

Oregon's Recycling Modernization Act

Nov. 16, 2023

Question and Answer Webinar

Request for Information #2 – Evaluation of Life Cycle Impacts

Agenda

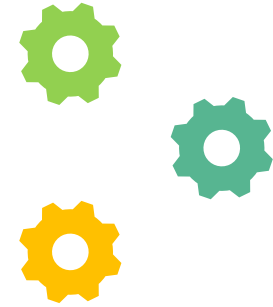
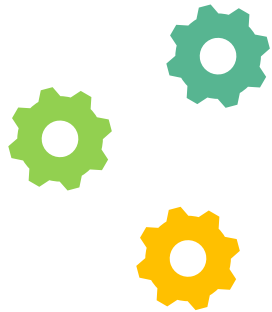
- Introduction from DEQ (15 Minutes)
 - Moderator intro / tech guidance
 - Background on the rulemaking for life cycle impact evaluation
 - Update on the rulemaking and RFI process
- Overview of the RFI, broken into 3 subsections (1 hour 15 min):
 - Clarifying rules
 - Core Product Category Rules (PCRs)
 - PCR focal areas

(Q&A after each subsection)
- *As needed* – substantive/content discussion (30 Minutes)

Webinar Basics

- Questions?
 - Enter them into the “Q and A” control panel, or
 - Raise your hand if you would like to speak and we will unmute you
- Chat will be disabled
- Remain muted unless asking a question

Rulemaking – Evaluation of Life Cycle Impacts



This rulemaking is part of the Recycling Modernization Act

www.RecyclingAct.Oregon.gov

The screenshot shows the Oregon Department of Environmental Quality (DEQ) website. The top navigation bar includes links for Air Quality, Land Quality, Water Quality, Recycling and Waste Prevention, Action on Climate Change, Resources, and About DEQ. The main header features the DEQ logo and the text "Recycling DEQ's mission is to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water." Below this, a breadcrumb trail reads: "Recycling > Modernizing Oregon's Recycling System > Plastic Pollution and Recycling Modernization Act".

Plastic Pollution and Recycling Modernization Act

Recycle Right!
Reciclar Correctamente

RECYCLING IN OREGON ▾

LOCAL GOVERNMENT RESOURCES ▾

MODERNIZING OREGON'S RECYCLING SYSTEM ▾

Life Cycle Impact Evaluation

The Plastic Pollution and Recycling Modernization Act will update Oregon's outdated recycling system by building on local community programs and leveraging the resources of producers to create an innovative system that works for everyone. The Oregon legislature passed the Recycling Modernization Act (Senate Bill 582) during the 2021 legislative session. The new law became effective Jan. 1, 2022 and recycling program changes will start in July 2025.

About the new law

This system-wide update will make recycling easier for the public to use, expand access to recycling services, upgrade the facilities that sort recyclables, and create environmental benefits while reducing social and environmental harms, such as plastic pollution. Producers and manufacturers of packaged items, paper products and food serviceware will pay for many of these necessary improvements and help ensure recycling is successful in Oregon.

✉ [Sign up for text or email updates via GovDelivery.](#)

Learn about the Recycling Modernization Act

Introduction to the Recycling ...

The Future of Recycling Proce...

Relevant Statute

459A.944 Life cycle evaluation; rules. The Environmental Quality Commission shall establish by rule standards for the evaluation and disclosure of the environmental impacts of covered products through the life cycle of the products. Rules adopted under this section must:

(1) Establish procedures and requirements to be used by producers when evaluating the life cycle impacts of covered products to obtain an incentive under ORS 459A.884 or when required to do so under subsection (2) of this section.

(2) Require large producers to:

(a) Once every two years, perform an evaluation of the life cycle impacts of at least one percent of covered products that the large producer sells or distributes in or into this state;

(b) Provide the results of the evaluation to the Department of Environmental Quality; and

(c) Make the evaluation available on the website of the producer responsibility organization of which the large producer is a member. [2021 c.681 §33]

Relevant Statute (cont.)

ORS 459A.884(4) In addition to the base fees described in subsections (2) and (3) of this section, a producer responsibility organization's membership fee schedule **must incentivize producers to continually reduce the environmental and human health impacts of covered products** by offering fee adjustments to producers that make or have made changes to the ways in which they produce, use and market covered products. Fee adjustments developed under this **subsection must include lower fees for covered products with a lower environmental impact and higher fees for covered products with a higher environmental impact.** In establishing the criteria for the graduated fee structure, a producer responsibility organization must consider factors that include, but are not limited to:

- (a) The post-consumer content of the material, if the use of post-consumer content in the covered product is not prohibited by federal law;
- (b) The product-to-package ratio;
- (c) The producer's choice of material;
- (d) Life cycle environmental impacts, as demonstrated by an evaluation performed in accordance with ORS 459A.944; and**
- (e) The recycling rate of the material relative to the recycling rate of other covered products.

Correlating factors to reduction of environmental impacts

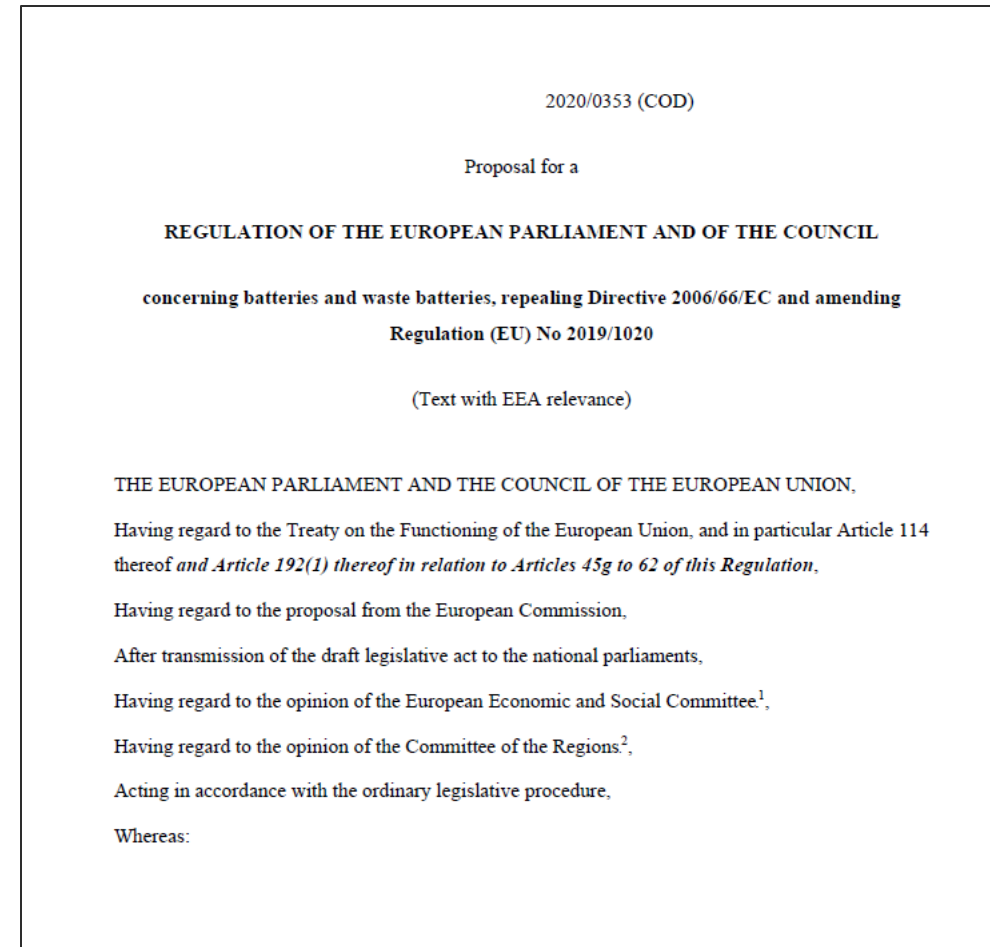
- (a) Post-consumer recycled content → Meaningful correlation but only when comparing within the same material
- (b) Product-to-package ratio → Meaningful correlation, but ideally optimization rather than minimization is incentivized
- (c) Producer's choice of material → Meaningful correlation, but need to demonstrate impacts per material
- (d) Life cycle environmental impacts → Meaningful correlation if methods of measurement are comprehensive and standardized
- (e) Recycling rate → Unclear how recycling rate correlates when comparing across materials

Proposed Approach: Product Category Rule

What is a product category rule? (PCR)

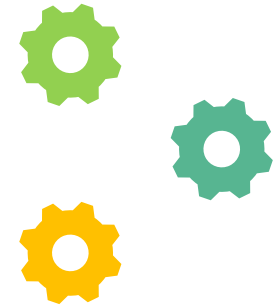
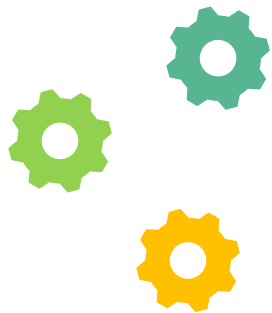
Some key components:

- Evaluation goal and scope specifications
- Product specific calculation rules
- Data requirements and sources
- Impact categories
- Report format
- Review procedures



Concerns about Life Cycle Assessment (LCA)

Rulemaking – Process Update

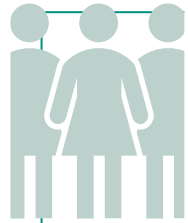




Rulemaking

- Advisory Committee advises on rule concepts
- Development of some rule concepts involves additional stakeholder feedback
- Rules adopted by the Environmental Quality Commission through formal process

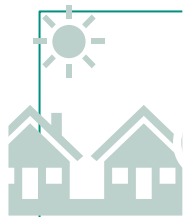
During the first RFI process we reached....



2 Global Advocacy Organizations



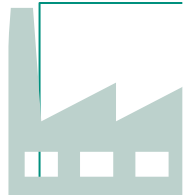
1 LCA-specialized consultancy
2 certification and standard-setting orgs



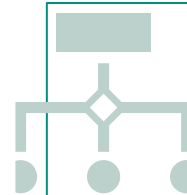
2 Academic and Research Organizations



2 Local, 1 Federal, and 1 International Government Bureaus



2 Multinational Producers
1 Local Producer
3 Material-Specific Trade Associations



2 Producer Responsibility Organizations

Rulemaking Advisory Panel (RAP)



- Roland Geyer, Professor, University of California at Santa Barbara



- Simon Hann, Principal Consultant, Eunomia Research & Consulting Ltd (UK)



- Christoph Koffler, PhD - Technical Director Americas, Sphera Solutions, Inc.

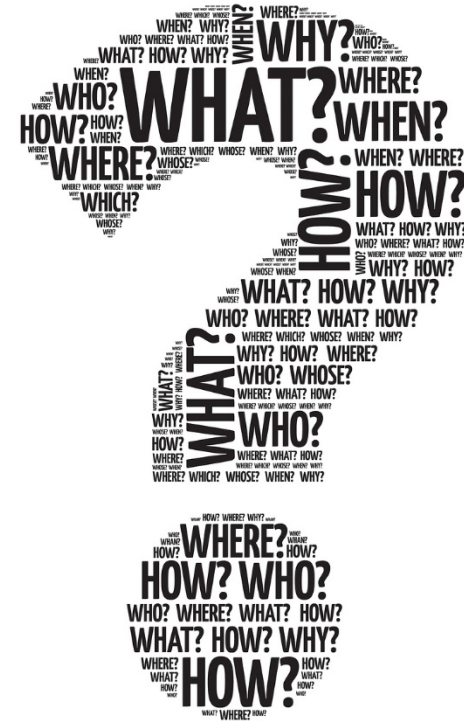


- Emily Wynne, Sustainability Consultant, Quantis

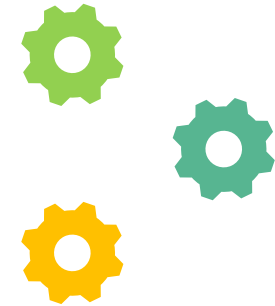
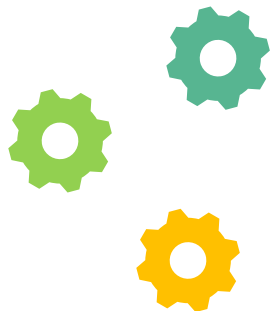
Timeline for Rulemaking



Q and A Pause



RFI #2: 10 rule concepts



RFI - Logistics

- Available online – [DEQ's Life Cycle Impact Evaluation page](#)
- Responses due in writing by Dec. 15, 2023
- Responses and/or Questions can be sent to - RethinkRecycling@deq.state.or.us

Clarifying Rules – Large Producer Disclosure

Rule concept

1. **“One percent”** is defined as 1% of the SKUs sold by the producer in or into the state. A producer shall order its SKUs by Oregon sales revenues and take the top 1% of SKUs. Batch assessments can cover multiple associated SKUs. Primary, secondary, and tertiary packaging associated with a given SKU would be included in an assessment.
2. **Calendar for the large producer disclosure:** Deadline for first disclosure = December 31, 2026, subsequent deadlines will occur at two-year intervals (i.e., Dec. 31, 2028; Dec. 31, 2030; etc) and will use producer rankings published in the prior year.
3. **Requirements for subsequent disclosure:** If still a large producer two years later, SKUs should be ranked again by Oregon sales and the next 1% should be selected (that has not already been assessed). SKUs can be repeated after 10 years.

Discussion questions

1. Are SKUs the right level of granularity?
2. Is an alternative approach to defining 1% needed for any large producers for whom the SKU-based approach would not work?
3. Is it feasible for producers to keep track of the primary, secondary and tertiary packaging associated with a given SKU?
4. Are Oregon sales an appropriate proxy for relative environmental impact of a particular producer’s product?

Clarifying Rules - Ecomodulation

Rule Concept

1. There must be bonuses for:
 - a) Simple disclosure
 - b) Significant impact reduction that is measured
2. Magnitude of bonus b) must exceed bonus a)
3. Impact reduction action must be undertaken directly by the producer.
4. Bonus a) can be claimed for 10 SKUs only.
5. “Significant reduction” defined as
 - a) >50% reduction within a priority impact category if no increases in other categories, or
 - b) >70% reduction to a priority impact category with no more than 25% increase in another category, as long as no increases within a priority impact category.

Discussion Questions

1. Is the “substantial reduction in impacts” definition sensible in terms of the impacts that are prioritized and the thresholds that are proposed?
2. Per the “substantial reduction in impacts” definition, a producer’s changing material to plastic from another material (e.g. paper, metal, glass) would not qualify for an impact reduction bonus, because the impact of plastics on ecosystem would go up prohibitively. Is this justified given global concern about the plastic pollution impacts of packaging?

Priority impact categories = 1) Impacts of plastics on ecosystems, 2) GWP potential (Climate change), 3) Air acidification, 4) Eutrophication, 5) Human toxicity, and 6) Ecotoxicity

Core Product Category Rules

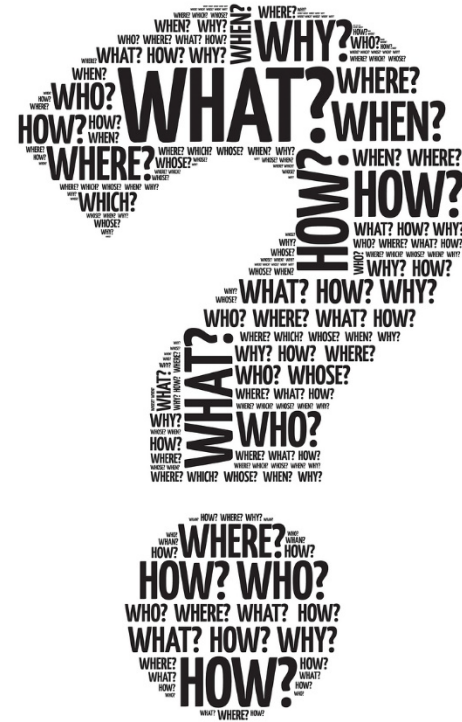
Rule Concept

1. ISO 21930 PCR for construction and building products serves as the underlying structure for the rules.
2. Content specific to construction products will be replaced with content specific to our law's covered products in a way that follows the principles and procedures set forth in ISO 14025, ISO 14040, and ISO 14044.
3. The outputs and results that will be generated by applying this rule concept are only based on Life Cycle Assessment (LCA) in the current iteration of the concept. However, reporting outside of that which is required for LCA is not precluded from inclusion in the rulemaking.
4. Assessments will be conducted and results reported for *declared units* – e.g. 1 ton, 1 item, 1 foot of [covered product] – which will be defined for each covered product in rule. Results should also be aggregated across the total amount of a given covered product put onto the market by a producer in Oregon during a defined reporting period.

Discussion Questions

1. Do you support the proposed approach of developing a general Product Category Rule for covered products with ISO 21930 serving as the structural backbone? Why or why not (what are the limitations or benefits of this approach)?

Q and A – Core Rules



Focal Area – Impacts and Indicators

Rule concept

1. All of the environmental impacts and indicators from ISO 21930 would be mandatory for inclusion in an assessment, as would additional human toxicity and ecotoxicity impacts and indicators.
2. Additionally, emergent impact categories and methodologies would be encouraged for (optional) use, including, but not limited to:
 - a. MariLCA plastic ecosystem impacts (required for significant impact reduction bonus)
 - b. S-LCA indicators
 - c. LCIA based on Planetary Boundaries
 - d. Damage cost factors through natural capital accounting

Discussion questions

1. Does the approach, to prescribe a set of impact factors and methodologies based on ISO 21930 make sense? What are the limitations or benefits of this approach?
2. Are the methodologies to evaluate emergent impacts sufficient or deficient? Should they be allowed to be optional?

Focal Area – Additional reporting for plastic leakage

Rule concept

1. For plastic materials, producers would incur an additional reporting requirement—they would need to quantify the flows of plastic materials into and out of the production system using primary and/or secondary data.
2. Producers would use the methodology outlined in the **plastics leak project** to measure/estimate the flow of plastics into or out of a covered product system.

Discussion questions

1. It will be critical to track the flows of plastic leakage across the life cycle of products to perform impact assessment. Does the plastics leak project provide an adequate methodology to do so?
2. Is it reasonable to expect producers of covered products to obtain/track this information?
3. Is there a different approach that would ensure tracking of these flows of plastic leakage?
4. Are there existing LCI databases that already do this and if so, should DEQ prescribe specific datasets?

Focal area – Additional reporting for methane leakage

Rule concept

1. For all materials, producers would be required to report primary and/or secondary data on methane leakage in the underlying life cycle inventory for covered products.

Discussion questions

1. Is this an issue that warrants special attention in rules? Do existing LCI datasets already account for methane leakage in the upstream supply chain for petrochemical products (e.g. plastics)? Do the existing standards that these rules will require conformance with (ISO 14040, 14044, 21930) provide sufficient guidance/methods here?

Focal Area - Reusable Covered Products

Rule concept

1. DEQ proposes to define “*reusable product*” as a product that is a) designed for reuse, b) durable, c) supported with adequate infrastructure to enable reuse, and d) actually reused.
2. Assessment approach that includes:
 - Use phase variables (e.g. customer transport to reuse infrastructure, washing, etc.)
 - Return Rate factor that accounts for breakage, losses, or yield across each reuse cycle
 - Expected number of reuse cycles (examined through scenario analysis)
3. Require evaluation of three scenarios for a reusable covered product (expected, worst case, best case)

Discussion questions

1. How would you propose applying the impact reduction bonus to reusable products? If a producer switches from a single-use to a reusable product (packaging, serviceware, etc.), can the impact for the single-use product be compared with that of the reusable product, and a bonus be applied (or not) on the basis of the thresholds outlined in Rule Concept II? Or could it be problematic to compare the two scenarios with one another?
2. Are we requiring additional/undue burden on reusable covered products by requiring multiple scenarios?
3. Does our “reusable product” definition provide sufficient clarity for which covered products qualify as reusable?

Core Rules – Sensitivity Analysis

Rule concept

1. Producers must perform sensitivity analysis for key data, parameters, or methodological choices (i.e. the impact hot spots) in the life cycle evaluation of their products. Sensitivity analysis is generally understood in this context as a “systematic procedure for estimating the effects of choices made regarding methods or data on the outcome.
2. The sensitivity analysis should specifically include the mean, range, min/max, and variance, across all required LCIA and indicators. As an example, a producer testing individual variables, such as, but not limited to:
 - a. Electricity grid mix
 - b. Recycling allocation methodology

Discussion questions

1. Should DEQ require sensitivity analysis?
2. How should “key data, parameters, or methodological choices” be defined?
3. Should DEQ pre-select the parameters for testing/inclusion or leave that to LCA practitioner to determine?

Core Rules – Recycling allocation procedures

Rule concept

1. End-of-life allocation shall follow the requirements of ISO 14044, section 4.3.4.3.
2. More specifically, when calculating substitution benefits at end of life producers will need to follow the methods and guidelines found in chapter 7.1.7.6 *Benefits and loads beyond the system boundary in optional supplementary module D* of ISO 21930:2017.

These rules do not prescribe or favor one recycling allocation methodology but would prevent double-counting of benefits (i.e., applying credits to both upstream and end-of-life impacts)

Discussion questions

1. Should DEQ prescribe specific recycling allocation methodologies within these rules? If so, should there be a single methodology that is prescribed across all covered products? Or should product category or material-specific recycling allocation methodologies be set?
2. How should our rules on recycling allocation methodology be linked with the rules regarding eco-modulation of fees (i.e., Rule Concept II in this document)?
3. Should DEQ recycling allocation rules (e.g. the Circular Footprint Methodology) similar to those of the PEFCR program in Europe?
4. Does any specificity or distinction need to be made for different types of recycling (e.g. mechanical vs. chemical)?

Core Rules – Biogenic carbon accounting

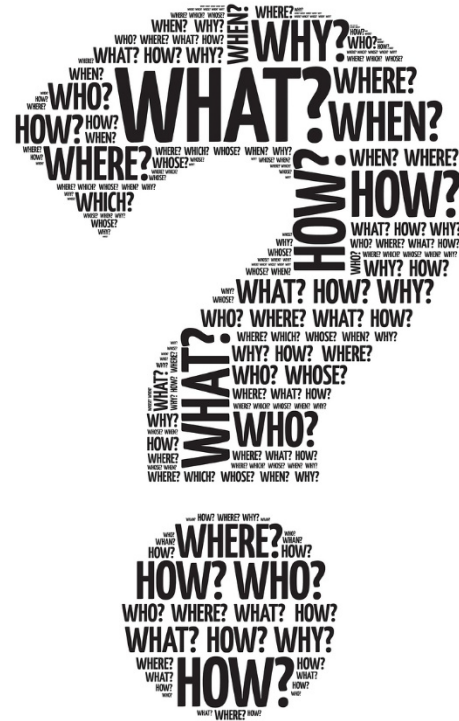
Rule concept

1. Producers will use a biogenic carbon accounting methodology that is consistent with the approach outlined by ISO 21930:2017. Namely, flows of biogenic carbon (shall be accounted for and reported within the underlying life cycle inventories of covered products).
2. GWP (that includes biogenic carbon flows) shall not be factored into gauging whether or not a “significant impact reduction has occurred, for the purposes of qualifying for the associated ecomodulation bonus. This reflects the short-lived nature of covered products that interactive with biogenic.

Discussion questions

1. Because of the variability of covered products (some interacting with biogenic carbon flows and others not) under these rules, we discourage the use of GWP results including biogenic carbon from any ecomodulation fees. However, is it sufficient to simply follow the structure of ISO 21930 here? Does a more nuanced approach need to be articulated for modeling biogenic carbon?
2. Should covered products which interact with biogenic carbon fluxes to/from the environment be required, as proposed, to report both GWP (excluding) and GWP (including) biogenic carbon?

Q and A – Core Rule Focal Areas



Open Discussion – General Questions

1. Should ecomodulation point in the direction of system change for the packaging, paper and food serviceware industries, and are these rule concepts pointing in that direction (i.e., incentivizing changes that collectively would amount to system change)?
2. Statute requires PROs to take five factors into account in developing their proposed approaches to ecomodulation, with evaluation of life cycle impacts one of the five. Do these rule concepts adequately capture the other four factors, so as that a PRO could consider that it has taken all factors into account in developing an ecomodulation approach based solely on life cycle impact evaluation? If you feel it is not adequate, how would you account for the other four factors (or any additional factors not called out in Statute)?

More information



[Visit DEQ's Plastic Pollution and Recycling Modernization Act page](#)

[Visit the Life Cycle Impact Evaluation page](#)

Title VI and alternative formats

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Thank you

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