



State of Oregon Department of Environmental Quality

# Rule Concept: Additional Requirements Related to Recycling Acceptance Lists

Plastic Pollution and Recycling Modernization Act (SB 582, 2021)  
Rulemaking Advisory Committee Meeting 4 of 5, Rulemaking 1

Dec. 28, 2022

## Background

This memo provides additional rule concepts on the topic of recycling acceptance lists. Concepts relate to the following topics:

- Membership fees charged by Producer Responsibility Organizations (PROs) to their members
- Material yield requirements in the context of “responsible end markets”
- Revisions to existing rules
- Effective date of all rules related to material acceptance lists

## Concepts for discussion at Jan. 11, 2023 RAC meeting

### PRO Membership Fees

#### Background

ORS 459A.869(2) requires producers to pay an annual membership fee to a producer responsibility organization. ORS 459A.884 provides requirements for such fees. Among these, ORS 459A.884(3) imposes special requirements on fee rates assessed on “covered products sold or distributed in or into this state that are *not accepted by recycling collection programs* in this state” (emphasis added). This begs the question: what does it mean to be “accepted” by recycling collection programs in this state? This question is significant as some covered products may be accepted through special, private collection programs, independent from any statewide services (e.g., the Local Government Recycling Acceptance List and PRO Recycling Acceptance List). Typically, these services will either be fee-for-service, and/or will operate in a limited geographic scope.

#### I. Rule concept for discussion: “Accepted by recycling collection programs in this state” (ORS 459A.884(3))

1. A material is “accepted by recycling collection programs in this state” (for the purpose of ORS 459A.884(3)) only if it is designated by administrative rule on the Local Government Recycling Acceptance List or the PRO Recycling Acceptance List, or otherwise has been added to the Uniform Statewide Collection List by the mechanism provided for in ORS 459A.914(4)(b).

## Yield (End Markets)

### Background

The [rule concept on responsible end markets](#) proposed a definition of “responsible end market”. To summarize, a responsible end market is one that is compliant, transparent, environmentally sound, and which achieves adequate yields.

The standard for “adequate yields” reads: “Recycles or causes to be recycled x percent of each material commodity within a bale, with the remaining material managed in a responsible manner and in alignment with Oregon’s hierarchy of materials management (ORS 459.015).” The aforementioned rule concept also noted that “The variable ‘x’ . . . is intended to serve as a placeholder for threshold(s) for recycling yield. DEQ . . . intends to revisit the question of setting appropriate thresholds for recycling yields in a subsequent meeting with the related topic of material lists will be discussed. DEQ intends to address expectations of mixed-material processing in setting these thresholds.”

### About yield

The concept of yield is an important one, given the potential of recoverable materials to be lost at various stages in the recycling process. However, the concept is also somewhat complex.

- Yield can be lost at several stages in the recycling process, including most notably at material recovery facilities (MRFs) and at material reclaimers (e.g., glass beneficiation plants or plastics reclaimers) and end markets (e.g., paper mills).
- Not all material is potentially recoverable or targeted for recovery. For example, tape and staples on corrugated boxes are not targeted for recovery by paper mills, and neither is the clay content of magazine and other glossy paper. Other examples of this include the plastic and aluminum layers of aseptic cartons (typically not recovered at a paper mill) and the paper fraction of a paper “can” that is marketed to a steel mill.
- Materials may be marketed in mixed bales. For example, polycoated and aseptic cartons might be baled with mixed paper and marketed to a paper mill (and they might make up only 1-2% of the weight of that bale, or even less). One paper mill might recover yield from the fraction of the bale consisting of aseptic cartons, while a different mill might recover little or no yield from the same material, even as it achieves a high rate of yield from the bale as a whole.

### Yield at end markets

For this rulemaking, a standard is needed to define acceptable yield at the level of the end market. End markets typically purchase (pay for) materials as a supply (ingredient) in a manufacturing process. End markets typically have a strong financial incentive to optimize yield, as they pay to purchase the materials, and then have to pay again to dispose of any fraction that they don’t recover (yield loss).

DEQ affirms that a yield threshold for the definition of “responsible end market” is necessary for two reasons: 1) accountability to the public, and 2) to ensure that materials on acceptance lists that are placed into mixed bales actually get recycled. Examples of this potential dynamic involves materials such as nursery packaging, clear plastic cups, and aseptic cartons, all of which are proposed for inclusion in the Local Government Recycling Acceptance List. Each of these materials are present in relatively small quantities, and some MRFs will likely sell them to end markets as part of mixed bales. Without a standard for “adequate yield” (at the end market), a MRF could ship such a bale to an end market that screens out and disposes of all of the material in question. The public interest and public’s trust is not served in such a scenario, as the material promoted as being “accepted” for recycling would in fact never be recycled.

## Yield and environmental benefits

While it is commonly understood that higher yield results in higher environmental benefits, this is only generally true if the end market is constant. For example, if glass cullet is being shipped to a bottle plant, a collection and beneficiation system that captures 90% yield from every ton (shipping 1,800 pounds to the bottle plant for every ton collected) will result in higher environmental benefits than a collection and beneficiation system that only captures 45% yield from every ton.

However, high yield does not always correlate with higher environmental benefits, especially when different end markets are involved. As examples:

- Collecting glass bottles and “recycling” them by crushing them and using them as a base for temporary roadways inside a landfill arguably achieves 100% yield (no materials are “lost”), whereas sending the same bottles to a beneficiation plant *en route* to a glass bottle or fiberglass manufacturer may result in 80-85% yield (15-20% of the glass may be lost in the beneficiation process). If transportation distances are equal, then the lower yield process results in higher environmental benefits overall.
- DEQ reached a similar conclusion in its screening-level life cycle assessment for polycoated cartons and aseptic packaging (see slides 94 - 133 of [this presentation](#)). In that assessment, DEQ compared the environmental impacts and benefits of sending these materials to a local paper mill that recovers lower yield, a distant tissue mill that recovers higher yield, and a distant wallboard manufacturer that recovers highest yield. While the paper mills only recover yield from the paper fraction of the cartons, the wallboard manufacturer uses all of the cartons’ contents. And yet, despite having the highest yield, the wallboard option was found to result in the worst environmental outcomes, due both to the reported impacts of the manufacturing process itself, and the relatively low benefits associated with displacement of virgin products.

So, while higher yield (lower loss rates) are generally desirable, there can be exceptions, especially when there are different end markets available for the material.

## Yield at processing facilities

Processing facilities can influence yield in more stages of the recycling process than end markets can, as processing facilities can increase or decrease yield both in their own operations (which they control) as well as their choice of end markets. For example, a MRF might lose anywhere from 2-30% of an inbound material in its own processes, and then choose between an end market that loses another 10-20% of the material. These rates can be combined into a “compound yield” that might range from 56% (where the end market achieves a yield rate of 80% on the 70% of incoming material that the MRF sends to them) to 88% (where the end market achieves a yield rate of 90% on the 98% of incoming material that the MRF sends to them).

The Plastic Pollution and Recycling Modernization Act requires separate requirements on processing facilities (ORS 459A.955) including several standards that relate to yield in their own operations as well as use of responsible end markets. Rules to establish those requirements are proposed for a separate rulemaking process. DEQ plans to consider the topic of both in-MRF (process) yield and compound yield as part of that separate rulemaking.

## II. Rule concept for discussion: “Adequate yield” (responsible end markets)

1. The [rule concept](#) on the proposed standard for “responsible end markets” is amended to state that “Achieving adequate yields” means “Recycles or causes to be recycled at least 60% of each material listed in the material acceptance lists even if multiple materials are mixed together, with the remaining material managed in a responsible manner and in alignment with Oregon’s hierarchy of materials management (ORS 459.015).”

The value of 60% is adequate to address the need for a yield standard presented above: it provides an assurance to the public that more than half of the material they prepare for recycling is being recycled, and it ensures that materials on acceptance lists that are placed into mixed bales will actually be recycled. DEQ expects that many end markets will easily exceed this threshold and for reasons explained above, will have economic incentives to do so.

2. The phrase “60% of *each material* listed in the material acceptance list” illustrates a need to better define the contents of each list. In several cases in the updated rule concept for acceptance lists (see Appendix 1 of rule concept, “[Recycling Material Acceptance Lists, Part Two](#)”), DEQ has grouped similar materials together into a single line item, largely for the convenience of the reader and also to indicate how certain materials might be promoted for recycling in groups.

In draft rules, DEQ proposes to further speciate (separate) some materials. For example “Plastic bottles and jugs, 6 ounces and larger: PET (#1) (clear only); natural and colored HDPE (#2) and LDPE (#4); clear and colored PP (#5)” may be rephrased as several distinct items, such as:

- “Plastic bottles and jugs, 6 ounces and larger, made of PET (clear only)”,
- “Plastic bottles and jugs, 6 ounces and larger, made of natural and colored HDPE and LDPE”, and
- “Plastic bottles and jugs, 6 ounces and larger, made of clear and colored PP”.

Coupled with rule concept (1) above, this would then require that bottles and jugs *of each resin type* be recycled, as opposed to letting high yield for one material compensate for low or no yield of another resin.

3. For paper “cans”, rules will clarify that the 60% yield threshold refers to either the metal fraction or the paper fraction of the package, and not the entire package. This is the only material DEQ proposes to distinguish in this manner. Other composite materials such as magazines, which are coated with clay, and aseptic cartons, which can contain polyethylene and aluminum fractions, can typically be recovered at yield rates in excess of 60%.
4. Calculation of yield shall exclude any contaminants that are included in the bale of received material, as well as incidental materials that are adhered to the received material but which are not targeted for recovery, such as tape and staples on corrugated boxes, or inks and labels on most types of packages.

## Amendments to Existing Rules

### Background

The Plastic Pollution and Recycling Modernization Act made multiple changes to existing statutes, some of which had been previously clarified in administrative rules. In several cases, those existing administrative rules need to be amended in order to comport with updated statute. These cases generally fall into two categories.

The first category involves straightforward amendments where a rule is no longer consistent with statute. In such cases, DEQ will propose rule amendments necessary to bring rules into alignment with amended statute. Because such alignment is necessary (rules may not contradict statute), DEQ does not plan to propose all of these as rule concepts. DEQ is aware of potential concerns involving changes to administrative rules, including the potential for unintended consequences. Proposed changes will be included in the draft rules that DEQ publishes for public comment in the spring 2023.

Examples of such rules to be amended include the following:

1. OAR 340-090-0010(3) defines “Collection service customers” to include “as of July 1, 2022, the multi-family residential and commercial tenants of landlords or property managers that are customers of a collection service for the benefit of their tenants”. The July 1, 2022 effective date stemmed from legislation adopted in 2015 (SB 263) that extended the opportunity to recycle to tenants of multifamily properties. That effective date was changed to July 1, 2026 by Section 50 of the Act.
2. OAR 340-090-0041 establishes the requirements of a “Contamination Reduction Education Plan”, which SB 263 (2015) added to the requirements of the optional program element for “expanded education and promotion” under the Opportunity to Recycle Act menu of program elements. However, the Recycling Modernization Act eliminated this requirement, so all references to it need to be moved from administrative rules.
3. OAR 340-090-0010(36) provides a definition of “recyclable material” that was consistent with statute prior to Jan. 1 2022; however, the Recycling Modernization Act changed that definition. The definition in rule will be updated to comport with statute, as will additional rules involving determining if a material meets the definition of a “recyclable material” contained in OAR 340-090-0140.

The second category of amendments involve changes that are not as straightforward. These are described in the rule concepts below.

### **III. Rule concepts for discussion: Amendments to existing rules**

1. The Commission implemented the original Opportunity to Recycle Act by establishing in rule the concept of “principal recyclable materials” (defined in OAR 340-090-0040(35)). The actual principal recyclable materials are established in OAR 340-090-0070, with different materials identified for different wastesheds. Local governments are then required to collect for recycling the principal recyclable materials (or a certain number of principal recyclable materials) as identified for their wasteshed. Since the Recycling Modernization Act establishes a separate process for identifying recycling acceptance lists, DEQ proposes to eliminate all references to principal recyclable materials in OAR 340 Division 90.
2. Yard debris is a principal recyclable material for the Metro wasteshed and is not addressed by the Recycling Modernization Act. Existing rules (such as OAR 340-90-0070(14) and OAR 340-090-0190(5) and (7)) establish special requirements or standards for recovery of that material. DEQ proposes to replace those rules with new rules that impose the same standards and requirements, but without a reference to “principal recyclable materials”.
3. OAR 340-090-0040(4) and (5) impose special requirements on local governments in selected wastesheds to collect and recycle rigid plastic containers if certain conditions are met. This language implements requirements in ORS 459A.665 (which was not amended), but as currently

written may create a conflict, or an appearance of a conflict, with new rules related to the Local Government Recycling Acceptance List. DEQ proposes to modify language as necessary to comport with all relevant statutes.

4. OAR 340-090-0068 provides rules relating to the determination of material-specific recovery rates. These rules will need to be modified to include the recycling rate for plastic packaging and food service ware under ORS 459A.926. DEQ will propose rules that are consistent with determining material-specific recovery rates for other materials.
5. OAR 340-090-0090(2) prohibits the disposal of source separated recyclable materials which has been collected or received from the generator by any method other than reuse or recycling except for used oil and wood waste which may be collected and burned for energy recovery. DEQ proposes to modify this language to allow for other methods of disposition if consistent with the new state policy hierarchy for management of materials, as amended by Section 46 of the Recycling Modernization Act and codified in ORS 459.015(2).
6. OAR 340-090-0130 elaborates on a “fair market value exemption” in ORS 459A.075. The fair market value exemption was created to allow waste generators and private recyclers to exchange materials for a fee and without being subject to franchised collection. OAR 340-090-0130(2)(b) defines “Recyclable material” as a group of materials identified by the city or county. DEQ proposes to change this to materials on the Local Government Recycling Acceptance List.
7. A review of OAR 340 Division 90 revealed some language that is redundant with other statute, or which is no longer relevant. DEQ classifies these issues as “housekeeping” and may propose some updates in the actual draft rule. An example would be OAR 340-090-0040(2) which has certain rules applying prior to 2018 and other rules going into effect on January 1, 2018. Rules that are no longer effective could be proposed for elimination.

## **Effective Dates**

### **Background**

Statute (for example, ORS 459A.005) requires local governments to collect for recycling materials designated by the Commission on the Uniform Statewide Collection List. Commingled processing facilities and PROs won't be prepared – or required – to support effective recycling of those materials prior to July 1, 2025. In the interim, local governments are still required to recycle materials under the Opportunity to Recycle Act.

In addition, some local governments may find it difficult to fully implement all changes required of them on July 1, 2025, particularly if they are relying on funding from PROs to change collection service (under ORS 459A.890(5)) and if supply chain disruptions continue into the next several years.

### **IV. Rule concept for discussion: Effective dates**

1. Materials acceptance lists established in this rule shall become effective July 1, 2025.
2. During the first PRO program plan period (July 1 2025 – Dec. 31 2027), DEQ shall use enforcement discretion and not enforce against any local government for a violation of ORS 459A.005 or 459A.007 relating to materials on the Local Government Recycling Acceptance List and which the local government was not previously collecting, so long as the local government is

making a good faith effort and adequate progress to expand service and material acceptance and meet all other requirements contained in ORS 459A.

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