

WWF Policy Guidance

Circular Economy for Packaging in the United States





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Purpose

Building off existing collaborative efforts, this document aims to create alignment around a common understanding of key terms and concepts and offers guidance on how policy can enable a circular economy, especially regarding plastic and other materials, in the United States.

This document has both common definitions, which can be used in legislative contexts to set the scope for related programs, and recommendations by World Wildlife Fund (WWF) for how these programs and definitions should function. This guidance is intended for policymakers, government agencies, and other public sector groups with an interest in establishing and implementing policy that enables a circular economy at the local, state, and national levels.

Introduction

Context: Plastic and Materials Circularity in the United States

In the United States, policy avenues to curb plastic waste and enable a circular economy for materials are being explored, legislated, and implemented. New and existing policy models must be aligned across jurisdictions to realize the full potential of reuse and recycling given the hyper-local yet universal nature of plastics and other packaging materials from initial production to waste management.

Recognizing this unique circumstance—where the Federal government has traditionally managed only end-of-life impacts of waste management sites—it is important that proactive, full life cycle approaches to plastic and all other materials be consistent across jurisdictions for the benefit of businesses and the public.

[Moving from a linear to a circular economy](#) requires a reevaluation of the way we do business, use materials, and manage our natural resources. This guidance document streamlines some of the considerations that policymakers at all levels need to consider as we protect the future for people and nature.

Background: Plastic Pollution and Circular Economy Solutions

Plastic pollution is accelerating and is expected to continue to be a major source of ground contamination, ocean pollution, and greenhouse gas emissions under business-as-usual conditions.

Currently, the equivalent of one dump truck worth of plastic enters our oceans every minute. By 2040, plastic production is predicted to double and plastic pollution entering the ocean is expected to triple.¹ By 2050, plastic production is expected to account for 10%–13% of the remaining carbon budget, or 56 gigatons of greenhouse gas emissions annually.²

There is no time to waste to protect our communities, our economy, and our landscapes and seascapes from this crisis. Communities adjacent to plastic production and disposal sites, known as fenceline communities, are disproportionately exposed to ground, water, and air pollution. Valuable marine resources and tourist destinations—including inland, urban, and coastal destinations—are impacted by plastic waste, resulting in significant economic cost to the tourism and seafood industries, among other industries. We need to protect our environment, our communities, and our economies. This begins with a reevaluation of our use and disposal of plastic.

1 "Evaluating scenarios toward zero plastic pollution," Science Magazine. July 23, 2020. <https://www.science.org/doi/10.1126/science.aba9475>

2 "Plastic & Climate: The Hidden Costs of a Plastic Planet," Center for International Environmental Law. May 15, 2019.

Currently, our materials system is linear. We rely on plastic as a single-use resource; our packaging and products are created, used, and then thrown away. We fill landfills, our oceans, and our local environments with plastic waste because this “take-make-waste” model does not account for the true financial, environmental, and health costs of plastic production, use, and disposal.

However, we do not need to live in a reality where plastic waste is overwhelming our communities and choking our planet. By instead creating and implementing incentives for producers and users to use, reuse, reduce, and recycle their waste, we can prioritize circularity and ensure that plastic no longer finds its way into our environments or our landfills. Plastic, by design, is incredibly useful, and we should work to ensure that plastic achieves its maximum utility without creating undue burdens on our planet.

There is increasing ambition to address plastic waste. Businesses, governments, and individuals across the globe are shifting toward circular solutions and finding ways to change the economics that incentivize overproduction and careless disposal of materials. In the United States, businesses are setting ambitious reduction, recycling, and reuse targets. Congress has considered the Break Free From Plastic Pollution Act, introduced by Congressman Lowenthal and Senator Merkley, and individual states are moving to enact their own Extended Producer Responsibility (EPR) laws.

The need for a holistic set of solutions to address plastic pollution is clear. As governments consider new policies to address pollution, incentivize best practices, and allow consumers to be productive agents in the packaging life cycle, consistency across domestic and international borders is key. With agreement on a UN treaty on plastic pollution expected by 2024, there is no time to waste in

implementing circular economy policies in the United States and reducing plastic pollution nationally.

“No Plastic in Nature” as an Overarching Objective

WWF believes in a future where plastic no longer enters nature.

Policymakers should enable the creation of systems that can monitor the flow of plastic into nature and eliminate the environmental impact of plastic across the full life cycle.

WWF’s No Plastic in Nature Initiative works across the life cycle of plastics to reduce the amount of new plastic produced; ensure that the plastic we continue to need is sourced responsibly; increase the reuse and recycling of plastic already in circulation; and eliminate leakage of plastic into nature. WWF relies on science-based and local solutions to address wildlife conservation, environmental protection, and climate change. These policies can create a future where both people and nature thrive.

It is a priority of WWF to advocate for and implement policies that reduce the amount of plastic and packaging materials the public relies on while ensuring that necessary products and materials are recycled and reused to their fullest extent.

Ultimately, a circular economy can create value for communities while also enabling us to do more with less, decoupling prosperity from the take-make-waste model. Though this reality seems ambitious, there are policies and changes we can work toward today that will ensure future generations produce and consume goods with minimal impact.



Guidance for Implementing Circular Economy Policy in the United States



Key Terms, Definitions, and Recommendations

These definitions and recommendations have been developed by WWF in partnership with other stakeholders and interest groups through conversations, feedback, and review of active legislation. These definitions and the accompanying positions aim to harmonize the ambitious action taking place at national and local levels, enable stakeholders to use common terminology, and ensure that environmental and social outcomes are central considerations as new policies take shape.

Policymakers and interested parties are invited to utilize these definitions and recommendations in draft legislation, reports, conversations, and other spaces when considering circular economy policies. It is important that a circular economy movement consider more than just plastic waste or packaging and that it encourages a holistic analysis of our current linear economy, which will include definitions and recommendations that extend beyond the scope of this document.

Core Principles

Circular economy policy implementation should align with three core principles: 1) circular economy, 2) environmental justice and 3) source reduction

Definition:

CIRCULAR ECONOMY —

A circular economy is an economy that is restorative and regenerative, where materials are recycled and reused to their fullest extent; where packaging and product design prioritizes source reduction and material reuse, recycling, and compostability above disposal; and where pollution and human health impacts are removed.



WWF Policy Recommendation:

- A circular economy can create value for communities and protect nature by enabling us to do more with less, decoupling prosperity from the take-make-waste model.
- A truly circular economy will require a complete reanalysis of the way we create, use, source, design, and dispose of products and packaging. This includes creating opportunities for reusable models, reducing and removing unnecessary materials, and including incentives and mechanisms in addition to Extended Producer Responsibility.

Core Principles *continued*

Definition:

ENVIRONMENTAL JUSTICE

— Environmental justice seeks to achieve equitable distribution of the benefits and burdens associated with economic production and use of materials or products. Environmental justice in a circular economy means that communities that have historically borne the burden of plastic pollution (in production, manufacturing, use, disposal, or mismanagement) are given the tools and funding necessary to mitigate these impacts and restore their communities. Environmental justice also applies proactively to new policies or practices to ensure minimal impact on the health and safety of local environments or communities.

WWF Policy Recommendation:

- In a circular economy, no local communities or environments are subject to the impacts of plastic production, use, disposal, or mismanagement. In planning for a circular economy, local communities should be given opportunities to comment on and review plans for plastic production, reprocessing, and disposal siting.
- Plastic production, recycling, or reprocessing should emit no effluent discharge into local communities or environments, and these sites should be subject to public review as well as strict fence-line monitoring standards that eliminate discharge.
- Environmental justice protections should address all forms of emissions, including gaseous byproducts of refineries, nurdles, or other finished product spills and all other chemicals or substances resulting from the creation, collection, reprocessing, or disposal of materials.

Core Principles *continued*

Definition:

SOURCE REDUCTION —

Source reduction refers to the need to reduce the amount of virgin plastic and materials we create, the amount of waste we create, and the amount of plastic and other materials we use in packaging and products overall.

WWF Policy Recommendation:

- For a circular economy to be regenerative and restorative, it should avoid introducing new materials—especially those that cannot easily be recycled or reused—into the system wherever possible. Source reduction should be used as a tool in addition to recycling and reuse.
- Source reduction targets can be an effective way to ensure that producers are using less problematic or unnecessary materials, reducing their plastic footprint, and using more recycled content or reusable packaging.
- Source reduction targets should specify four main components to be effective:
 1. *Virgin Plastic Production Reduction* — A virgin production reduction target can work to ensure that markets are not flooded with artificially cheap plastic sourced from petroleum, which deflates the value of recycled, reusable, or responsibly sourced biobased plastics.
 2. *Waste Reduction* — A waste reduction target, combined with recovery targets, works to ensure that the amount of products or packaging being landfilled or mismanaged is reduced. (See: Plastic Footprint.)
 3. *Problematic and Unnecessary Packaging Reduction* — Packaging reduction targets can work to ensure that problematic and unnecessary materials—especially materials that contaminate waste streams, are easily littered, or are not recyclable—are removed from packaging and product portfolios. Packaging reduction can also be supported by reuse targets.
 4. *Pollution Source Reduction* — Pollution source reduction targets can identify and remove places along the value chain where plastic is leaked into nature, including by plastic production plants and effluent discharge.

Packaging Types to Cover When Implementing Circular Economy Policies

Definitions

Packaging

The term “packaging” means any package or container, regardless of recyclability or compostability, and any part of a package or container, regardless of recyclability or compostability, that includes material that is used for the containment, protection, handling, delivery, or presentation of goods that are sold, offered for sale, or distributed to consumers in the State,³ including through internet transaction.

Single-Use Packaging

Single-use refers to a covered product or beverage container, including plastic retail bags, utensils, take-out containers, or other products that can only be used once before being disposed of or recycled.

WWF Policy Recommendations

- Extended Producer Responsibility should cover packaging in all consumer-facing formats. EPR should not cover industrial, commercial, or tertiary (business-to-business) packaging or industrial scrap.
- Single-use products should be evaluated by necessity, and governing bodies (including Producer Responsibility Organizations) should release a list of problematic or unnecessary products to be removed from the market and/or subject to ecomodulation under Extended Producer Responsibility in consultation with the Advisory Council and the public. Policymakers should consider what impacts the removal of these products would have on waste stream contamination, including the accessibility implications for disabled persons and low-income communities. WWF recommends using the [U.S. Plastics Pact’s Problematic and Unnecessary Materials List](#) as a starting place.

³ In this guidance, the word “State” is a placeholder, and may be substituted with the state or region where these definitions are being implemented. World Wildlife Fund believes national action is necessary to create a future where plastic no longer enters nature.

Packaging Types to Cover When Implementing Circular Economy Policies

continued

Definitions

Reusable Packaging

The term “reusable packaging” refers to product packaging or a beverage container that is reusable or refillable and is supported by a reuse system for its collection from the consumer, cleaning, and return to service for another reuse cycle.

WWF Policy Recommendations

- Policies should shift toward prioritizing reusable packaging wherever possible, as this is an essential step in shifting toward a circular economy.
- Reuse models and formats must be thoughtfully defined and should include all relevant reusable models, not just traditional formats like glass bottles. By defining reusable systems in this way, policymakers can incentivize the broad array of innovative reuse strategies being explored to replace single-use packaging.
- Policies should clearly define labeling, health, and safety regulations to support reuse safety. Both federal and state health departments should set clear guidance and expectations to ensure reuse systems are safe for consumers.
- Governments should create resources and funding opportunities for cities and communities to implement reuse. Special attention is needed to encourage public engagement and adoption of reuse solutions.
- De-risk investment in reusable systems is needed to incentivize companies to invest in reuse. Additional investment is needed to support entrepreneurship in the reuse solutions space.
- Because reusable packaging is supported by a dedicated reuse system, it often will not be collected in an Extended Producer Responsibility system or a Deposit Return System, as it is not managed in municipal waste systems. Instead, reusable packaging is a way to reduce the amount of material flowing through such systems.

Packaging Types to Cover When Implementing Circular Economy Policies

continued

Definitions

Glass Packaging

Glass packaging is made from silica glass and, depending on the product type it contains, is often paired with a closure made of glass, metal, cork, or plastic. The raw materials of glass include silica sand, sodium carbonate, calcium oxide derived from limestone, and small amounts of minerals. Postconsumer recycled glass is made from cullet, or the granular matter resulting from crushed glass collected in recycling programs.

Metal Packaging

Metal packaging includes all single-use and reusable packaging used to contain a product, including cans, made of materials including aluminum, steel, or other materials included by the oversight agency. Aluminum packaging is extracted from bauxite, a mineral that is found mainly in tropical and subtropical areas, and open pit mining is generally used to obtain bauxite.

WWF Policy Recommendations

- Glass can be recycled endlessly without loss in quality, and recycled glass is preferred over virgin glass whenever possible.
- Use of glass packaging should take into consideration the impacts of sand mining and virgin glass production—see [WWF's research](#).
- Recycled aluminum is the preferred source material whenever possible. Unlike many other materials, aluminum is infinitely recyclable, with only a small material loss rate (1%–2%) due to processing. Since the environmental impacts of aluminum are concentrated at the beginning of its life cycle, recycling aluminum into new products and packaging avoids many impacts, and reuse or recycling is therefore the preferred end-of-life option for aluminum whenever possible.

Packaging Types to Cover When Implementing Circular Economy Policies

continued

Definitions

Paper Packaging

The term “paper packaging” means packaging that is sold, offered for sale, delivered, or distributed to a consumer in the State, including printed paper, newspaper, inserts, magazines, mailers, and packaging that contains or houses a product. Paper packaging is a category of fiber-based packaging, which refers to packaging made from any material that relies on plant-based fibers for its structures. Paper and paperboard are commonly used for cartons, wraps, laminate, bags, and take-out containers. Other fiber-based packaging includes corrugated board used for boxes, containers, dividers, and trays as well as molded pulp used for egg cartons, trays, and cushions.

WWF Policy Recommendations

- Like all packaging, the environmental impacts of fiber-based packaging depend on its sourcing and relationship to the product and distribution system. The effect on the whole system must be considered to understand the impacts of the packaging.
- Fiber materials have many advantages—they are made from a renewable source and are adaptable to many applications. However, they also carry many environmental impacts throughout their life cycles.
- Most paper products come from tree-based fiber, and while this material can be sourced sustainably, deforestation remains a serious threat in many places. In order to reap the benefits of renewable materials, fiber must come from a responsibly managed forest. The best way to ensure virgin wood and paper products come from a responsible source is through credible forest certification programs. The Forest Stewardship Council™ (FSC®) is an independent forest certification program supported by WWF that balances the environmental, social, and economic aspects of fiber sourcing.
- Recycled fiber is the preferred source material whenever possible.

Packaging Types to Cover When Implementing Circular Economy Policies

continued

Definitions

Plastic Packaging

The term “plastic packaging” means packaging made from plastic, whether alone or in combination with another material, including packaging that bonds plastic with other materials, such as metal lids bonded to plastic bottles, blister packs combining plastic and paperboard, plastic-coated paper packaging, and aseptic containers, that is used to protect, contain, or transport a commodity or product at any point from manufacture to its place of use by a consumer; or such packaging that is attached to a commodity or product or its container for the purpose of marketing or communicating information about the commodity or product and is capable of being removed and discarded when the product is put in use without adverse effect on the quality or performance of the product; or plastic bags and food service products.

WWF Policy Recommendations

- *Refer to the following table for specific definitions and recommendations for plastic packaging.*



Plastic

The term “plastic” means any of numerous organic, synthetic, or processed materials derived from natural materials such as cellulose, coal, natural gas, salt, and crude oil that are mostly thermoplastic or thermosetting polymers of high molecular weight and that can be made into objects, films, or filaments, including “expanded polystyrene.”

Definitions

Biobased Plastic (or Bioplastic)

Biobased plastic is derived from plants or other biomass, including but not limited to seaweed, mushrooms, sugarcane, corn, oilseed crops, or other biomass, including insects, shrimp shells, or animal fat.

- **Responsibly Sourced Biobased Plastic** – Responsible sourcing ensures that biomass is grown, processed, and delivered in a way that protects our natural resources so that we can continue to depend upon them in the future. Responsible sourcing of renewable materials, like biomass, protects the future ability of agriculture systems to operate successfully and builds resilience against climate change, supply shocks, and price volatility. Responsible sourcing depends on the feedstock used, local conditions, and the technology and process of production.
- Biobased plastic may or may not be biodegradable or compostable.

WWF Policy Recommendations

- For further information, see Bioplastic Feedstock Alliance's [Call for Science-Based Policy on Plastic Alternatives](#) and WWF's [Position on Biobased and Biodegradable Plastic](#)
- Biobased plastic and other biobased materials can serve a strong complementary role in circularity, and businesses and governments have an important role to play in enabling biobased alternatives for fossil-derived materials. Alternative materials, including **biobased materials, are an essential part of building a sustainable material system and can help reduce dependence on fossil fuels**, but they have important limitations on what they can and cannot deliver. Biobased and biodegradable materials are not a solution to plastic pollution on their own, and no material should be designed to be littered. Furthermore, since no materials can be recirculated infinitely, biobased materials (those derived from plant materials, not fossil fuels) can serve an important role in replenishing materials in a circular system. However, to realize their sustainability benefits, it is imperative that biobased materials be sourced and managed responsibly (see BFA's [Methodology for the Assessment of Bioplastic Feedstocks](#) for more information).

Plastic *continued*

Definitions

Biobased Plastic (or Bioplastic) *continued*

Biodegradable Plastic

Biodegradable plastic that is capable of being decomposed by bacteria or other living organisms such as fungi.

- Biodegradable plastic may or may not be biobased

WWF Policy Recommendations

- New policy in this space should encourage a comprehensive evaluation of solutions including the material's sustainability performance; appropriateness of the material for the application; geographical context; and impacts from material sourcing, distribution, use, and disposal.
- The definition of biodegradable plastic does not include a specific timeframe or specific environmental conditions for breakdown, which means it can never be guaranteed that a biodegradable plastic will actually biodegrade in practice. Thus, biobased plastics should not be considered a solution for plastic pollution, as they face the same end-of-life challenges and can become plastic pollution in the same way as fossil-based counterparts.
- The benefits of biobased plastic are from their responsible sourcing, which can provide climate benefits, decouple plastic from fossil fuel production, and promote better stewardship of natural resources.
- Biodegradable plastic does not support circularity unless recovered and processed by a system that can recapture its value. Biodegradable plastic is not a solution for marine litter as the highly variable conditions in nature mean that it cannot be guaranteed these materials will biodegrade in a timely manner.

Definitions

Compostability

Composting is an aerobic process where materials are reduced to organic materials with limited mineral content and the resulting product can be used as a soil conditioner. Composting systems may be either industrial or home-based.

WWF Policy Recommendations

- Producer Responsibility Organizations (PROs) and individual producers are responsible for ensuring that products meet the ASTM international standard numbered D6400 or D6868 and that, in the market, their products enter composting streams without entering landfilling or recycling streams in practice.
- Packaging design that includes any compostable materials needs to clearly designate how to dispose of the item in a composting system. The material must be free of any coatings or additives, and it must not contain any toxic substances.
- Composting systems can either be at-home or industrial and should have clear designations for consumers to delineate between the systems so that they do not contaminate either stream.
- Composting can be included in Extended Producer Responsibility systems when composting is present at scale and as accessible as recycling options.
- Additional policy guidance may be necessary as composting options become more widespread.

Plastic *continued*

Definitions

Compostable Plastic

A subset of biodegradable plastic, compostable plastic breaks down and becomes usable, nontoxic soil conditioners under controlled conditions in a time comparable to that of other compostable materials.

WWF Policy Recommendations

- Compostable plastic can play a beneficial role in circularity and responsible material systems when paired with the right infrastructure and applications.
 - Compostable plastic is specifically designed for controlled conditions to be either home compostable or industrial compostable. Compostable plastic should be tested and certified by a credible third party to confirm its performance and clearly labeled so that it does not contaminate recycling streams or the different compostability streams.
-

Main Components of an Effective Extended Producer Responsibility System

Definitions

Extended Producer Responsibility

Extended Producer Responsibility (EPR) refers to programs where producers of all packaging and products are made financially responsible for the collection of their products and packaging on the consumer market after use and for the recycling, composting, or disposal of those items.

WWF Policy Recommendations

- EPR is an important policy mechanism through which to achieve a circular economy. However, EPR alone cannot fix our disjointed waste management system, nor can it correct the decades of inequities and subsidies that have incentivized the use of virgin and/or unnecessary materials and irresponsible disposal.
- An EPR framework must steer the transition from a linear to a circular economy nationally and link policies to increase the quality and quantity of recyclables collected with the goal of using those materials in new products. This means establishing material-specific numeric targets for recyclability, recovery, and use of recycled content.
- Before implementing an EPR framework, the applicable jurisdiction should conduct a needs assessment to inform material-specific capacities and targets and to inform the dispersal of fees under a Product Stewardship Plan. (*See: Product Stewardship Plan.*)
- The EPR framework should optimize and incentivize the performance of recovery systems and promote coordination with related initiatives (such as tipping fee surcharges, deposit return systems, or new infrastructure financing programs) and allow for integration of reuse models.

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions

Extended Producer Responsibility *continued*

WWF Policy Recommendations

- The overarching principles for a successful system should be:
 1. Generate strong environmental, social, and economic outcomes in an efficient and accountable manner
 2. Provide convenient service to consumers
 3. Create a financially sustainable model
 4. Offer producers access to recovered material for closed loop recycling
 5. Support environmental justice objectives in recycling systems
- An EPR program should have:
 1. A clear scope of products affected and programs funded
 2. Centralized program management
 3. Transparent cost principles
 4. A defined role for government to provide, at minimum, strong accountability and clear mechanisms for oversight
 5. Clear goals, targets, and reporting requirements to measure progress

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions	WWF Policy Recommendations
<p>Producer Responsibility Organization</p> <p>A Producer Responsibility Organization (PRO) is the collection of brands, individuals, and corporations that are responsible for creating and executing the Product Stewardship Plan. <i>(See: Responsible Party.)</i></p>	<ul style="list-style-type: none">• The Producer Responsibility Organization (PRO) should be incorporated as a 501(c)(3) organization. As the PRO executes the Product Stewardship Plan, all fees and funds collected from producers should be deposited into an interest-bearing account until distributed according to the Plan. The PRO should produce an annual public accounting of collected and distributed funds.
<p>Product Stewardship Plan</p> <p>A Product Stewardship Plan refers to the plan delivered to the oversight agency by the Producer Responsibility Organization explaining how the Organization intends to operate, collect fees, and distribute funds in order to achieve the recycling, reuse, recovery, and recycled content goals as established by the legislation and need assessments. The Product Stewardship Plan must include a comprehensive list of the materials, packages, brands, and formats covered by the plan; an assessment of the amount of material by weight introduced into and recovered in the covered area; and a detailed list of expenditures and fees assessed by the Producer Responsibility Organization.</p>	<ul style="list-style-type: none">• The Product Stewardship Plan (sometimes referred to as PSP) must outline the PRO's expenditures, which can include day-to-day operation of recycling and collection systems, applicable investments in or grants to recycling facilities or materials recovery facilities, the purchase of recycled materials, and reimbursement for government rulemaking activities or oversight.• The PSP will outline the expected fee, which is calculated from the net cost of recycling each material and ecomodulation factors; the reimbursement required for rulemaking, oversight, and enforcement activities; and the formats or packages subject to ecomodulation under current market conditions.

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions

Extended Producer Responsibility Advisory Committee

The Advisory Committee is a statutory body established as part of the oversight mechanisms to review and provide advice on the PRO's Product Stewardship Plans.

Deposit Return System (DRS)

A deposit return system is a policy where consumers pay a deposit on the purchase of select packaging and the deposit is returned to the consumer when they return the packaging to a redemption center.

WWF Policy Recommendations

- Advisory Committees should include agency staff relevant to enforcement or oversight of Product Stewardship Plans, representatives of relevant trade organizations, municipal or county representatives, environmental justice groups, active charities or 501(c)(3)s that work on plastic pollution or recycling, leading local experts from universities, public and private recyclers, waste collection services, composters, and/or solid waste industries. Entities in the PRO should not have a voting role on Advisory Committees, but may be present to enable information sharing between the Committee and the PRO.
- These systems—sometimes referred to as Bottle Bills—are an effective way to increase collection, decrease contamination, and create funding for existing recycling streams. A DRS may exist with or without an EPR system that covers all materials or products. A DRS should utilize a \$.10 deposit for beverage containers (*see Beverage Container definition*), and unredeemed deposits should be used to advance collection and recycling, including investment in deposit recovery infrastructure or recycling infrastructure.
- Responsible Parties whose products or packages are covered by a deposit return system should also form a PRO to cover the net cost of recycling the materials, pay for oversight or rulemaking activities, produce a Product Stewardship Plan, and conduct business as required by a traditional PRO as outlined in this document.

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions

Covered Entity

A covered entity defines the areas in which a Producer Responsibility Organization will be responsible for accounting for end-of-life management in its Product Stewardship Plan. For these purposes, a Covered Entity includes a single family or multifamily dwelling or public place.

Covered Retail or Service Establishment

A covered retail or service establishment means any person, corporation, business, facility, vendor, organization, or individual that sells or provides merchandise, goods, or materials directly to a customer, including to a food service business. A retail establishment includes, but is not limited to, a store; grocery store; restaurant; convenience store; home delivery service; beverage provider; liquor store; pharmacy; catering business; catering truck; hardware store; department store; hotel; motel; temporary store or vendor at a farmers' market, street fair, or festival; or any other retail or service establishment operating in the State.

WWF Policy Recommendations

- It is important that all potential places where a package or product reaches the end of its life be included as covered entities. Producers are responsible for the package or product's end of life regardless of where the consumer is physically located in the covered geography.
- PROs should work with Covered Retail or Service Establishments to calculate the amount of covered products introduced into an area.
- Covered Retail or Service Establishments will be considered as "Covered Entities" for the purposes of Product Stewardship Plans.

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions

Ecomodulation

Ecomodulation uses assessed fees to encourage design that avoids or eliminates problematic or hard-to-recycle materials. These packages or products are assessed on the likelihood that they will end up leaking into the environment, contaminating recycling streams, or causing disruption in collection, sortation, or reprocessing.

WWF Policy Recommendations

- Ecomodulated fees should be in addition to the base fee and net cost of recycling the materials (if the materials can be recycled).
- Ecomodulation fees are an integral part of any Extended Producer Responsibility system.
- Ecomodulation should introduce higher fees for harder-to-recycle packaging or packaging that cannot be accepted in recycling systems, whether curbside or at a materials recovery facility. Ecomodulation should introduce lower fees for packages that use recycled content (*See: Biobased Content*) or sustainably sourced biobased content or are reusable. Packages or products that are reusable in practice can create a credit against a producer's ecomodulation fees.
- Ecomodulation fees should be assessed by the oversight agency in a publicly available report subject to public comment and should be reassessed every two years to determine the impact of market or infrastructure adjustments. A PRO or Advisory Committee can petition the oversight agency for an advance reassessment with proof of significant market or technical capacity shifts that affect a product or package's recyclability or reusability.

Public Place

Public places include streets, sidewalks, public parks, or other public land wherein a municipality or state government is responsible for providing waste collection services.

- EPR systems should also be responsible for public places in their fee assessment. Any place where a consumer reaches the end of a product or package's life cycle needs to be accounted for to avoid creating a loophole where producers are not responsible for their products or packaging.

Main Components of an Effective Extended Producer Responsibility System

continued

Definitions

Responsible Party

A responsible party means, for either a beverage container or a covered product, a person or corporation that engages in the distribution or sale of the beverage container or covered product to a retailer in the State, or a person that engages in the sale of the beverage container or covered product directly to a person in the State, or a person that imports the beverage container or covered product into the United States for use in a commercial enterprise, sale, offer for sale, or distribution in the State.

WWF Policy Recommendations

- A PRO is composed of Responsible Parties.



Products to Consider Within Circular Economy Policies

Definitions	WWF Policy Recommendations
<p>Covered Product</p> <p>A covered product is defined as any product that the Producer Responsibility Organization must include in its Product Stewardship Plan. For these purposes, a covered product includes any packaging, including personal care products, food service products, beverage containers, and printed paper.</p>	<ul style="list-style-type: none"> • A covered product should not include a beverage container if and only if that beverage container is already covered under a deposit return system. • All single-use products and packaging, regardless of material type or recyclability, should be covered in an EPR framework.
<p>Beverage</p> <p>A beverage means any drinkable liquid intended for human consumption, including water, flavored water, mineral water, soda water, a carbonated soft drink, beer, hard cider, a malt beverage, liquor, wine, tea, coffee, fruit juice, an energy or sports drink, dairy or plant-based milk, coconut water, a yogurt drink, a probiotic drink, a wine cooler, and any other beverage as identified by the oversight agency. A beverage does not include infant formula, meal replacement liquid, or a drug regulated under the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.).</p>	<ul style="list-style-type: none"> • All beverages, including alcohol, dairy, and non-carbonated drinks, should be considered part of a DRS or EPR.
<p>Beverage Container</p> <p>A beverage container means a prepackaged container for beverages made of any material, including glass, plastic, metal, and multi-material, that has a volume of less than 3 liters.</p>	<ul style="list-style-type: none"> • Beverage containers should be covered by an applicable DRS framework. When covered by a DRS framework, beverage containers should not include cartons, pouches, or aseptic packaging, as these formats are hard to recycle and recover and should be subject to standard packaging ecomodulation if not covered under a DRS.

Products to Consider Within Circular Economy Policies

continued

Definitions	WWF Policy Recommendations
<p>Food Service Product</p> <p>The term “food service product” means a product in which foods or beverages are placed or packaged or are intended to be placed or packaged, or that are used to facilitate the consumption of food or beverages, and that are composed of plastic foil, fiber, or paper with a plastic coating, window, component, or additive. These products include but are not limited to a utensil a straw, a drink cup, a drink lid, a food package, a food container, a plate, a bowl, a catering tray, a meat tray, a deli round, condiment packaging, clamshells and other hinged or lidded containers, portion cups, and a food wrap.</p>	<ul style="list-style-type: none">• A “food service product” should exclude beverage containers if they are covered by a DRS.
<p>Personal Care Product</p> <p>The term “personal care product” means a product intended to be applied to or used on the human body in the shower or bath, or for personal cleanliness or grooming, including, but not limited to, shampoo, lotion, hair conditioner, and soap.</p>	<ul style="list-style-type: none">• Personal Care Products should be included in the scope of an EPR system because their packaging has the same impacts and considerations as other covered products.

Management Practices for Single-Use Products and Packaging

Definitions

Plastic Footprint

A set of metrics that capture the total amount and types of plastic used by a company, government jurisdiction, or other entity along with their associated impacts throughout the plastics value chain.

WWF Policy Recommendations

- At a minimum, a plastic footprint should account for the following: 1) the total quantity and composition of plastic used (including types of plastic used and their application); 2) the portion that is made from virgin fossil-based feedstocks as opposed to recycled or biobased plastic; and 3) the end-of-life management or fate of the plastic (including the amount mismanaged and/or leaked into the environment).
- A plastic footprint can be calculated for both a company and a jurisdiction. Both calculations are valuable sources of information for finding new interventions to address plastic pollution. A corporate plastic footprint can be used to track outcomes of new policies, and a jurisdictional plastic footprint can help create action plans to reduce plastic pollution.
- For an example of current plastic footprint work, see the [ReSource Footprint Tracker](#).

End-of-Life Management

The term “end-of-life management” means the collection, sorting, reprocessing, and management of materials, products, and product packaging for reuse, recycling, composting, or disposal.

- It is the responsibility of the PRO to arrange and account for end-of-life management in its Product Stewardship Plan.

Management Practices for Single-Use Products and Packaging

continued

Definitions

Disposal

Disposal means to get rid of, including but not limited to placement in a landfill. Disposal does not include incineration or waste-to-energy conversion.

WWF Policy Recommendations

- In a circular economy, disposal should be the last-choice option for any product or packaging. Circular economies incentivize reduction of unnecessary items, reuse or recycling of necessary items, and disposal only as absolutely necessary.
- Landfills create millions of metric tons of greenhouse gas emissions and leak plastic and other discarded materials into surrounding environments and communities. Landfilling should be a last-resort option for packaging and products, and it is the goal of a circular economy to reduce and eventually eliminate the amount of material that enters a landfill.
- Core principles of environmentally just waste management include restricting the establishment of new landfills and restoring contaminated land. Local communities, especially underserved and majority-minority communities, have historically faced the most direct impacts of landfill siting.
- To avoid these disproportionate impacts, landfill siting should include analyses of community impacts, incorporate public input, and establish community and environmental safeguards, including requirements for construction as a sanitary landfill.

Management Practices for Single-Use Products and Packaging

continued

Definitions

Recovery Rate

A recovery rate is a calculation of the materials that are reprocessed for secondary use as a percentage of the total materials by weight that were introduced into a market. Recovery rates are a measure of how well materials perform in existing recycling systems and may be limited by collection rates, contamination, sortation capacity, reprocessing capacity, or economic or social factors.

WWF Policy Recommendations

- Recycling processes should aim to retain maximum commodity value when possible and avoid comingling materials to enable downcycling.
- In statute, EPR systems should establish goals for recovery, recycling, reduction, and reuse to guide the establishment of a Product Stewardship Plan and market conditions.
- A recovery rate will track the amount of materials that are collected, recycled, and actually used in a new product or package. There currently exists a gap in this data nationally—we know what is collected and recycled, but we do not know how much material becomes a feedstock again. It should be a priority to collect and publicly report this data as part of a Product Stewardship Plan.

Management Practices for Single-Use Products and Packaging

continued

Definitions

Recycling

Recycling means reprocessing, by means of a manufacturing process, used packaging materials into a product, a component of a product, or a secondary raw material. Recycling does not include waste-to-energy applications or incineration. Recycling does not include the use of waste as a fuel or fuel substitute, for energy production, or for repurposing into infrastructure (including pavement or building projects).

- *Mechanical Recycling* — Mechanical recycling refers to mechanical processing (sorting, washing and drying, chopping, grinding, and reprocessing) of material.
- *Chemical Recycling* — Chemical recycling (also referred to as advanced or molecular recycling) in the plastic space refers to chemical, thermochemical, and combustion processes whereby some of the plastic waste undergoing treatment is turned back into its chemical building blocks, enabling some of the waste material to be recycled into another plastic, including plastic that can be used for food-grade application, while excluding plastic-to-fuel applications and all other applications that do not turn the input plastic back into plastic.

WWF Policy Recommendations

- Standards and practices should prioritize mechanical recycling, as described here, above chemical recycling. Current practices for mechanical recycling have proven to have better environmental and social outcomes and greater effectiveness in preparing materials for secondary markets.
- Chemical recycling is a set of unproven technologies that do not yet operate at scale. As technologies and capacities develop, it is important that chemical recycling not have direct pollution impacts on local communities or environments and that chemical recycling operate without significant emissions or environmental impacts. For guidance, WWF has created [Chemical Recycling Implementation Principles](#) aimed at protecting people and nature should these technologies be pursued.
- Chemical recycling applications should not receive any public funding for implementation, including but not limited to matching grant assistance, tax credits, research grants, or genius prizes.
- The products of a recycling process should be used to create a product or feedstock of equal or greater value to its original use.

Management Practices for Single-Use Products and Packaging

continued

Definitions

Recyclable

The term “recyclable,” with respect to a covered product, means the covered product is technically recyclable in current State’s market conditions; and sufficient processing capacity exists to recycle all of the covered product within the geographical distribution of the covered product; and the consumer who uses the covered product is not required to remove an attached component of the covered product, such as a shrink sleeve, label, or tamper evident band, before the covered product can be recycled.

Tipping Fee

A tipping fee is an additional fee levied on top of the cost to dispose of or recycle solid waste, per ton, usually in a landfill or at a materials recovery facility.

WWF Policy Recommendations

- The PRO should pay the net cost per material of the recycling process. Finished materials should be sold at market value, and if the market value does not cover the cost to collect, sort, and recycle the materials, the PRO should pay applicable entities (materials recovery facilities) the difference.
- WWF recommends using U.S. Plastics Pact’s [definition of recyclability for packaging](#).
- A landfill tipping fee can offset the incentive haulers are given to dispose at landfills or incinerators rather than materials recovery facilities. Proceeds from tipping fees can be used to invest in recycling infrastructure or to clean up pollution. Tipping fees exist outside the scope of Extended Producer Responsibility and are not accounted for to offset producer fees or ecomodulation.





A Coordinated Strategy for Implementing Circular Economy Policy

Transitioning from a linear to a circular economy will require broad systems change. Our way of life has become comfortable with waste and disposal. Fundamentally, our packaging and delivery applications will need to prioritize environmental, health, and justice outcomes. With commitments to the right market incentives included in EPR, the centering of environmental justice principles, and strong targets set in legislation, a circular economy is possible.

As we advocate for the policies outlined here that can enable this shift, it is important to all stakeholders—businesses, policymakers, and consumers alike—that our policies be timebound, specific, and consistent. Harmonized policies across borders can accelerate our shift to a more circular economy. By setting targets for recycling,

recovery, and reuse in legislation, producers and markets can make the right shifts over time and be held accountable to make progress. This transparency is key to ensure a level playing field for businesses of all types and sizes and give the public appropriate oversight of our circular transition. It is also important that national consistency enables consumers and producers to make the right decisions, regardless of their physical location at the point of purchase or disposal.

WWF is committed to advancing a circular, just economy that benefits people and nature. Policymakers, businesses, interest groups, and advocates should use the definitions, recommendations, and resources in this document to help shape a more circular economy.

AS A LEADER IN CONSERVATION, we have partnered with key initiatives and convened stakeholders across the plastics value chain to address full life cycle challenges with innovative solutions. Listed below are several key initiatives and proposed legislation from which key insights can be drawn in the creation and implementation of circular economy policies.

U.S. Plastics Pact: The [U.S. Plastics Pact](#) brings together over 100 businesses, nonprofits, and interest groups that have committed to advancing a circular economy in the United States. WWF is a convening partner of this solutions-driven consortium alongside The Recycling Partnership. Together, the U.S. Plastics Pact is working toward a [Roadmap to 2025](#) with solutions tailored to the unique needs and challenges within the U.S. landscape based on [four key targets](#):

1. Define a list of packaging that is problematic or unnecessary by 2021 and take measures to eliminate the items on the list by 2025.
2. 100% of plastic packaging will be reusable, recyclable, or compostable by 2025.
3. Undertake ambitious actions to effectively recycle or compost 50% of plastic packaging by 2025.
4. Achieve an average of 30% recycled content or responsibly sourced biobased content by 2025.
 - > [Read the U.S. Plastics Pact's Baseline Report here.](#)

Bioplastic Feedstock Alliance: A multi-stakeholder forum of some of the world's leading consumer brand companies that focuses on advancing knowledge of bioplastics, the Bioplastic Feedstock Alliance (BFA) provides thought leadership on the responsible sourcing of bioplastics and the role of bioplastic in circular systems. The BFA explores the latest science to advance knowledge of bioplastics and their social

and environmental impacts. The BFA aims to ensure bioplastics ultimately contribute to a more sustainable flow of materials and to create lasting value for present and future generations.

- > [Learn more about BFA on the official website.](#)
- > [Read BFA's Call for Science-Based Policy on Plastic Alternatives here.](#)
- > [Find WWF's Position on Biobased and Biodegradable Plastic here.](#)

OneSource Coalition: A sister platform to *ReSource: Plastic*, this coalition mobilizes business and NGO partners around policy solutions for a circular economy. The OneSource Coalition is leveraging the influence of its signatories to create a unified and consistent call to action for policymakers to enact real change. The coalition is founded on three principles: National Extended Producer Responsibility (EPR), environmental justice and local protections, and international leadership.

- > [Learn more about OneSource Coalition on the official website.](#)
- > [Read the OneSource Coalition Statement of Solutions here.](#)

World Wildlife Fund and American Beverage Association Joint Principles for Extended

Producer Responsibility: World Wildlife Fund and the American Beverage Association have created a set of joint principles for extended producer responsibility. Together, as environmentalists and members of the business community, we have agreed on the necessities for effective EPR.

- > [Read the Joint Principles here.](#)

ReSource: Plastic: *ReSource: Plastic* is an activation hub for companies that are ready to turn plastic commitments into action. *ReSource: Plastic* creates tangible action around the plastic crisis by identifying which changes will make the biggest cuts in a company's plastic waste footprint and establishing a tracking system to measure

progress. Through a three-pronged approach, *ReSource: Plastic* works with its member companies to maximize, measure, and multiply their impact on solving the plastic pollution crisis.

- > Learn more about *ReSource: Plastic* on the [official website](#).
- > Read *Transparent 2021*, the latest progress report from *ReSource: Plastic* [here](#).

ReSource Footprint Tracker: The ReSource Footprint Tracker is an innovative tool that helps companies take their ambitious, large-scale commitments on plastic waste reduction to a global scale by measuring the plastic footprints of *ReSource: Plastic* member companies. The ReSource team utilizes insights from the Tracker to guide members with data-driven solutions that maximize and multiply the impact of their plastic mitigation efforts. As of 2021, the Tracker is also a key measurement tool used to measure the progress of the U.S. Plastics Pact.

- > Learn more about the ReSource Footprint Tracker in WWF's latest [methodology overview](#).

Consumers Beyond Waste: Consumers Beyond Waste (CBW) is a forum led by the World Economic Forum that aims to advance circular consumption models, including reusable packaging. CBW has developed guidelines to spur the uptake of reusable materials and systems that are sustainable, affordable, and inclusive.

- > Read more about CBW's work in the following reports: [Executive Summary](#); [City Playbook](#); [Design Guidelines](#); [Safety Guidelines](#).

Reuse Portal: [The Reuse Portal](#) was formed in 2022 as a global collaboration platform that seeks to provide a one-stop shop for engaging innovators, businesses, policymakers, activists, experts, consumers, and citizens to build the tools and networks for shifting from single-use to reuse. The Reuse Portal is jointly led by World Wildlife Fund, the World Economic Forum, and the United Nations Environment Programme.

Break Free From Plastic Pollution Act: WWF is a proud endorser of the Break Free From Plastic Pollution Act ([S.984/H.R.2238](#)). This Act is the first nationwide EPR proposal for plastic packaging. This legislation has moved national conversations around EPR and set a baseline for action at Federal and state levels. WWF's endorsement of the Break Free From Plastic Pollution Act can be found [here](#).

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