



Working Evaluation of Materials

ORS 459A.913(3)

DRAFT – Updated March 14, 2022

Introduction

Section 22(3) of the Oregon Recycling Modernization Act (ORS 459A.914) requires the Environmental Quality Commission to consider multiple criteria when identifying materials that are suitable for recycling collection, and the methods for collection of those materials. Criteria are not weighted or treated as pass/fail criteria, but rather are considerations that can help guide a thorough consideration and examination of issues. This document provides a consistent platform for DEQ to seek feedback from members of a Technical Workgroup on specific materials and the criteria in Section 22(3). The document will evolve over time as DEQ completes internal preliminary evaluation, seeks feedback on batches of materials over the course of several Technical Workgroup meetings, and revises evaluation based on feedback from the Technical Workgroup and other information, including information provided in response to the agency's [Request for Information](#).

Evaluation Rubric

Evaluation Criteria

Evaluation criteria are defined and interpreted as follows:

- Relating to markets:
 - “Stability” and “maturity” may consider both historic and anticipated near-term future considerations, and address both presence of the market (availability to use materials) and stability of prices. Further, a market with a single or limited number of buyers would be considered “less stable”.
 - “Accessibility” is largely a measure of location and distance (and by extension, cost)
 - “Viability” is a summation of prior sub-criteria and any other relevant considerations.
- “Anticipated yield loss” may consider all stages of the recycling process (collection, processing/sorting, and end markets)
- “Compatibility with existing recycling infrastructure” – statutory criteria is split here into two sub-criteria: compatibility with *commingled* collection and processing, and compatibility with *separate* (non-commingled) material collection and processing. Note that drop-off collection can be either commingled or separated.
- “Amount of material available” considers the quantity of material *generated* as projected for the year 2025 by Cascadia Consulting Group in [prior work](#) (2019 – click on “Growth Rates” tab) prepared for the Oregon Recycling Steering Committee. It considers both the quantity of materials available as individual materials, as well as in potential combination with each other. shall we set some quantitative standards for scores (1 – 5) and draw on the Cascadia generation model?
- “Practicalities of sorting material” relates primarily to the ease of separating the material from other materials if collected in a commingled collection system.

- “Practicalities of storing material” may consider the practicality of storing the material unbaled (e.g., volume requirements relative to weight/value), the ability of the material to be baled or otherwise densified, and the practicality of storing baled material (including how quickly the bales might move and whether they are subject to potential degradation during storage, such as due to moisture)
- “Contamination” includes two considerations. The first is the potential of a material to bring contamination with it (e.g., OCC often brings tape and/or staples; food containers may bring food into the system; the acceptance of some plastics may lead generators to include other plastics; etc.). The second consideration is the nature of the contamination, its ability to be removed in a commingled processing facility, and potential impacts downstream. For example, food that is included with aluminum foil is not practical for a MRF to remove.
- “Ability for waste generators to easily identify and properly prepare the material” relates to both identification and proper preparation of materials.
- “Economic factors” will be evaluated quantitatively at the level of whole scenarios (vs. individual materials), and will consider both transactional costs (such as fuel, labor, and capital) as well as externalized costs (such as economic damages resulting from pollution).
- “Environmental health and safety” is primarily a qualitative measure that considers safety and health impacts for workers, and whether the end market(s) is (are) likely to properly manage contaminants.
- “Environmental factors from a life cycle perspective” will be evaluated primarily based on quantitative data (where available) concerning life cycle impacts such as greenhouse gas emissions, depletion of nonrenewable resources, air and water toxics, etc. Most of this evaluation will occur at the level of whole scenarios as opposed to individual materials, in parallel with the evaluation of “economic factors”.
- “Policy in ORS 459.015(2)(a) and (b)”: These criteria are not directly germane to recycling, and (a) will be considered as part of the quantitative evaluation of “environmental factors from a life cycle perspective” (described above).
- “Policy in ORS 459.015(2)(c)”: For purposes of this evaluation, this relates to the ability of the material to be recycled via end markets that result in the greatest reduction of net negative impacts on human well-being and environmental health, markets that displace the production of more impactful materials, and processes that best preserve the value and molecular structure of the material being recycled. Where value and molecular structure is preserved (e.g., mechanical recycling), materials are given a “5” if displacing high impact materials (e.g., aluminum) or a “4” if displacing lower-impact materials (e.g., corrugated cardboard). Where value and molecular structure is not preserved (e.g., pyrolysis) materials are given a “3” if displacing higher-impact materials (e.g., styrene resin, diesel fuel) or a “2” if displacing lower-impact materials.

Ratings

Most materials are evaluated against criteria using a summary score using a range of 1 – 5, as follows:

1 = Material is rated against the stated criteria as generally negative from the perspective of an effective recycling system

2 = Material is rated negatively against the stated criteria, but concerns are not as strong as a "1" and/or are counterbalanced by some positive considerations

3 = Material is rated neutrally against the stated criteria, potentially due to the presence of both positive and negative considerations

4 = Material is rated positively against the stated criteria, but positive features are not as strong as a "5" and/or are counterbalanced by some negative considerations

5 = Material is rated against the stated criteria as generally positive from the perspective of an effective recycling system

"ES" = Evaluated separately (as described above)

"SV" = Significant variability (for example, may depend on end market)

DEQ is not proposing to weight criteria or otherwise add scores together. Rather, these criteria and ratings are used for the purpose of summary communication, especially to highlight potential concerns. Further, the act of evaluating materials against criteria helps to ensure that materials are subject to a robust evaluation, and that the intent of ORS 459A.914 is met – that is, that DEQ and the Environmental Quality Commission consider the evaluation criteria defined in statute.

Criteria →	Stability and maturity of end markets	Accessibility of end markets	Viability of end markets	Anticipated yield loss during recycling	Compatibility with existing recycling infrastructure: commingled collection and processing	Compatibility with existing recycling infrastructure: separated material collection	Amount of material available	Practicalities of sorting	Practicalities of storing	Contamination	Ability for waste generators to easily identify and properly prepare material	Economic factors	Environmental health and safety considerations	Environmental factors from a life cycle perspective	Policy in ORS 459.015 (2) (a)-(b)	Policy in ORS 459.015 (2)(c)	Other	
Material:																		
Paper packaging (uncoated and coated)																		
Old corrugated containers (OCC) – uncoated, ex. pizza boxes	5	5	5	4	5	5	5	5	5	4	4	ES	5	ES	ES	4		
Pizza boxes	5	5	5	4	5	5		5	4	3	4	ES	5	ES	ES	4		
Additional materials forthcoming																		
Printing and writing paper, paper products (non-packaging)																		
High-grade office paper (uncoated)	5	5	5	4	5	5	4	5	4	5	5	ES	5	ES	ES	4		
Newspaper, newsprint	5	5	5	4	5	5	5	5	4	5	5	ES	5	ES	ES	4		
Additional materials forthcoming																		
Plastic packaging and products																		
Clear PET bottles ≥ 6 ounces	5	5	5	3	5	5	5	4	5	4	4	ES	5	ES	ES	5		
Natural HDPE bottles ≥ 6 ounces	5	5	5	3	5	5	4	4	5	4	4	ES	5	ES	ES	5		
Colored HDPE bottles ≥ 6 ounces	4	5	4	3	5	5	4	4	5	4	4	ES	3	ES	ES	5		
Additional materials forthcoming																		
Metal - packaging and other																		
Aluminum beverage cans	5	4	5	5	5	5	4	5	5	4	5	ES	4	ES	ES	5		
Steel (tin) and bi-metal cans	5	5	5	5	5	5	5	5	5	4	5	ES	4	ES	ES	4		
Scrap metal (smaller than 30 inches and less than 30 pounds)	4	4	4	4	2	4	5	2	5	3	2	ES	2	ES	ES	5		
Scrap metal (larger than 30 inches or more than 30 pounds)	4	4	4	4	1	4		2	5	3	2	2	ES	2	ES	ES	5	
Small metal pieces (e.g., lids, screws and nails). Such items to be collected inside a metal can, which has been crimped tightly closed.	4	4	4	4	2	4		2	5	3	2	2	ES	2	ES	ES	5	
Additional materials forthcoming																		
Other materials																		
Motor oil	4	4	4	SV	1	5	5	1	2	2	4	3	2	3	2	2	5	
Additional materials forthcoming																		

Alternate formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.oregon.gov.