

Topic Paper: Clarifications to the Life Cycle Evaluation Rules

RMA Rulemaking 3: Prepared for Rulemaking Advisory Committee discussion – March 30, 2026

Summary of proposed amendments

At the RAC meeting on Jan. 27, 2026, DEQ presented a [rule concept](#) that proposed amendments to the life cycle evaluation rules OAR 340-090-0900-0940, which are used by large producers when evaluating and disclosing the impacts of covered products pursuant to ORS 459A.944(2), and can be used by any producer when seeking CAA's ecomodulation bonuses for life cycle evaluation and disclosure A, B, and C.

In this follow-up concept, DEQ is proposing to:

1. Add rules at OAR 340-090-0930(1)(a)(A) stipulating how the refill rate calculation is to be factored into determining the **functional unit for a refillable packaging product**.
2. Amend the **methodology** in OAR 340-090-0930(2)(g), proposed at the January 27 meeting **for measuring refill rate**, derived from French government agency ADEME, to yield an Oregon-specific version of the equation.
3. Invite feedback from the committee on an approach for **substantial impact reduction bonuses for refillable packaging products** that limit the PRO's bonus disbursement for the parent product.
4. Invite feedback from the committee on the appropriate **weighting factors for plastic impacts** at OAR 340-090-0930 Table A, making possible changes to the factors on the basis of feedback received.

Background

During and after the Jan. 27, 2026, meeting, DEQ received the following feedback on its life cycle evaluation rule concept that has prompted this follow-up concept:

- One committee member noted a disconnect between the refill rate equation derived from French government agency ADEME, proposed for use in the context of LCEs conducted on refillable parent-child packaging products, and the actual number of refills that has occurred, and questioned whether or not the refill rate equation is intended to factor in to determination of the the functional unit for refillable packaging products.
- During the Jan. 27 meeting, multiple committee members and a public comment expressed concern about disbursement of CAA's Bonus C for single-use child packaging that is part of a refillable packaging product. Meanwhile, one committee member submitted feedback after the meeting asserting that child packaging should be incented more than parent packaging, as a higher refill rate means more child packaging.
- During the January 27 meeting, multiple committee members expressed interest in reconsidering the weighting factors for plastic impacts at OAR 340-090-0930 Table A and concern that these weightings inadequately represent the seriousness of plastic impacts relative to climate impacts.

DEQ considered the above points meriting further committee consideration, DEQ also received some additional feedback that it has chosen not to follow up at this time. The comments received and rationale for not acting are included in Appendix 1.

Proposed amendments

1. Setting the Functional Unit for Refillable Packaging Products

Concern: It is unclear whether or not the refill rate informs or stands alone from the calculation of the functional unit.

Proposed Amendment: Council feedback regarding the definition of “refillable packaging product” and equation for refill rate has prompted consideration about how producers are to set the functional unit for refillable packaging products (i.e., the reference unit for which the assessment should be conducted and the results should be reported). DEQ proposes to specify at OAR 340-090-0930(1)(a)(A) that, for refillable packaging products, the refill rate method stipulated for use by OAR 340-090-0930(2)(g) should be used to determine the proportion of product delivery demand that is met by parent, and the proportion met by child packaging, and these ratios should be used to scale parent and child packaging weights to the amounts necessary to deliver the functional unit, which will generally be 1m³ of product for a refillable.

For example, if the refill rate for a given refillable packaging product is 60%, then 60% of demand product demand is considered met by child packaging and 40% is considered met by parent packaging, and the weights of child packaging components should be scaled by a factor of 0.6, and parent packaging components by 0.4, in arriving at the total amount of packaging needed to deliver 1m³ of product.

2. Refillable Packaging Product Calculation Methodology

Concern: There appears to be a disconnect mathematically among the refill rate equation derived from French government agency ADEME and proposed for use in the context of an LCE for a refillable packaging product and the actual number of refills that has occurred.

Proposed Amendment: At the January 27 meeting, DEQ proposed to mandate at OAR 340-090-0930(2)(g) that LCE practitioners use a refill rate methodology derived from French government agency ADEME ([Jemet et al. 2024](#)) for the calculation of refill rate. The equation is as follows:

refill rate = [total units of single use refill, i.e. child, packaging sold in a given year multiplied by (volumetric capacity of the single use child refill packaging / maximum volumetric capacity of the parent packaging)] / total units of packaging placed on the market in that same year, where the total units of packaging placed on the market is the sum of parent packaging, child packaging, and volumetrically adjusted refills.

In association with a committee member’s concern that the equation does not correlate with the actual number of refills that have occurred, DEQ reviewed this equation in more detail, and is concerned about the equation’s inclusion of both total units of child packaging and volumetrically-adjusted refills (delivered by child packaging) in the denominator – this strikes DEQ as duplicative, and does seem to disconnect the equation’s output from the actual number of refills.

DEQ therefore proposes to modify the ADEME equation by removing the total units of child packaging from the denominator but retaining the equation otherwise as is. Note: this will result in higher refill rates than would be yielded by the ADEME equation as written, but it will yield results indicative of the actual number of refills and that can be used to determine the functional unit.

3. Disbursement of substantial impact reduction bonuses for refillable packaging products

Concern: At the January 27 meeting, committee members and a public commenter suggested that only parent and not child packaging should be attributed CAA’s Bonus C for substantial impact reduction through transition from single-use to refill. Following the meeting, a committee member opined the opposite – rather, that bonuses above all need to be attributed to child packaging because more refill and more impact reduction only

occurs in the context of a refillable packaging product through the use of more child packaging. This commenter meanwhile indicated that there could be a need to rather curb how much of the parent packaging is allocated a bonus.

Possible solution: Commenters on both sides of this issue share a concern that a larger bonus than is justified by the actual amount of refill that is happening could be awarded to a refillable packaging product (because refilling occurs at home and some parent packaging may only be used a single time and discarded as opposed to refilled), and what guardrails are needed to ensure that does not happen?

DEQ agrees that it does not make sense to remove the bonus from child packaging when impact reduction is occurring from the use of more child packaging, thus substituting/replacing single use packaging to fulfill demand, rather than less. Also, the proposed modifications and guardrails added to the definition of “refillable packaging product” in the previous rule concept seek to ensure that child packaging is used exclusively to refill parent packaging, meaning that the remaining unknown, and possible source of error/inflation of refill rate lies with parent packages being purchased full and used only once as opposed to being refilled. Otherwise, the following parameters are known: number of parents sold in a given year, number of children sold in that year, and how many children were used to refill parents (it can be assumed they all were).

CAA in the context of ecomodulation bonuses for reuse/refill in Colorado awards bonuses for all child packaging but only for the proportion of parent packaging sold that could be refilled by the total amount of child packaging sold, i.e., the adult packaging that is presumed to have been used only once and discarded is factored out and not awarded a bonus. See the example in the table below, in which 80,000 12 oz refillable parent bottles have been sold, but enough child was sold to only refill 50,000 of these bottles once; therefore, only 50,000 parent bottles are allocated the bonus.

Designation	Total Supply Units Sold in Given Year	Volume Per Unit, Fl. Oz.	Total Supplied Volume of Product, Fl. Oz.	# of Parent Units that can be Claimed Refilled and Attributed a Bonus
Parent	80,000	12	n/a	50,000
Child	10,000	60	600,000	n/a

DEQ would like to poll the committee’s opinion as to whether or not this approach is a good idea for Oregon.

4. Reconsideration of the weighting factors for plastics that contribute to the single score analysis for the substantial impact reduction bonuses (CAA Bonuses B and C)

Concern: Weightings representing the seriousness of plastic pollution impacts relative to climate impacts, as well as ratings representing the robustness of data characterizing plastic pollution impacts relative to climate data, may result in bonus determinations that overly reward climate impact mitigation when a given producer action has increased plastic pollution.

Proposed Amendment: DEQ proposes to recalculate the two plastic weighting factors in OAR 340-090-0930 Table A (those for plastic physical impact on aquatic biota and for plastic—other impacts) by polling the Rulemaking Advisory Committee and integrating its opinions of the seriousness of plastic pollution relative to climate change in with the polled opinions of the 15 RAC members from the previous rulemaking and the six DEQ experts from land, water, and air quality divisions who all contributed to generate the original ratings in 2023-2024. DEQ proposes to additionally slightly increase the data robustness factor for the impact of plastic physical impact on aquatic biota for 0.25 to 0.3, to reflect improvements to the MariLCA impact assessment method that have occurred in 2025-2026.

DEQ does not propose to make custom changes to any of the other impact weightings, as in the prior rulemaking it was decided to adopt the weightings from Europe's PEFCR life cycle assessment methodology as opposed to create a full set of weightings custom to Oregon. Should the weightings for the two plastics impacts be changed in this rulemaking, the weightings for the other impacts would merely be adjusted, maintaining their proportionality, to accommodate the changes.

Outcomes of proposed amendments

- Operations: Greater methodological and procedural clarity for producers accomplishing life cycle evaluations, and for the PRO managing its ecomodulation program.
- Fiscal or economic impacts: The proposed modifications to the refill rate calculation, the method for deriving functional unit for refillables, and for the plastic impact weightings may impact whether or not particular producer actions analyzed in an LCE are deemed to have achieved substantial impact reduction and are awarded ecomodulation bonuses.

Committee discussion questions

1. Are you comfortable with DEQ's decisions and rationales with respect to committee feedback that was not responded to with amended or new rule concepts?
2. Are you comfortable with how the approach to refillables has evolved from the last rule concept to this one? Why or why not?
3. Are you willing to be polled regarding the seriousness of plastic pollution impacts relative to climate impacts, and with your opinions being integrated into updated weightings?
4. Should CAA curb the amount of parent packaging awarded a bonus, and if so, should this be mandated in rule or be left to the program plan?

Contact

Oregon DEQ: Materials Management Program
Stephanie Caldera, Rulemaking Project Manager
RMARulemaking3@deq.oregon.gov

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities. Visit DEQ's [Civil Rights and Environmental Justice page](#).

Appendix 1: Rationales for Not Taking Action on Feedback Received

Topic	Relevant Rule	Comment Received	DEQ rationale for not taking action
Proposed definition of “refillable packaging product”	OAR 340-090-0900(38)	The proposed definition of “refillable packaging product” is too exclusive, and does not include several subtypes of refill at home nor refill on the go.	<p>The definition of “refillable packaging product” is intended to strike a balance between incenting as much impact reduction as possible while ensuring that refill rate data are as accurate as possible, which is impossible to do with at-home refill systems if the children might be used as single-use products rather than to refill parents. DEQ feels that the criteria that the ADEME definition imposes, that children are being used with parents and that the child package does not provide the same function as the parent, help achieve this balance.</p> <p>As for refill-on-the-go, it is uncommon at scale in the United States; as such, DEQ considers it acceptable to not adjust rules to account for this model. If this scenario becomes more prevalent a future rule change could be considered. For large producers whose products may be sold in refill-on-the-go at small specialty stores, it is such a minority portion of their product that it is likely not worth it for them to conduct the LCE and seek the bonus. As for small producers, if they are below de minimis thresholds at ORS 459A.863(32) they are exempt entirely from the Act.</p>
Proposed definition of “refillable packaging product”	OAR 340-090-0900(38)	In the Jan. 27 meeting DEQ said that a parent and child would have to be sold together to be considered a refillable packaging product. Rather, these packaging components should qualify for the bonus amount even when purchased separately, as long as they are clearly compatible as parent and child (i.e. deliver the same product, marketed as such, etc.).	The rule concept for defining “refillable packaging product” does not include a stipulation that the parent and child must be sold together; if this was stated during the Jan. 27 meeting, this was an error.
Confidentiality	OAR 340-090-0920(2)	If you have to make some information public in an LCE to get a bonus, it should be an all-or-nothing matter, rather than a matter of a producer picking and choosing what gets reported.	DEQ agrees and supports full transparency, but also recognizes that inherently some information about a product (its design or formulation) may be proprietary and rise to the level of confidential business information. If DEQ were to require this information within the context of voluntary disclosure (i.e., for the bonus submissions) it

			would likely limit producer interest in pursuit of the LCE ecomodulation bonuses.
Confidentiality	OAR 340-090-0920(2)	With respect to proposed mandatory transparency of the plastic leakage inventory value, no data previously communicated as a component of the confidential reports should be reframed as requirements for the public reports. It is important to allow producers to designate what is confidential or considered a trade secret in line with trade secret law. Singling out one value unfairly and disproportionately elevates the requirement for disclosure of one element over others. CAA notes this requirement in particular is also novel and not part of standard LCA approaches, further increasing disclosure risk for producers.	DEQ considers the leakage value to already be required of the public report by OAR 340-090-0920(2)(a), but in light of some ambiguity among producers as to what exactly comprises a “life cycle inventory analysis result,” DEQ has proposed to add rule language to make this explicit in the case of plastic pollution. DEQ is also singling out the plastic inventory value because interested parties are concerned about life cycle assessment methodology failing to comprehensively address plastic impacts. For the mandatory large producer assessments and simple evaluation and disclosure bonuses (CAA’s Bonus A), with respect to plastic impacts, the producer can stop at inventory analysis and does not need to proceed to impact assessment. If the inventory value is made public, essentially nothing would be made public with respect to impacts of this plastic leakage.
Third-Party Review	OAR 340-090-0920(4)	In order to keep LCE costs reasonable, DEQ should remain open to the idea of considering valid critical reviews completed by parties that can be deemed independent despite being part of the same producer (or an affiliate) organization.	In the prior and in this rulemaking, DEQ is endeavoring to align its LCE rules with best practices in life cycle assessment methodologies (e.g. ISO and PEFCR standards), and allowing critical reviews by employees of the company submitting the evaluation would be a departure from such methodologies.
Hazardous Substance Disclosure	OAR 340-090-0940(1)(a)	The checklist for hazardous chemicals in the guidance that DEQ has published for large producers should be voluntary rather than mandatory for use. The checklist goes above and beyond the requirement to disclose hazardous chemicals above 100ppm, with many chemicals on that list noting a PQL (ppm) under 100ppm.	DEQ is not proposing to mandate use of the checklist in rule, but that said, rule OAR 340-090-0940(1)(a) requires disclosure of intentionally-added hazardous substances that are at or above PQLs, and disclosure of hazardous substances present at concentrations of above 100 ppm. Therefore, the checklist comports with the rules and does not go above and beyond them.