized for circularity, ensuring that packaging is recyclable and can be collected, sorted, and remanufactured into a new product.