

Eco-Modulation Definition

Eco-modulation is a regulatory approach that assigns higher fees to more harmful materials and lower fees to more sustainable materials. Eco-modulation refers to *both* of the following mechanisms:

1. **Passive Factors:** Base Fees for each material differ for various materials based on their relative recyclability, and these differences are felt "automatically" by producers as they report and pay fees
2. **Active Factors:** Additional bonuses (discounts) producers can apply for based on specific packaging attributes.

So far, two of the seven states that have passed packaging EPR legislation have established their own fully fledged eco-modulation programs – Colorado and Oregon – and they both have treated eco-modulation differently.



Colorado's Eco-Modulation Program

Consists of **two sets of passive factors** – the differences in the base fees themselves, and then **three potential built-in bonuses/malus** based on additional recyclability concerns – and **four active factors**.

Colorado's Passive Factors

- **Detriments Malus:**
 - Automatically applies a 5% increase in dues for all materials that disrupt recycling
- **Not on MRL Malus:**
 - Applies to all covered materials that fall on the Additional Materials List (AML) or Not Collected List (NCL)
 - Keeps AML dues $\geq 20\%$ above similar MRL materials; NCL dues $\geq 10\%$ above similar AML materials
- **High Recycling Rate Bonus:**
 - Automatically applies a 5% bonus (discount) to dues for materials with high recycling rates

Colorado's Active Factors

- **Reduction Bonus:**
 - 5% bonus granted when packaging materials achieve a weight reduction of at least 10%
- **Enhancement Bonus:**
 - 5% bonus for improvements that raise commodity value or recyclability
- **PCR Bonus:**
 - 5% bonus for the portion of PCR content supplied in covered materials, provided the PCR content rate threshold for that category is met or exceeded
- **Reuse/Refill Bonus:**
 - 5% bonus granted to packaging that is designed for refill-at-home



Oregon's Eco-Modulation Program

Consists of **three bonuses (A, B, C)**, each dependent on the pursuit and disclosure of life cycle assessments (LCAs). These LCAs must follow the Lifecycle Evaluation (LCE) methods set by Oregon's Department of Environmental Quality.

Bonus A

- Granted for voluntary disclosure of LCAs, for up to 10 SKUs or SKU batches
- Bonus set at 10% of base fees, capped at \$20,000 per LCA
- **No improvements need to be shown by LCA**

Bonus B

- Granted when an **LCA proves impact reductions** from a packaging change
- Bonus set at up to 30% of base fees, capped at \$50,000 per LCA report
- Bonus level scales with level of impact

Bonus C

- Granted when an LCA proves impact reductions from a **transition to a reuse/refill model**
- Bonus set at up to 30% of base fees, capped at \$50,000 per LCA report
- Bonus level scales with level of impact



California's Eco-Modulation Program

SB 54 mandates nine eco-modulation factors, but CAA's program plan has only begun operationalizing a subset of them on a multi-year rollout running through 2029 and beyond. Because California's program is younger than Oregon's or Colorado's, there are more unknowns.

What We Know

- **Nine eco-modulation factors:**
 1. PCR content
 2. Source Reduction / Right-Sizing
 3. Packaging Standardization
 4. Compliant Disposal / Recycling Labeling
 5. Accelerating Source Reduction & Reuse / Refill
 6. Renewable-Derived Plastic
 7. Certified Compostable
 8. Presence of Hazardous Materials
 9. Presence of toxic Heavy Metals / Pathogens / Additives
- **Two mechanisms:** passive & active bonuses
- Total bonus incentives cannot exceed a producer's total payable base fees

What We DON'T Know

- Precise rollout of each of the nine eco-modulation factors
- Actual dollar or percentage bonus/malus rates have not been created for the eco-modulation factors except tentatively for APR-certified PCR content
- No criteria have been developed for the bonuses/maluses
- Specific "problematic features" targeted by one of the maluses have yet to be named