



Extended Producer Responsibility (EPR) Eco-modulation Overview

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POLICY

GreenBlue is an environmental nonprofit on a mission to accelerate the transition to a regenerative, just, and sustainable materials economy. We serve that mission through our members, providing them with the trustworthy and compelling information they need to prioritize progress across the entire value chain.

The Sustainable Packaging Coalition (SPC) is a membership-based collaborative that believes in the power of industry to make packaging more sustainable. We are the leading voice on sustainable packaging and we are passionate about the creation of packaging that is good for people and the environment. Our mission is to bring packaging sustainability stakeholders together to catalyze actionable improvements to packaging systems and lend an authoritative voice on issues related to packaging sustainability.

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This resource is an effort of SPC's Packaging EPR Collaborative and was produced thanks to the participation of the Collaborative's Steering Committee members.

SPC Collaboratives are working groups where members can come together from across the value supply chain to advance specific sustainable packaging solutions.

DISCLAIMER

The information provided in this document does not constitute legal advice and we advise you to consult with legal counsel when determining organizational obligations or requirements.

Clickable links throughout this resource to useful external resources are highlighted in **SPC Blue**





1. Overview of EPR

What is Extended Producer Responsibility (EPR)?

Extended Producer Responsibility (EPR) for packaging and paper products is a policy approach that assigns producers (brands, manufacturers, etc.) responsibility for the end-of-life of their products. The responsibility part can be financial, operational, or a combination of both.

Sitting at the intersection of policy, economics, and environmental protection, EPR fundamentally changes the way communities interact with recycling.



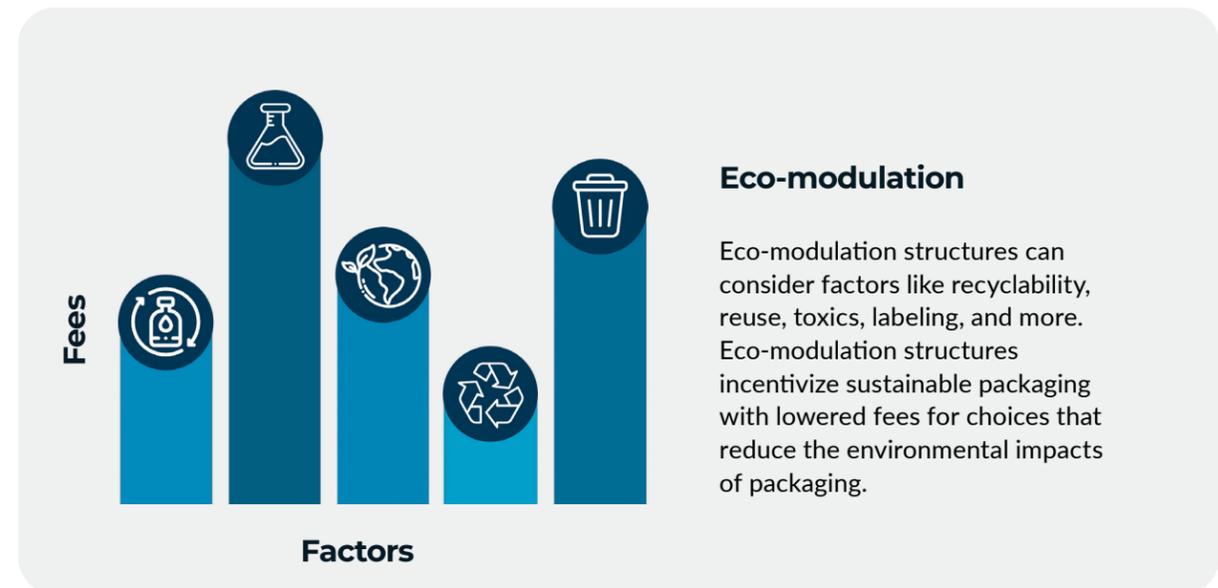
How does EPR work?

In the U.S., our current recycling system operates under a model where taxpayers and municipalities are responsible for paying for the collection, transport, and processing of waste and recycling. As taxpayers or citizens we pay for curbside collection or drop-off through utility bills and taxes. Under Extended Producer Responsibility, the model shifts so those entities that produce the packaging that enters our recycling and waste streams are paying for the collection, transportation, sortation, and processing. Depending on the program, the taxpayer burden is reduced for these services. In this example, the companies who create the packaging, food serviceware and/or paper initially and sell it on the market are responsible.

Producers take on the responsibility through an organized entity called a Producer Responsibility Organization (PRO) and work with governments and other stakeholders including haulers, Material Recovery Facilities (MRFs), reprocessors, and NGOs to develop, implement, and manage the EPR program. The PRO drafts and executes something called a program plan, which lays out how they will calculate and collect fees, as well as conduct the program. The PRO collects fees from producers to cover the costs of the program, including the day-to-day operating costs, compliance, oversight, and enforcement costs from the governments.

What is Eco-modulation?

One of the ways that EPR seeks to protect the environment is through the concept of eco-modulation. Eco-modulation is the incentivization of product design and material choices that favor reduced environmental impact through a fee schedule in an EPR program. In this resource, we will dig into some common questions about eco-modulation and provide an overview of eco-modulation in the EPR programs across the five states that have passed Packaging EPR programs as of March 2025.





2. Fee Setting in EPR Programs

EPR programs define how fees are assessed and charged to producers. Basic EPR fees cover the costs to collect, transport, sort, and process covered materials; they are fundamental to the program. The goal of basic fees is to cover the costs associated with operating the system. Then, once the fundamental costs are covered, other investments can be made to the system.

The fee structure in an EPR law defines how fees are assessed on packaging and charged to producers, typically through the PRO.

There are occasions where a fixed rate could be implemented instead of product-related fees that vary based on the factors listed on the next page. This is typically utilized for small producers under a specific threshold or other special cases. For Packaging EPR a fixed rate, as explained in the examples listed on page 7, is generally reserved for obligated producers who place on the market a small amount of packaging. Not all programs include a fixed rate option. The most common fee structure in modern EPR programs is “product-related,” and as these programs evolve more of them are including eco-modulation.



EPR fees translate environmental responsibility into economic terms – basic fees cover system costs, and eco-modulated fees serve as financial levers that reward sustainable design choices with lower fees. This carefully calibrated fee structure creates a marketplace where packaging innovation and environmental stewardship become competitive advantages.



WHAT ARE EPR FEES BASED ON?

FACTOR	CONSIDERATION
Unit	Essentially, EPR fees consider the question: What is the format?
Weight	EPR programs also consider how much of the material or item exists.
Material	EPR fees also take the material makeup of the product or packaging into account.

HOW ARE EPR FEES STRUCTURED?

FEE TYPE	HOW IT WORKS
Fixed Rate	Producers pay a flat fee, such as an annual membership fee to the PRO. Some proposals include fixed-rate fees for smaller producers who are under a revenue or tonnage limit.
Product-related	Fees are established per product, material, and/or category and assessed based on the amount of packaging put onto the market.
Eco-modulated	Fees are assessed based on variables such as weight, material-specific management costs, or factors that influence environmental impact like recyclability or reuse.



3. What Is the Objective of Eco-modulation?

The objective of eco-modulation is to incentivize producers to generate less waste and reduce environmental impacts. Eco-modulation uses economic incentives within policy to push environmental outcomes.

Better environmental outcomes means less chemicals of concern, lower material use, more recycled material, more renewable sources, more reuse and refill, lower greenhouse gas emissions, overall lower impacts from packaging. While the factors considered in eco-modulation vary from law to law, in the packaging context the factors usually fall under end-of-life factors and life cycle factors.

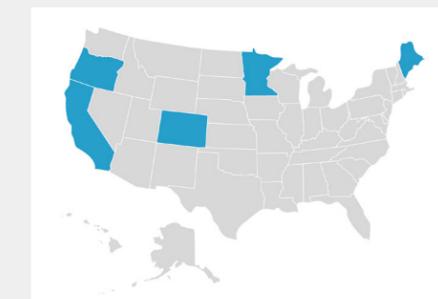
The desired outcome of implementing an eco-modulation program in EPR legislation is environmentally driven, but executed through policy. Eco-modulation regulates packaging design without banning or mandating, rather it uses economics as a policy lever. The monetary system is structured so there are lower and higher fees called bonuses and maluses, as the proverbial sticks and carrots to improve packaging design. Packaging has a life cycle. It begins with sourcing the raw materials through use or reuse, and finally when the package can no longer be used it is recycled, composted, disposed of, or turned into something new. Eco-modulation is a concept that utilizes information about a package's entire life cycle and translates that into financial impacts.

“Eco-modulation regulates packaging design without banning or mandating, rather it uses economics as a policy lever.”



Five U.S. States with EPR

As of March 2025, five U.S. states have passed EPR laws. Each law is different, but every EPR program across these states includes eco-modulation.



In May 2024, Minnesota became the fifth and latest U.S. state to pass EPR. As of March 2025, 10 more states have introduced legislation on EPR for packaging this year.



4. End-of-Life and Life Cycle Characteristics



When categorizing types of eco-modulation fees, one can think of two buckets that encompass the various characteristics. There are factors that fit under “End-of-Life,” and characteristics that are better described as “Life Cycle” characteristics. End-of-Life characteristics relate to what happens to the package once it is used and no longer needed to serve its intended purpose for the consumer. The Life Cycle characteristics differ by focusing on not only the end of a package “life,” but also the entire cycle of a package, including material sourcing and transportation. Some characteristics can fit under each bucket instead of just one, but when thinking about

eco-modulation it is important to consider what environmental challenges the program will address and use that as a guide for fee schedule development.

While eco-modulation of EPR fees impact design and production of packaging, it is not the only policy solution for packaging sustainability. Governments use a variety of regulatory levers like bans, restrictions, or minimums (such as for recycled content) in addition to eco-modulated fees to push industry to lessen the environmental impacts of packaging. Market-based incentives, procurement preferences, and other

non-regulatory influences can shape outcomes as well.

Overall, eco-modulation is a part of a larger policy concept, EPR, that uses a “polluter pays” principle to affect outcomes of products. In the case of packaging, eco-modulated fees mean various factors like recyclability, recycled content, and others will increase or decrease the fees charged to producers. Whether these fees sufficiently incentivize producers to change their packaging is still to be seen in the U.S. as the programs are just beginning to be implemented.

Eco-modulated fees mean that factors like recyclability or recycled content will increase or decrease the fees charged to producers.

END-OF-LIFE CHARACTERISTICS AND EXAMPLES				
Characteristics	Recyclability	Product Labeling or Instruction	Chemicals of Concern	Recycling or Composting Rates
Examples	Fee incentives (bonus) in Colorado, Maine, and Minnesota for enhanced recyclability	Fee incentives in California and Maine for product labeling	Fee disincentive (malus) in California for the presence of toxics in packaging	Fee incentives in Oregon for materials with higher recycling rates compared to other covered products.

LIFE CYCLE CHARACTERISTICS AND EXAMPLES			
Characteristics	Recycled Content	Reusable or Refillable	Lightweighting
Examples	Fee incentives in Colorado, California, Oregon, Maine, and Minnesota for utilizing recycled content in packaging	Fee incentives in Colorado, Maine, and Minnesota for increased reuse/refill of packaging	Fee incentives in Oregon for the product to package ratio



5. What's Happening in the U.S. with Eco-modulation?



No two EPR for packaging laws are alike in the U.S. However, they all include eco-modulation of fees. In terms of legal requirements there is a spectrum in the U.S. packaging EPR laws. Most of the laws have specific language written into the law explaining what factors are required of eco-modulation within the program, and allow for the Producer Responsibility Organization (PRO) to determine the specific criteria. This means that the laws explain the “End-of-Life” or “Life Cycle” factors they'd like to see within eco-modulation, setting the framework for what the state wants to see as a part of the eco-modulation program. As mentioned above, these factors include:

- Recycled Content
- Reuse
- Refill
- Lightweighting
- Toxicity
- Recyclability
- Renewably Sourced
- Source Reduction
- Labeling

The table on the next page outlines the eco-modulation factors mentioned in the law of the five states with EPR. The five states are in various stages of implementation, so there are unknowns about the fees associated with eco-modulation. The fees either increase or decrease, also referred to as the bonus or malus amount, and will be determined by the PRO and factored into the fee schedule for producers.

What factors do different states consider? When does eco-modulation start?

Every state includes PCR as a factor to be considered, but that is the only commonality across all five states. Reuse and recyclability are the next most common characteristics in the eco-modulation of fees. While Oregon does not require reuse in the law language, it falls under the consideration of life cycle environmental

impacts and the PRO has pledged to develop a bonus for reusable packaging. Oregon is the only state to base the eco-modulation program on life cycle assessments.

While eco-modulation is included in every EPR law in the U.S., the actual implementation of the fees is far from finalized. We will see Oregon's finalized fee schedule first in June 2025 after producers submit supply reports, but the eco-modulation bonus won't be granted until the 2026 program year.

Colorado's eco-modulated fees are under consideration and the PRO is initiating a committee to help develop the program. In October 2025, the producer responsibility organization Circular Action Alliance (CAA) will publish guidance alongside the 2026 fee rates. Starting in 2027, the PRO will pay out the eco-modulation bonuses granted in the previous year, essentially lowering the fees for producers who reduce the environmental impacts of their packaging.

As for the other states, the program plan for California is expected mid-2026, and October 2028 in Minnesota. Maine will release a RFP in September 2025 seeking a stewardship organization, or PRO. After these dates we will know more specifics about the eco-modulated fees. While we track implementation timelines and eco-modulation developments, the best resource for more information on Oregon and the other states with a PRO is [CAA](#), the producer responsibility organization.

Stay tuned as states work through the rulemaking and implementation process for updates on eco-modulation in EPR for packaging and paper programs in the U.S. You can find out more through our [Packaging EPR Collaborative](#), our [EPR tool](#), [monthly Policy Roundups](#), and other member-only resources.

STATE-BY-STATE ECO-MODULATION FACTORS CONSIDERED

FACTOR	CALIFORNIA	COLORADO	MAINE	MINNESOTA	OREGON
RECYCLING RATE	X				X
PCR	X	X	X	X	X
REUSE	X	X	X	X	
LIGHT-WEIGHTING	X	X		X	
RECYCLABILITY	X	X	X	X	
RENEWABLE SOURCING	X			X	
TOXICS	X		X	X	
LABELING	X		X		
COMPOSTING	X			X	
REDUCTION	X	X	X		
PACKAGE TO PRODUCT RATIO					X
LIFE CYCLE ASSESSMENT					X
MATERIAL CHOICE					X





Conclusion

Eco-modulation is a key economic lever incentivizing sustainable packaging in EPR programs across the U.S. While all five states' EPR programs include eco-modulation of fees, no two EPR for packaging laws – or their eco-modulation structures – are alike in the U.S.

Factors and characteristics considered in states' eco-modulation frameworks, implementation timelines and specific approaches vary significantly state-to-state. As these states progress through their rulemaking and implementation processes, you can stay up-to-date with SPC resources from our [Packaging Policy pillar](#).

Eco-modulation utilizes information about a package's entire life cycle and translates that into financial impacts for producers... Eco-modulation regulates packaging design without banning or mandating designs.

Sources:

["OECD Environment Working Papers No. 184, Modulated fees for Extended Producer Responsibility schemes \(EPR\),"](#) OECD.



Projects of GreenBlue

