



West Coast Climate & Materials Management Forum

Extended Producer Responsibility for Packaging: Ideas for Integrating Climate Mitigation

Disclaimer

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Introduction

This document was developed by a committee of the West Coast Climate and Materials Management Forum (the Forum) and is intended for waste reduction professionals and policy makers.

Extended Producer Responsibility (EPR) for packaging is increasingly being considered and/or implemented in various parts of the United States, however the focus is often limited to recycling systems. With its emphasis on climate, the Forum seeks to broaden the considerations of EPR policy to also include climate mitigation. This paper provides options for communities to consider that go beyond recycling for a more comprehensive approach to reducing the environmental impacts of packaging (and printed paper and/or food service ware for those bills that include these items).

The Forum's EPR Committee developed this document with three premises in mind:

- 1) Materials have impacts on the climate across their full life cycle, and most of these impacts occur during manufacture and supply chains, "upstream" of the consumer and waste management system;
- 2) Recycling should be advanced only to the extent that it is done responsibly, reduces pollution, and conserves resources;
- 3) Recycling is necessary but on its own is insufficient to fully address broader environmental challenges, such as climate change.

Four concepts are presented here for consideration:

Concept One: Fund Waste Prevention and Reuse

The Forum's first concept is to advocate for greater funding for waste prevention and reuse. Historically, there has been inadequate funding to implement waste prevention programs on a large scale.

Reducing waste often results in greater reductions in greenhouse gas (GHG) emissions than recycling or composting the same material at end-of-life. The U.S. Environmental Protection Agency found that about 42 percent of all domestic GHGs are associated with the production, transportation, and disposal of materials and products. Most of these emissions occur during manufacture, or “upstream” of the consumer, and cannot be reduced through recycling alone.

EPR bills could include a requirement for Producer Responsibility Organizations (PROs) to fund waste prevention and reuse programs. EPR laws enacted by Oregon and Austria have included such requirements. In Oregon’s Plastic Pollution and Recycling Modernization Act, up to 10 percent of collected funds are mandated to fund such programs. Funds can be distributed through a public entity rather than PROs for optimum effectiveness and public benefit.

Funding can be used to evaluate options via pilot projects, or to fund broader shifts in market practices. For example, Oregon has stated that its waste prevention fund – which may generate upwards of \$8 million annually – could be used to effectively transition many school cafeterias from single-use dishware to reusables; it could also support other dishwashing infrastructure that is critical for rollout of programs that focus on keeping reusable food ware in circulation rather than replacing one type of single-use material with another “less bad” single-use option. These are just two of many examples of projects that could be funded.

Single-use items are sometimes preferred by businesses because they appear to cost less or be more convenient than reusables. Lower costs reflect a failure of market prices to account for the full costs to society of the product’s waste and pollution. While some organizations have found that they can save money using reusables, many continue to prefer single use items. A stable funding source via EPR could increase the use of reusables. It would also lead producers to take into account some of the costs their products impose on society.

Concept Two: Set Goals/Mandates for Waste Prevention and Reuse

Including explicit waste reduction goals in EPR for packaging policies is a way for these mandates to broaden their scope beyond recycling and achieve the significant savings associated with the upstream benefits mentioned above. EPR mandates and policies could benefit from clear statements that source reduction and reuse (where applicable) are core to their implementation.

We need to learn how to set targets in ways that are practical, measurable, and which achieve actual environmental benefits. Packaging can provide many valuable services to society (one of which is preventing product damage and reducing product waste), and any prevention mandates need to be designed with the “big picture” in mind. By most metrics, the environmental impacts of products are significantly bigger than those of their packaging.

Similar caution is needed for reuse targets. While multiple studies show that reuse can reduce environmental impacts associated with single-use products and packaging, the benefits of reuse depend on *how* it is implemented. Depending on the type of material and what it is replacing, the benefits of reusables may hinge on such variables as washing, transportation, and loss rates of reusable items.

While prevention and reuse are generally preferable to recycling, *all* of those practices need to be viewed as *means to an end*, with reduction in pollution (including climate pollution) and conservation of resources being an important goal, potentially a higher priority than landfill avoidance.

Concept Three: Require Evaluation and Disclosure of Environmental Impacts

Policies intended to integrate climate mitigation should focus explicitly on lowering GHG emissions associated with packaging. This requires a standard methodology for evaluating the carbon impact of different packaging alternatives. We know from experience with the U.S. Toxics Release Inventory, Health Product Declarations, high priority chemicals in children’s products reporting, and mercury use in products reporting, as examples, that disclosure can be a powerful driver of change. So how do we get producers to disclose GHG emissions?

One approach was adopted in Oregon’s Plastic Pollution and Recycling Modernization Act (2021). This law creates an incentive for evaluation and disclosure of impacts through mandatory eco-modulation of fees that producers pay to their PRO. The law requires that PROs offer fee reductions for materials that have lower life cycle environmental impacts. Evaluations will have to adhere to new standards (to be established as part of implementation of the Act), which will help bring consistency and comparability to the science of life cycle assessment (LCA) and may also include some of the environmental considerations that LCA does not yet adequately evaluate.

These kinds of disclosure approaches are in their nascent stages for packaging, but examples of their successful use can be drawn from the construction materials sector, including “buy clean” legislation, Health Product Declarations, and standards for lower carbon concrete developed by Marin County, CA; Portland, OR; and others.

Concept Four: Optimize the Recycling System

Recycling and composting typically reduce GHG emissions when compared to the alternatives of landfilling or incineration. For this reason, recycling and composting are often promoted as climate-friendly alternatives. However, this generalization masks three important factors that need to be considered to optimize recycling: a) not all recycling is equally environmentally beneficial; b) some recycling activities have the potential of increasing GHG emissions; c) “recycling” and “recyclable” are not the same. Optimizing the recycling system to achieve the greatest reduction in GHG emissions is not the same as maximizing recycling rates, or aiming to recycle or compost all materials.

Let’s briefly examine each of these three factors:

- A. Not all recycling (and composting) is equally beneficial.** The climate benefits of recycling are largely a result of the displacement of virgin resources. Since not all virgin resources are the same, it makes sense that not all recycling is equally beneficial in terms of GHG impacts. This is true both when comparing different materials against each other (e.g., recycling of glass versus recycling of aluminum), and when comparing recycling pathways for the same material against each other. For example, cardboard can be recycled *or* composted, but the recycling pathway offers much greater potential for GHG reduction. Similarly, glass can be recycled via “closed loop” processes back into glass bottles, or via “downcycling” into pozzolan (a cement substitute). The pozzolan pathway requires less energy (and emissions), loses a smaller percentage of collected material during processing, and displaces a much more impactful material (cement), resulting in net climate benefits that are many times higher than recycling glass back into glass bottles.
- B. Some recycling pathways have the potential to increase GHG emissions.** Although these tend to be the exception and not the norm, there are some recycling activities that are best avoided if one’s goal is to reduce GHG emissions. For example, modeling by the Oregon DEQ found that drop-off recycling that requires users to transport low-value materials long distances may result in more emissions from personal vehicle use than are offset by the recycling process.

- C. **“Recycling” is not the same as “recyclable” (and “composting” is not the same as “compostable”).** Since recycling and composting are typically more favorable from a climate mitigation perspective than disposal, it seems intuitively reasonable that “recyclable” (and “compostable”) items will also result in lower overall emissions. But this common assumption ignores the fact that, for many materials, the impacts of production dwarf the potential benefits of landfill diversion via recycling or composting. Further, there can be significant variation in the carbon footprint of different materials and production practices, and these variations can outweigh the GHG benefit of recycling. There are many case studies where “recyclable” or “compostable” items have higher emissions (even when they are recycled or composted) because of how they are made or what they are made of. **We should be careful to avoid a future where materials are managed in circular loops but end up *increasing* climate and other impacts. Any incentives or mandates for “recyclable” or “compostable” packaging should be paired with equally strong (or stronger) incentives or mandates for GHG impact evaluation, disclosure, and reduction, so that policy signals aim for a future that is both circular *and* low-impact.** This is an area that is ripe for more policy development.

Summary

The climate emergency threatening our planet requires responses that are both bold and thoughtful. EPR for packaging can and should consider opportunities to better reduce the GHG impacts of packaging. This requires an understanding of the nuances associated with different materials, different discard management pathways, and the sometimes-complex interaction between those pathways and larger emissions sources that occur upstream of the waste management system. Maximizing recycling using traditional accounting (tons diverted from landfill) is not the same as optimizing packaging or the waste management system from the perspective of GHG mitigation. Only through thoughtful evaluation and open-minded discourse will we plot a pathway that results in a future that is both circular *and* sustainable.

The Forum encourages jurisdictions and advocates considering incorporation of climate mitigation strategies into EPR for packaging to work with the Forum to share, develop, and refine policy solutions.

About the Forum: The West Coast Climate and Materials Management Forum is a collaboration of state, local, and tribal governments developing long-term sustainable materials management practices. We identify and share effective greenhouse gas emission reduction strategies that also improve the way communities source, use, and recover materials. By working together across jurisdictions and disciplines, we demonstrate effective ways for communities to reduce greenhouse gas emissions throughout the life cycle of materials. For more information, visit: <https://westcoastclimateforum.com/>.