Association of Home Appliance Manufacturers (Devin O'Herron)

On behalf of the Association of Home Appliance Manufacturers, thank you for the opportunity to offer feedback on the Preliminary Needs Assessment. Please see the attached comments.

ASSOCIATION OF HOME APPLIANCE MANUFACTURERS

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October 30, 2026

Submitted Via Public Comment Form

The Honorable Casey Sixkiller
Director, Washington State Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503
Re: AHAM Comments on the Draft Preliminary Needs Assessment Under the Recycling Reform Act

Dear Director Sixkiller:

The Association of Home Appliance Manufacturers (AHAM) respectfully submits the following comments to the Washington State Department of Ecology (Ecology) on its Draft Preliminary Needs Assessment.

AHAM understands the Recycling Reform Act's goal of building convenient, well-funded residential recycling in Washington. We appreciate that the draft limits the assessment to residences and public places (Section 3.2.2, pp. 14–15), cautions that facility capacity figures include commercial material (Section 7.2.2, p. 51), and is transparent about its data limits while documenting strong in-state corrugated markets (Section 8.3.2, p. 65). Because the revised assessment "will provide a baseline for the full needs assessment" (Section 1.3, p. 9), our comments focus on methodology. We offer the following key points:

- The residential baseline should not include self-hauled transport packaging that cannot be traced to residences.
- The final report should state that its finding of limited acceptance for expanded polystyrene and polyethylene film reflects pathways not yet studied, rather than a lack of markets.
- Service cost estimates should be defined net of commodity revenue, with the averaging method explained, and reported by covered material type before they inform any baseline, so that fees avoid cross-subsidization between materials.
- The full needs assessment should estimate commercial recovery of transport packaging so that exempt-material demonstrations have a data basis.
- Producer data for the full needs assessment should come through the PRO and allow estimation tools to determine Washington's share of national sales, along with packaging estimates for replacement parts.
- Covered material categories are set by the statewide collection lists, and comments on categories should be carried into that process.

- The final report should separate residential from commercial service costs, as RCW 70A.208.110(3)(c)(i) requires.

I. The Residential Baseline Should Not Count Self-Hauled Transport Packaging That Cannot Be Traced To Residences (Section 5.3, pp. 35–36)

The Draft Preliminary Needs Assessment states:

> "Self-haul means that someone other than a contracted or municipal service transports the materials. This includes residents, businesses, for-hire collection, landscapers, and contractors that take covered materials to a drop-off collection site, transfer station, material recovery facility, or landfill." (Section 3.2.2, p. 15)
>
> "Available data do not allow us to separate residential from nonresidential self-hauled garbage or identify waste from public places separately." (Section 5.2.2, p. 31)
>
> "Of the total 1.8 million tons in the self-hauled stream, about 0.2 million tons, are covered materials." (Section 5.3, p. 35)

AHAM supports an accurate residential baseline. Table 14 is titled "Estimated tons of residential covered materials self-hauled in 2024," but the draft defines self-haul to include "businesses, for-hire collection, landscapers, and contractors" (Section 3.2.2). It also states that the available data cannot separate residential from nonresidential self-hauled garbage (Section 5.2.2). The 0.2 million tons in Section 5.3 is derived from the 1.8 million-ton self-hauled stream, which Table 11 reports for all generators. The draft does not state how Table 14 assigns part of that all-generator stream to residences. AHAM respectfully requests that Ecology explain the method.

The two largest packaging lines in Table 14 (p. 36) illustrate the concern. Cardboard & Kraft Packaging (81,881 tons) and Wooden Pallets, Crates & Other Packaging (28,892 tons) together account for 110,773 of the table's 249,763 tons, or about 44 percent. Nearly all of these tons are shown as self-hauled garbage. By comparison, Table 13 (p. 34) shows 602 tons of wooden pallets, crates and other packaging collected from residences by service providers, so the self-hauled figure for this line is about 48 times the curbside figure. That ratio is difficult to reconcile with household generation. It is consistent with transport packaging that businesses and contractors bring to transfer stations and landfills. Wooden pallets, crates and skids are transport packaging.

These figures are vital for an accurate assessment of packaging used for the distribution of durable goods. Major appliances ship in corrugated, expanded polystyrene, film and wood skids because of their size and weight. These packaging profiles provide a unique combination of load stabilization and surface protection during distribution. This combination supports safe handling of these products throughout the logistics chain while maintaining compliance with applicable safety and environmental requirements. There is a worker safety concern if these materials are banned, either directly or through regulatory pressures that make their use impossible. We understand if there is a goal to reduce certain material usage, but materials should not be banned

if there are no feasible alternatives available. Forcing the replacement of EPS and flexible plastics with lower performing alternatives can endanger factory, warehouse, and transport workers by increasing load shift and tip-over risk for workers and carriers.

In a multi-tier distribution chain, retailers, delivery agents and installers routinely remove this packaging at delivery or installation and haul it away. Major retailers offering home delivery and/or installation of appliances in the US publicly state that the removal of packing materials from the home is included as part of the service rendered.[1] Those parties are self-haulers under the draft's own definition. Packaging that never enters the residential stream must not be counted in the residential baseline. If it is counted, the baseline is overstated, and so are the cost shares that later rest on it.

Section 1.3 states that the revised assessment "will provide a baseline for the full needs assessment," and RCW 70A.208.110(6), reproduced in Section 13.0, makes needs-assessment information the baseline for determining whether statewide requirements and performance targets have been achieved. Ecology's own Section 10.2 already recommends statewide studies of residential drop-off quantities and composition. AHAM encourages Ecology to build on that recommendation so the study separates residential self-haul from self-haul by commercial parties.

Proposed Resolution:

AHAM respectfully requests Ecology:

- Explain in Section 5.3 how Table 14 attributes self-hauled garbage to residences, given the Section 3.2.2 definition of self-haul and the Section 5.2.2 data limitation.
- Report Cardboard & Kraft Packaging and Wooden Pallets, Crates & Other Packaging self-hauled as garbage separately from the residential baseline until those quantities are confirmed as residential.
- Extend the Section 10.2 study recommendation to separate resident self-haul from self-haul by businesses, contractors, installers and delivery agents.

AHAM proposes the following language:

Section 5.2.2 (p. 31): "Available data do not allow us to separate residential from nonresidential self-hauled garbage or identify waste from public places separately. Because self-haul includes businesses, for-hire collection, and contractors, the estimates in Table 14 may include covered materials from nonresidential generators. Cardboard & Kraft Packaging and Wooden Pallets,

[1] Example policies from US Retailers:
Appliance Delivery & Installation - The Home Depot
Costco, Innovel-Laundry_Install_Requirements.pdf
Details on Scheduled Best Buy Deliveries

Crates & Other Packaging self-hauled as garbage are reported separately and are not included in the residential baseline until residential self-haul quantities can be confirmed."

Section 10.2 (p. 72): "Statewide studies could help estimate residential drop-off quantities and composition, and should distinguish covered materials self-hauled by residents from covered materials self-hauled by businesses, contractors, installers, and delivery agents."

II. Market Findings For Expanded Polystyrene And Polyethylene Film Should Distinguish Unassessed Pathways From Absent Markets (Section 8.3.1, p. 64)

The Draft Preliminary Needs Assessment states:

> "We found limited facility acceptance for plastic film, flexible packaging, and certain polystyrene (PS) formats." (Section 8.1, p. 60)
>
> "Unknown values indicate missing information, not zero capacity." (Table 27 note, Section 8.3.1, p. 64)
>
> "No material recovery facilities reported accepting flexible plastic packaging." (Section 7.3.2, p. 56)

AHAM appreciates the Table 27 note, which correctly states that "Unknown" capacity reflects missing information rather than zero capacity. Table 27 reports no in-state and two out-of-state end markets for PS/EPS, with in-state and out-of-state capacity both "Unknown," and Table 28 reports 9,916 tons of LDPE/film/flexibles and 2,043 tons of PS/EPS recovered in 2024. The caveat does not carry through to the parts of the document readers are most likely to rely on. The Section 8.1 key finding states "limited facility acceptance" for film and certain PS formats, and the Section 8.3.7 constraints discussion states that these materials "may face additional market-access challenges," both without the caveat. The end market inventory also defines plastics end markets as reclaimers (Section 8.3.1), and the draft does not separately assess drop-off, densification, or retail and commercial take-back pathways for expanded polystyrene (EPS) and film. These are the most relevant pathways to these materials. In addition, Section 8.2.1 lists PS and EPS as separate bale grades, but Tables 27 and 28 report them in a single combined "PS/EPS" row, so the market picture for EPS cannot be read on its own terms.

These distinctions matter for appliance manufacturers because EPS and PE film protect durable goods in ways that fast-moving consumer goods packaging materials do not. Major appliance OEMs use EPS and film to protect heavy, large products through stacking, multi-tier distribution and transport. In many cases, an installer or retailer removes this packaging at delivery under haul-away arrangements. Product and packaging design cycles for these goods are long. Additionally, plastic-free alternatives, such as pulp-based molded materials, are not currently considered viable substitutes for certain use cases. These materials face several performance challenges that can negatively impact workers, products, and overall costs to manufacturers and consumers. Furthermore, prohibition of these materials could lead to even greater negative

environmental impacts, such as increased transport emissions due to the increased weight of the packaging or the decreased number of packaged product units that can fit into a given cargo space. A baseline that reads as "no market" for EPS or film could carry forward into decisions that affect these packaging choices for years.

The baseline will feed directly into the full needs assessment's statutory tasks, as reproduced in Section 13.0. These include proposing plastic source reduction rates (RCW 70A.208.110(4)(c)(i)), identifying the covered materials with the most significant environmental impacts ((4)(p)), and recommending how to meet the criteria for an alternative collection program ((4)(q)). Each depends on an accurate view of where EPS and film can be recovered. The draft's own Table 13 (p. 34) estimates 23,614 tons of EPS packaging and 29,043 tons of PE film collected from residences by service providers, so the stakes are meaningful. An inventory that leaves out the pathways best suited to these materials could understate recovery options and point the program toward list exclusion, eco-modulation maluses or source reduction targets that do not reflect actual or achievable recovery.

Proposed Resolution:

AHAM encourages Ecology to revise Section 8.1 (p. 60) as follows:

"We found limited facility acceptance for plastic film, flexible packaging, and certain polystyrene (PS) formats. As noted in Table 27, unknown values indicate missing information, not zero capacity. This inventory did not evaluate drop-off, densification, or retail and commercial take-back pathways for expanded polystyrene (EPS) and film; the full needs assessment will inventory these pathways and report PS and EPS separately."

AHAM also encourages Ecology to:

- Add The Same Table 27 Caveat To The Section 8.3.7 Discussion Of Market-Access Challenges For Film And PS Formats.
- Report PS And EPS As Separate Rows In Tables 27 And 28, Consistent With The Separate Bale Grades In Section 8.2.1.
- Inventory Drop-Off, Densification, And Retail And Commercial Take-Back Pathways For EPS And Film In The Full Needs Assessment Before Drawing Any Market Finding For Purposes Of RCW 70A.208.110(4)(c)(i), (4)(p) Or (4)(q).

III. Service Cost Estimates Should Be Defined Net Of Commodity Revenue And Reported By Material Type Before They Inform Any Baseline (Sections 4.2.2 and 4.3.2, pp. 22–28)

The Draft Preliminary Needs Assessment states:

> "The estimated recycling service cost is about $432 per ton, based on service provider registrations and surveys. We have low confidence in this estimate because there are few data points and the reported costs are not consistently defined." (Section 4.1, p. 22)

"Respondents may therefore have reported gross or net costs, included or excluded revenue from recycled materials, or used different definitions of drop-off service." (Section 4.2.2, pp. 22–23)

"Table 8. Average annual total recycling cost per ton by region." (Section 4.3.2, p. 28)

AHAM appreciates that the draft states its confidence in the service cost estimate and recommends in Section 10.1 "standardized data metrics to make data directly comparable between entities." AHAM supports that recommendation. The definition of cost within those metrics matters to appliance manufacturers. Large, heavy durable goods rely on corrugated protective packaging, and corrugated cardboard carries strong commodity value. If reported costs include gross rather than net figures, the estimate would overstate what it costs to manage that material and what producers would fund.

RCW 70A.208.110(3)(i), as reproduced in Section 13.0, calls for "An estimate of the total annual collection and processing service costs based on registered service provider costs." The draft provides only a per-ton average. Defining costs net of commodity revenue, and reporting collection, transfer and transport, and sorting and processing separately, would make the estimate comparable across service providers and consistent with the program's aim of funding the actual net cost of service.

The cost basis also needs to be material-specific. Table 8 reports a single blended cost per ton across all covered materials in each region. A blended figure cannot show which materials drive collection, sorting and contamination costs. If it carries forward into reimbursement and producer fees, materials that are inexpensive to recycle or that hold strong commodity value would subsidize materials that cost more to manage. It is AHAM's position that fee structures should avoid cross-subsidization and recognize material value. The objective should be proportional responsibility aligned with actual waste management burdens rather than broad redistribution of municipal waste budgets.

Proposed Resolution:

AHAM encourages Ecology to revise Section 10.1 (p. 72) as follows:

"We recommend standardized data metrics to make data directly comparable between entities. Standardized metrics should define reported costs net of revenue from the sale of recovered covered materials and should report collection, transfer and transport, and sorting and processing costs separately. The estimate of total annual collection and processing service costs under RCW 70A.208.110(3)(i) should state its cost basis, averaging method, and confidence level, and estimates identified as low confidence should not serve as a baseline under RCW 70A.208.110(6) until validated. Costs should be reported by covered material type, and the full needs assessment should estimate net recycling and contamination costs by covered material type, consistent with RCW 70A.208.110(4)(k) and (4)(m), alongside the environmental impact identification required by (4)(p)."

IV. The Full Needs Assessment Should Estimate Commercial Recovery Of Transport Packaging So Exempt-Material Demonstrations Have A Data Basis (Section 1.3, p. 9)

The Draft Preliminary Needs Assessment states:

> "All: Looking ahead to the full needs assessment, what else should we consider? Are there questions, experiences, communities, or possible improvements that this draft preliminary needs assessment does not address or that deserve a closer look?" (Section 1.3, p. 9)

AHAM appreciates that Section 1.3 asks what the full needs assessment should consider. AHAM asks Ecology to use this authority to fill one data gap that matters for durable goods. The draft scopes material quantities to residential and public-place sources, reports nonresidential tonnage only in aggregate (Section 5.3), and does not report commercial-stream quantities or recovery rates by material. AHAM supports keeping the residential baseline focused on the residential stream. This request concerns a separate estimate, reported separately, so that it does not change or pad that baseline.

The gap affects the exempt-material pathway in RCW 70A.208.020(19)(p). AHAM understands that it ties exemption to a demonstrated recycling rate for material used and collected in commercial settings. Durable goods packaging fits this pathway in ways that fast-moving consumer goods packaging does not.

For major appliance manufacturers, the (19)(p) pathway appears to be the only statutory relief for installer-removed and distribution-center packaging. A producer cannot make a (19)(p) demonstration without a recognized state estimate of commercial recovery by material type. Without that estimate, packaging that never enters the residential stream may be counted as covered material, and producers would fund residential collection for material that the residential system does not handle. Separate commercial-stream estimates would also support the program's own goals by giving Ecology and the PRO a consistent, transparent basis for exemption determinations and keeping residential performance measurement accurate.

Proposed Resolution:

Add the following to Section 10.2 (Covered materials collected, p. 72):

"For the full needs assessment, Ecology will consider estimating the quantity and recycling rate of covered materials used and collected within commercial settings, including transport and protective packaging such as corrugated cardboard, wood pallets and skids, stretch and protective film, and expanded polystyrene, to inform exempt material determinations under RCW 70A.208.020(19)(p). These estimates will be reported separately from the residential baseline."

AHAM also encourages Ecology to list commercial-stream estimates for transport and protective packaging among the "type and scope of information" topics for consultation as it prepares the full needs assessment.

V. Producer Data For The Full Needs Assessment Should Come Through The PRO, Allow Estimation Tools (Section 10.2, p. 72)

The Draft Preliminary Needs Assessment states:

> "We also need producer-reported data on covered materials introduced into Washington. As producers report data to the PRO for Washington-specific covered materials sold into the state, we recommend alignment with covered material names for the full needs assessment." (Section 10.2, p. 72)

AHAM supports the Section 10.2 recommendation that producer data for the full needs assessment come through the PRO and align with covered material names. A single reporting channel avoids duplicate requests and keeps producer data consistent with the PRO's own records. The draft does not say how producers may develop Washington-specific figures for covered materials. Without that guidance, the full needs assessment could request state-specific sales data that producers selling through multi-tier distribution channels cannot generate, or itemized packaging data for replacement parts that does not exist.

Durable goods differ from fast-moving consumer goods in ways that affect what producers can report. Appliances sell through multi-tier distribution, often to national retailers and distributors, so they generally do not know how many units reach Washington households. Long model and design cycles also mean that packaging specifications change slowly, and data systems are not built to track packaging weight by state. Replacement parts present a separate challenge. Service parts often ship in bundled orders to repairers or consumers. Each shipment can be unique, so these shipments are not associated with a bill of materials.

Accepted estimation methods would address the data gap the draft identifies in Sections 5.1 and 5.2.1. - Other states allow two such tools, and the full needs assessment should accept both. Sales estimation tools allocate national sales by Washington population to determine the quantity of products entering the state. AHAM supports their permanent use for all home appliances, because producers in a multi-tiered distribution model cannot calculate state-by-state sales. Average bill of materials (ABOM) estimation tools estimate the amount and type of packaging for a product type when specific packaging data cannot be collected. AHAM supports ABOM tools for portable and floor care appliances, especially in the near term. Packaging estimation tools for spare parts are likely a necessary permanent component, because bundled service shipments vary and are not associated with bills of materials.

Proposed Resolution:

Revise Section 10.2 (p. 72) as follows:

"As producers report data to the PRO for Washington-specific covered materials sold into the state, we recommend alignment with covered material names for the full needs assessment, use of data reported by producers to the PRO in aggregated form, and acceptance of producer estimates using sales estimation tools that allocate national sales by Washington population to determine the quantity of products entering the state, average bill of materials packaging estimates for portable and floor care appliances, and packaging estimation tools for spare parts. Nonpublic producer data will be aggregated and anonymized consistent with RCW 70A.208.110(7)(c)."

VI. Covered Material Categories Are Set By The Statewide Collection Lists And Should Be Addressed There (Section 3.2.1, pp. 13–14)

The Draft Preliminary Needs Assessment states:

> "We used the same material types, classes, and names as the statewide collection lists." (Section 3.2.1, p. 13)

AHAM recognizes that the draft does not create its own covered material categories. Section 3.2.1 adopts the material types, classes and names of the statewide collection lists, as RCW 70A.208.110(2)(d)(ii) directs ("Use the department's statewide collection lists for covered materials as established under RCW 70A.208.090," reproduced in Section 13.0). AHAM's comments on category structure are therefore directed to the statewide collection lists process and to the PRO's reporting categories, not to the needs assessment itself. AHAM raises them here so Ecology can carry them into those venues.

National producers report packaging under several state programs, and Oregon, Colorado and California each use different category lists. Appliance manufacturers must keep parallel taxonomies for the same packaging, and carry high SKU counts, which multiplies the work of mapping each component to each state's categories.

Clear categories also support the program's own data goals. Section 10.2 already recommends that producer data align with covered material names. That alignment works only if each covered material maps to one material type and class, and if producers can reconcile Washington categories with those they already report elsewhere.

Proposed Resolution:

AHAM encourages Ecology to add the following to Section 3.2.1 of the final needs assessment:

"Because the material types, classes, and names used in this assessment are established in the statewide collection lists under RCW 70A.208.090, comments on category definitions, the classification of specific covered materials, and alignment with other jurisdictions' programs will be forwarded to the statewide collection lists process."

For the statewide collection lists process and PRO reporting guidance, AHAM encourages Ecology and the PRO to:

- Give each covered material a self-contained definition that a producer can apply without consulting other documents.
- Publish, in PRO reporting guidance, a crosswalk from the statewide collection lists' material types and classes to the categories used in Oregon, Colorado and California, consistent with the Section 10.2 recommendation that producer data align with covered material names.

VII. The Final Report Should Separate Residential From Commercial Service Costs As The Statute Requires (Section 4.3.2, p. 27)

The Draft Preliminary Needs Assessment states:

> "The availability and types of recycling services for covered materials for residents in single-family and multifamily residences, including whether current services are considered residential or commercial and whether any gaps, costs, or needs are specific to either commercial or residential customer service;" (as reproduced in Section 13.0, pp. 81–82)
>
> "Multifamily recycling data were especially difficult to separate because haulers may group non-cart-based multifamily recycling with commercial recycling, and records may define multifamily properties differently." (Section 4.2.2, p. 23)
>
> "Customer rates do not necessarily equal the cost of each service. For example, larger garbage subscriptions may help pay for smaller subscriptions, and commercial charges may help pay for residential services." (Section 4.3.2, p. 27)

RCW 70A.208.110(3)(c)(i) requires the preliminary needs assessment to identify whether current services are residential or commercial, and whether any gaps, costs, or needs are specific to either type of customer service. The draft identifies the problem but does not resolve it. Section 4.2.2 notes that haulers may group multifamily recycling with commercial recycling. Section 6.1 notes that multifamily buildings may be served on commercial routes. Section 4.3.2 notes that commercial charges may help pay for residential services. The draft does not say how much of the Table 8 cost data, or how much of the reported tonnage, includes commercial customer service.

This matters to appliance manufacturers because of how durable goods reach the market. Major appliance OEMs and portable and floorcare manufacturers ship products through multi-tier distribution. Much of the protective packaging is removed at distribution centers, at retail, or during installer haul-away, and it is recovered through commercial service. If the residential baseline includes commercial costs and tons, later reimbursement under RCW 70A.208.170 could fund commercial collection of packaging that never entered the residential stream.

Producers would then pay for the same material twice: once through existing commercial arrangements and again through the program.

Residential rates should not subsidize commercial service, and commercial service should not be counted as a residential program cost. A clear residential and commercial split in the final report, and in the data Ecology collects afterward, would support an accurate needs baseline and a defensible reimbursement methodology. Because this is a statutory element of this report, the request is narrow and fits this document.

Proposed Resolution:

In Section 4.2.2 (p. 23), after "and records may define multifamily properties differently," insert:

"Consistent with RCW 70A.208.110(3)(c)(i), the final preliminary needs assessment identifies where reported costs and tons may include commercial customer service, and future service provider registration will request residential and commercial costs and tons separately."

AHAM appreciates the opportunity to submit these comments on the Draft Preliminary Needs Assessment and would be glad to discuss these matters in more detail should you request.

Respectfully Submitted,



Devin O'Herron
Director, Product Stewardship

About AHAM: AHAM represents more than 150 member companies that manufacture 90% of the major, portable and floorcare appliances shipped for sale in the U.S. Home appliances are the heart of the home, and AHAM members provide safe, innovative, sustainable and efficient products that enhance consumers' lives. The home appliance industry is a significant segment of the economy, measured by the contributions of home appliance manufacturers, wholesalers, and retailers to the U.S. economy. In all, the industry drives nearly $200 billion in economic output throughout the U.S. and manufactures products with a factory shipment value of more than $50 billion.