

K-CUP RECYCLABILITY CLAIMS

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Table of Contents

Section	Page
Cover Letter	i
Executive Summary	1
1.0 Background	1
2.0 Waste Characterization Studies and Program Access	2
2.1 California	3
2.2 Florida	3
2.3 Georgia	4
2.4 Illinois	4
2.5 Michigan	4
2.6 New York	4
2.7 North Carolina	4
2.8 Ohio	5
2.9 Pennsylvania	5
2.10 Texas	5
3.0 Recycling Facility Survey	5
4.0 Industry Experts Survey	8
5.0 Alternative Recycling Methods	8
6.0 Limitations of Recycling Facilities	9
7.0 Survey Deviations and Limitations	9
8.0 Conclusions	10
9.0 References	11

Tables

Table 1.	Summary of Statewide and City Plastic #5 Program Acceptance and Waste Characterization Studies	2
Table 2.	Recycling Facility Survey Response Summary	6
Table 3.	Summary of Key Barriers to K-Cup Recycling	6

Appendices

Appendix A	Expert Qualifications
Appendix B	Survey Questionnaire
Appendix C	Survey Results

EXECUTIVE SUMMARY

Truth in Advertising (TINA.org) contracted with SCS Engineers (SCS) to conduct an analysis regarding the recyclability of Keurig K-Cup® single-serve coffee pods (K-Cups). The information gathered in this study will be used by TINA.org to analyze whether the marketing for these products deceives US consumers.

SCS conducted comprehensive surveys with recycling industry representatives in major US cities to assess whether K-Cups are recycled through residential curbside or drop-off recycling programs. The methodology included a review of published reports, expert consultations, and analysis of state waste characterization data.

This report provides a summary of research on the recyclability of K-Cups in the 10 largest states, by population, in the United States. The findings of this report are derived from manufacturer documentation, state-level Waste Characterization Studies (WCSs), and independent survey responses from recycling and transfer facilities. According to data from WCSs conducted in the focus states, K-Cups are infrequently tracked as a separate material type and are typically categorized under broader groupings such as “Other Plastic Packaging.” Although many municipalities accept Plastic #5 (polypropylene) for recycling, K-Cups commonly pass through sorting equipment in recycling facilities and are often considered contaminated with coffee grounds or other parts of the coffee pod, resulting in disposal.

Survey results indicate that although most recycling and transfer facilities accept Plastic #5 materials, only a limited number specifically accept or process K-Cups. Typically, these facilities require consumers to disassemble the pods before recycling. Commonly cited barriers to recycling K-Cups include difficulties related to size-based screening and contamination. Alternative recovery solutions, such as third-party take-back initiatives and the Keurig Dr Pepper (KDP) K-Cycle recycling program, provide options for pod recycling outside of curbside collections; however, these alternatives may be constrained by the additional costs posed by the recycling services.

1.0 BACKGROUND

K-Cups, a widely used form of single-use coffee pods sold and distributed by KDP, have gained popularity due to their convenience, variety of flavors, and multiple brew sizes and options. Additionally, the existing market for K-Cup has grown and is expected to continue to grow despite a significant drop in away-from-home business caused by the pandemic. In 2021, one industry source projected U.S. consumption would surpass 30 billion K-Cups, whereas another analysis put 2021 usage around 18 billion pods. In 2023, the company saw a nearly 4 percent drop in sales as consumers returned to the office but expect their market to grow to \$1.6 billion by 2032.

The disposable K-Cups are approximately 2 inches by 2 inches. Each pod consists of a small plastic cup, typically made from Plastic #5 (polypropylene). Inside the cup, a paper filter holds the beverage grounds, allowing hot water to pass through during brewing while keeping the grounds contained. The top of the pod is sealed with an aluminum foil lid.

2.0 WASTE CHARACTERIZATION STUDIES AND PROGRAM ACCESS

Many states conduct Waste Characterization Studies to identify the types and quantities of waste disposed of in landfills. These studies involve sorting, weighing, and analyzing waste samples to assess material composition and contamination levels. K-Cups are often labeled as non-recyclable, though they are made of Plastic #5 which is commonly identified in waste characterization studies. However, their small size makes recycling and accurate classification challenging. Though the WCSs below do not specifically examine, sort, or characterize K-Cups, they do offer insights into waste streams in the various communities and the findings of Plastic #5 in waste.

Across the 10 states studied, curbside acceptance of Plastic #5 varies across individual community programs. No state mandates universal collection of Plastic #5 items. Many city guidance documents still direct single-serve coffee pods to trash because their small size and coffee-ground residue hinder sorting in recycling facilities. Even where programs accept “rigid plastics #1-7,” K-Cups are often explicitly labeled as an exception. The national residential recycling rate for Plastic #5 is approximately 8%, meaning approximately nine out of ten Plastic #5 packages are not recycled and instead are lost to disposal. A summary of statewide and individual city WCSs are included in **Table 1**, below. K-Cups, which are not typically tracked in WCSs, are included with Plastic #5:

Table 1. Summary of Plastic #5 Program Acceptance and Waste Characterization Study Results

State	Plastic #5 Acceptance Policy	Waste Characterization Metric for Plastic
California	Plastics #5 have been officially designated as materials that must be recycled in communities representing at least 65% of the state's population by 2032. Many cities do not accept K-Cups as Plastic #5 and direct consumers to place waste in garbage.	Statewide study: polypropylene (#5) containers ≈0.6% of disposed municipal solid waste (MSW) by weight; K-Cups not separately identified.
Florida	Acceptance of Plastic #5 varies by county; no recent statewide characterization.	County studies: #3–#7 plastics are 0.2% of disposed MSW by weight; K-Cups not separately identified.
Georgia	Metro Atlanta programs include Plastic #5. Limited information on state-wide policy.	2005 statewide study: plastics, in aggregate, ≈15.8% of disposed MSW by weight; no #5 or K-Cup breakout.
Illinois	In Chicago, there is no municipal policy on Plastic #5; non-governmental sources direct K-Cup pods to MSW.	Statewide study: combined #3, #4, #5, #7 plastics ≈4.1% of disposed MSW by weight; no K-Cup breakout.
Michigan	#3 –#7 plastics recyclable only in select communities; no mention of K-Cup pods.	Statewide study: #3–#7 plastics ≈4.1% of disposed MSW by weight; #5 and K-Cups not reported separately.

State	Plastic #5 Acceptance Policy	Waste Characterization Metric for Plastic
New York	In New York City (NYC), all rigid plastic containers are accepted if emptied and rinsed; no municipal guidance on K-Cup pods. Limited information on state-wide policy.	NYC study identified K-Cups for sorting; plastic pods counted within "Other Plastic"; no separate percentage for #5 alone.
North Carolina	City of Raleigh excludes K-Cup pods from recycling. Limited information on state-wide policy.	County study tracked "dairy" plastics including #5 tubs/lids within broader container categories; K-Cups not separately identified.
Ohio	Central Ohio program accepts bottles, clamshells, tubs, jugs and cups; all other plastics—including K-Cup pods—must be excluded. Limited information on state-wide policy.	Regional studies group #3–#7 plastics; no standalone #5 or K-Cup percentage; included within broader plastic categories in disposed waste.
Pennsylvania	Cities of Philadelphia and Pittsburgh accept #5; Pittsburgh explicitly excludes K-Cup pods. Limited information on state-wide policy.	Plastics comprise 18.9% of statewide disposal.
Texas	Cities of Houston and Dallas accept Plastic #5; City of Houston specifically excludes K-Cup pods from recyclables. Limited information on state-wide policy.	Austin study: combined #3 and #5 plastics ≈1.6% of disposed MSW by weight; K-Cups not separately identified.

2.1 CALIFORNIA

Under California's implementation of the Plastic Pollution Prevention and Packaging Producer Responsibility Act (SB 54), Plastic #5 has been officially designated as a material that must be recycled in communities representing at least 65 percent of the state's population by 2032.

However, CalRecycle reports that fewer than 15 percent of California's material recovery facilities currently sort Plastic #5 rigid plastics into separate recycling streams, resulting in less than 3 percent of Plastic #5 waste generated statewide being successfully collected and sorted for recycling. Consequently, despite the technical inclusion of Plastic #5 in the regulated recyclable stream, local acceptance of K-Cup pods remains inconsistent. As a result, individual cities and waste haulers frequently treat K-Cup pods as conventional refuse, directing consumers to dispose of them in the MSW stream rather than recycling programs.

2.2 FLORIDA

While Florida has conducted WCSs, such as those in Alachua and Pinellas counties, these reports were not conducted in the previous 10 years, and do not specifically address K-Cups or Plastic #5. Plastics are grouped into broader categories. Orange County conducted a WCS, which found that plastics #3 - #7 comprised 0.2 percent of waste collected.

County-level acceptance of Plastic #5 varies; there is no recent statewide waste characterization data to confirm K-Cup policies.

2.3 GEORGIA

The state's 2005 Statewide WCS provides data on various waste components. However, it does not specifically mention K-Cups or Plastic #5, grouping plastics into broader categories that encompass multiple material types. Plastic recycling in this study found that on aggregate plastics made up 15.8 percent of the disposed waste stream.

In Atlanta and its surrounding suburbs, curbside recycling includes Plastic #5. Metro Atlanta accepts Plastic #5, but statewide policy information is limited and unclear regarding K-Cups.

2.4 ILLINOIS

Illinois has conducted WCSs, but these studies do not specifically address K-Cups or Plastic #5, grouping plastics into broader categories that include various material types. In the 2010 Chicago Department of Environment WCS, plastic made up 12.4 percent of the waste stream.

Some non-governmental sources indicate that K-Cups should not be recycled in the City of Chicago; no specific reasons were provided.

2.5 MICHIGAN

Michigan's Department of Environment, Great Lakes, and Energy (EGLE) – then known as the Michigan Department of Environmental Quality – published a WCS in 2016 which indicated that plastics comprised 10 percent of the waste composition. However, specific data on K-Cups or Plastic #5 is not readily available, as plastics are often grouped into broader categories in this report.

EGLE's website indicates "Plastic products with Nos. 1 or 2 (e.g., plastic water bottles, milk jugs) are widely accepted in recycling programs. However, you may find products numbered 3-7. These types of plastic are recyclable – but only in select communities in Michigan." This website does not specifically mention K-Cups.

2.6 NEW YORK

New York State does not have comprehensive statewide WCS results. However, WCSs have been conducted in New York City and other communities. New York City's 2017 waste characterization identified K-Cup pods as a distinct item for sorting, with predominantly plastic pods counted within the "Other Plastic" category. That category exhibited an estimated recycling capture rate of approximately 20.7 percent; the study did not publish a separate percentage for #5 plastics alone.

New York City's official website does not provide guidance on K-Cups specifically nor on plastic recycling by number. New York City does indicate that all rigid plastic containers are accepted regardless of number, if they are empty and rinsed.

2.7 NORTH CAROLINA

North Carolina lacks a recent, accessible WCS. Plastics are typically categorized broadly, limiting detailed analysis of these specific items.

Responses from North Carolina Department of Environment and Natural Resources' Division of Pollution Prevention and Environmental Assistance and the Association of Postconsumer Plastic Recyclers do not explicitly state that Plastic #5 is accepted. Cities such as Raleigh do not accept K-Cups in the recycling stream.

2.8 OHIO

Ohio lacks a recent comprehensive WCS. The available reports tend to categorize plastics broadly, limiting detailed analysis of these specific items.

The Solid Waste Authority of Central Ohio states that "Recycling programs accept plastic bottles, plastic clear clamshell containers, tubs, jugs and cups. All other plastics – such as plastic grocery bags – should be kept out of the recycling cart," yet does not break down recycling rules by plastic number or K-Cups specifically. Additionally, some recycling entities in the state advise customers not to recycle K-Cups as they are too small.

2.9 PENNSYLVANIA

Pennsylvania's WCS indicates that plastic makes up 18.9 percent of the statewide aggregate waste disposal, though it does not break down Plastic #5 or K-Cups to its own categories. The two largest metropolitan areas of Pennsylvania – Philadelphia and Pittsburgh – both accept Plastic #5, though Pittsburgh explicitly instructs consumers not to recycle K-Cups.

2.10 TEXAS

Texas has not currently conducted a comprehensive statewide WCS. However, some individual municipalities have completed WCSs, though the availability of detailed findings at the city level remains limited. Dallas, for example, has performed a WCS but does not specifically mention K-Cups in its analysis. Instead, Plastic #5 is grouped within a broader category labeled "#3–#7 containers." The Dallas curbside recycling program accepts plastics numbered 1 through 7.

San Antonio's waste management plan remarks that, "Today, coffee is usually sold in a lightweight foil or paper pouch which is not recyclable." There is no specific reference to K-Cups in the city's plan.

Houston does not have a city-level WCS. The municipal recycling program accepts plastics #1–5 and #7, specifically including bottles, tubs, and jugs. However, coffee pods are not listed among accepted items, and the guidance to residents is, "when in doubt, throw it out."

Austin's 2020 WCS reports that Plastic #3 (Polyvinyl Chloride) and Plastic #5 together constitute about 1.5% of disposed material by weight. The report does not single out K-Cups as a separate category.

3.0 RECYCLING FACILITY SURVEY

From March to June of 2025, SCS conducted a national survey of recycling professionals to assess the availability of K-Cup recycling across the United States. Outreach efforts focused on contacting multiple collectors and processors within the 10 most populous states. The survey aimed for broad coverage, through interviews, and attained 17 responses to survey questions described in the table below and as discussed in detail in Section 7.0 of this report. Interview targets included the six largest national haulers and recyclers operating within the selected municipalities, representing

approximately 89 percent of the total U.S. waste and recycling market. See **Table 2** below for a summary of responses. The survey questionnaire is included in **Appendix B**, and detailed survey results are included in **Appendix C**.

Table 2. Recycling Facility Survey Response Summary

	Yes	No	No Comment
Accepts Plastic #5	11	3	3
Accepts Small #5 (<4")	7	4	6
Accepts K-Cups	4	9	4
Actively Solicits #5 K-Cups	3	6	10
Required Separation	7	-	10
Recent Policy Changes in K-Cup Acceptance	0	13	4
Anticipated Changes in K-Cup Acceptance	1	11	5

Survey results revealed several operational and market barriers to K-Cup recycling, outlined in **Table 3** below.

Table 3. Summary of Key Barriers to K-Cup Recycling

Barrier Type	Description
Material Composition	Mixed materials (plastic, aluminum, organic waste) reduce processability.
Contamination	Residual coffee grounds increase rejection rates in Material Recovery (Recycling) Facilities (MRFs).
Size and Weight	Small dimensions cause sorting failure during mechanical screening.
Infrastructure Limits	Most MRFs are not designed to capture or process small-format plastics.
Economic Viability	Low resale value and high processing costs deter facility investment.
Consumer Participation	Disassembly is rarely performed by consumers, limiting program success.

Multiple respondents flagged two core barriers: size and contamination. Pods are too small to be captured and fall through the sorting equipment, and their multi-material design (foil lid, plastic cup, and coffee grounds) makes them hard to sort and clean. Several operators said they don't target or track pods, rely on third-party MRFs, and lack visibility into downstream handling. Even where Plastic #5 is accepted, end markets are weak, often unprofitable, and adding pods would further devalue already dirty bales (e.g., residue from dairy containers). Upgrades like robotic sorting were viewed as poor ROI for such low-volume items; capturing pods would likely require separate collection or labor-intensive picking—both seen as cost-prohibitive without consumer disassembly and better education. Comments indicated that pods are rarely captured and typically lost to residue rather than recycled.

Responses were received from 15 MRFs and two transfer stations across the U.S., including facilities in California (Anaheim), Michigan (Southfield and Grand Rapids), Florida (Sarasota and Miami), and others serving metropolitan regions such as Los Angeles, Detroit, and Miami-Dade. The survey asked a series of questions related to K-Cup recycling and resulted in seventeen complete responses. The survey included both single-stream MRFs and mixed-waste processing MRFs, offering insight into diverse infrastructure and regional market conditions. Although several cities now list 'rigid #1-#7 plastics' in curb-side guidelines, our facility survey shows that K-Cups rarely survive processing: 4 out of the 17 surveyed stating that they would accept K-Cups under the condition that they are cleaned and separated into component parts. K-Cups' small size and contamination potential, limited market value, and MRF equipment barriers continue to hinder recovery, especially in regions with limited infrastructure investment.

One operator noted they previously had to pay a broker to haul away mixed plastics due to insufficient market value, suggesting that the cost of recovery often outweighs the return. Another respondent stated that even with more robotic sorting infrastructure, the low volume of #3-#7 plastics (including K-Cups) would not justify the capital expenditure due to poor return on investment.

The multi-material design of K-Cups, consisting of a Plastic #5 shell, paper filter, coffee grounds, and aluminum lid, also poses a contamination problem for recycling systems. Some facilities that do accept K-Cups require the pod to be disassembled by consumers before it can be recycled. Respondents agreed that consumer preparation is unlikely to occur at scale in residential recycling, and some emphasized that failure to disassemble the pods properly leads to rejected loads and higher contamination rates.

A recurring issue cited across regions was that K-Cups are too small to be effectively captured by existing mechanical sorting systems. Their size causes them to fall through the sorting screens and glass breakers that are designed to separate larger containers. This issue was noted by operators in both California and Michigan, where facilities acknowledged that even advanced facilities with automated equipment failed to recover K-Cups consistently. As one California operator put it, "the main issue is the foil and grounds as well as the size." Another operator indicated "They [K-Cups] fall through the glass breakers rather than going over top like larger items to continue sorting."

A facility in Miami noted that while they accept recyclables broadly, K-Cups are not actively solicited for collection; and in Ohio, one facility reported that even though Plastic #5s are accepted generally, K-Cups are discouraged because they often fall through equipment screens or contribute to contamination.

When asked about future expectations, the majority (65 percent) of facilities indicated that no significant changes were anticipated in the next 2-3 years regarding the recycling of K-Cups. One California-based facility said that policy changes might occur in the long term if downstream markets or producer responsibility models shift, but that the current infrastructure does not support widespread recovery.

Overall, the majority (59 percent) of surveyed facilities indicated that they accept Plastic #5 in their standard recycling stream. However, only 20 percent of respondents said that they explicitly accept K-Cups, one with the caveat that they are only accepted if emptied. Several facilities explicitly stated that, despite accepting Plastic #5s like tubs and rigid containers, they advise residents not to recycle K-Cups due to their small size and mixed material construction.

In summary, while Plastic #5 is recyclable and commonly accepted in curbside collection programs, actual recovery of small-format items like K-Cups remains limited. This is due to a convergence of issues: mechanical screening limitations, product contamination, and market constraints. Similar surveys conducted by Greenpeace in 2022 found that 1 out of 375 MRFs explicitly accepted Plastic #5 coffee pods.

4.0 INDUSTRY EXPERTS SURVEY

In addition to the facility surveys, SCS interviewed two industry experts regarding the recyclability of K-Cups. We interviewed a Vice President of a major North American waste management company, operating 367 collection operations, 248 transfer stations and 75 recycling centers across 41 states in the U.S. and Canada. SCS also spoke to a Solid Waste and Recycling Manager for a large city. They were asked to give SCS their insight regarding recycling operations for coffee pods. They focused on the challenges posed by the materials and processes involved. The consensus of the discussion is that the multi-material composition, small size, and contamination of coffee pods result in their frequent rejection and disposal in landfills:

- **Material acceptance criteria:** Accepts Plastic #5, foils, and organic materials in many facilities but requires materials to be clean, dry, empty, and larger than 2 inches; coffee pods rarely meet these standards due to contamination and size issues.
- **Processing challenges:** Coffee pods are not designed for recycling processes, often breaking during sorting, which releases contaminants and leads to landfill disposal; current sorting technologies and policies are not tailored for coffee pods.
- **Market outlook:** While Plastic #5 markets are developing positively, coffee pods are viewed as contaminants with limited potential for inclusion in future recycling streams due to sorting and contamination difficulties.

5.0 ALTERNATIVE RECYCLING METHODS

Although local recycling companies often depend on the profitability of recycled materials, several companies have developed partnerships with brands and retailers to fund the recycling process. Some of these business models are based on funding from the producer, and the service includes a bag, box, or pallet that is shipped to and from the consumer to allow for transportation of the K-Cups to the recycling facility and includes the cost of recycling the K-Cups. The best-known is TerraCycle's Zero Waste Box program. Customers purchase a pre-paid collection box (capacity of approximately 450 pods) or a bulk pallet bag (capacity of approximately 22,000 pods), fill it with any brand of coffee capsules—grounds and foil included—and ship it back via UPS. TerraCycle then separates the polypropylene, aluminum, and organics; plastics are processed into pellets for reuse, metals are recovered, and coffee grounds are composted. Pricing is roughly \$133 USD per small box (cost of approximately 29¢ per pod) and \$1,628 USD per pallet (cost of approximately 7¢ per pod). Service is limited to the contiguous U.S.

Two additional options rely on producer or brand funding. The g² revolution Coffee-Pod Mail-Back kit, marketed directly to offices and hospitality venues, provides return cartons or bins that are processed at g²'s Midwest facility; costs are quoted case-by-case but fall in a similar 6–12¢ per-pod range, with no consumer disassembly required. KDP partners with g² on its K-Cycle® workplace program—collection bins are sold through Keurig distributors and shipped to an Emterra recycling site when full—and in 2024 it launched an at-home mail-back bag for households lacking local acceptance. The program claims that in 2019, users recycled 1,250,000 pounds of K-Cups.

Some coffee producers such as Don Francisco's® Coffee bags and pods, Café La Llave® Espresso coffee pods, and José's® Gourmet Coffee fully subsidize TerraCycle "brigade" boxes, letting consumers ship qualifying pods free of charge while TerraCycle credits loyalty points to designated charities. Although these alternatives overcome the size-and-contamination barriers that limit curbside recovery, their adoption is constrained by per-pod fees, geographic exclusions (Alaska, Hawaii, Puerto Rico), and, in the case of brand-sponsored brigades, limited enrollment slots.

However, The Last Beach Cleanup filed a March 4, 2021 lawsuit against TerraCycle Inc. and 10 major brands, alleging they label hard-to-recycle packaging "recyclable with TerraCycle" while imposing strict sign-up caps that shut most consumers out of the free mail-back program. According to the complaint, those consumers are then pushed toward TerraCycle's pricey Zero Waste Box service or end up discarding the items, rendering the "recyclable" claim misleading. Plaintiffs also say the companies have not produced records proving the collected material is recycled, in violation of California's consumer-protection laws. TerraCycle CEO Tom Szaky rejects the allegations (Goldsberry, 2021).

6.0 LIMITATIONS OF RECYCLING FACILITIES

Numerous limitations of existing recycling infrastructure inhibit the effective recovery of K-Cups. While Plastic #5 is accepted by many municipal recycling programs, the actual processing of small-format items such as K-Cups is typically infeasible. Several constraints have been identified through the facility operator feedback:

- **Size Limitations:** Mechanical sorting equipment in many MRFs, including disc screens and glass breakers, is designed for larger items. K-Cups frequently fall through these screens and are mistakenly routed for traditional disposal with small waste material, making effective capture highly unlikely.
- **Material Contamination:** The presence of coffee grounds and residual liquid introduces contamination to the plastic and aluminum components. Many facilities lack the capacity to clean or separate such materials effectively and therefore reject pods altogether.
- **Sorting System Design:** Even advanced facilities equipped with robotic sorting arms or optical sorters report low recovery rates of K-Cups. The pods' low weight, irregular shape, and material blend interfere with automated identification systems, especially when pods are not emptied or disassembled by consumers.
- **Economic Constraints:** Several facilities have indicated that the market value of recovered K-Cup materials is insufficient to justify the cost of labor or equipment upgrades required to process them. Some operators have had to pay brokers to remove low-value mixed plastics, highlighting the negative economic return associated with K-Cup recovery.

In summary, despite being made from a recyclable polymer, the practical recyclability of K-Cups is severely constrained by infrastructure limitations, contamination potential, and market economics.

7.0 SURVEY DEVIATIONS AND LIMITATIONS

Obtaining clear and consistent information from recycling facilities proved challenging. Many respondents supplied only partial or ambiguous data on K-Cup handling, reflecting the broader difficulty of tracking small-format, composite plastics within mixed recycling streams. Familiarity with

facility-level sorting capabilities varied markedly; several operators reported that they do not track K-Cups at all, limiting the availability of precise, actionable data. Consequently, the survey methodology was adjusted to broaden certain questions and to rely more heavily on qualitative feedback to fill quantitative gaps.

The survey was met by a low response rate: only 20 percent of the facilities contacted completed the questionnaire. This limited participation was offset by data gathered from recycling industry experts representing multiple states.

8.0 CONCLUSIONS

The findings from WCSs, facility surveys, and expert consultations indicate that although Plastic #5 is accepted in municipal recycling programs, K-Cups encounter several recycling challenges. These include size constraints, contamination from residual coffee grounds, multi-material composition, and limited market value impacting economic viability. Alternative recycling solutions, including third-party recycling programs and Keurig's K-Cycle initiative, offer additional recycling options; however, they are subject to limitations such as consumer costs, accessibility issues, and existing infrastructure constraints. As a result, many K-Cups continue to be disposed of via landfills or incineration. On aggregate, K-Cups are not typically accepted for recycling in the United States. Programs serving a substantial majority of consumers ($\geq 60\%$) do not accept K-Cups as placed; further, K-Cups generally fail the recyclability test on all three prongs—access, storability, and end markets. Accordingly, 'recyclable' claims overstate real-world outcomes.

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Trellis Group Inc.



Appendix A

Expert Qualifications

EXPERT QUALIFICATIONS

Michelle P. Leonard, Senior Vice President, SCS Engineers

Michelle Leonard is a nationally recognized expert in solid waste planning and recycling with more than 35 years of experience in environmental consulting and project management. She leads Sustainable Materials Management (SMM) initiatives for public agencies and private clients, including zero-waste planning, infrastructure assessments, and market analyses. Ms. Leonard has served as an expert in litigation and regulatory matters—most notably providing expert analysis in the Keurig Green Mountain class action in the U.S. District Court, Northern District of California, where she evaluated the extent to which single-serve coffee pods labeled as “recyclable” are actually recyclable in practice, including conducting an extensive survey of California MRFs regarding acceptance and sortation capabilities. She has also supported Truth in Advertising (TINA.org) by researching the real-world recyclability of K-Cups nationwide, drawing on published reports, facility outreach, and data analysis. Ms. Leonard is SCS Engineers’ National Expert in Solid Waste Planning & Recycling, a past president within SWANA leadership, and has been recognized in industry trade coverage for her leadership in recycling and zero-waste program design.

Sonya S. Betker, Project Director Sustainability/Circular Economy, SCS Engineers

Sonya S. Betker is a nationally recognized sustainability professional with more than two decades of experience advancing zero waste, circular economy, and sustainable materials management (SMM) initiatives for public agencies, private industry, and nonprofit organizations. At SCS Engineers, she leads and co-leads projects spanning construction and demolition waste diversion, cruise line zero-waste pilots, kitchen remodeling reuse initiatives, and biochar/carbon market development. Ms. Betker specializes in aligning client operations with the TRUE Zero Waste framework, integrating regulatory compliance, cost analysis, and resource recovery into actionable strategies. She also serves as Vice President of the National Stewardship Alliance Foundation and as a Board Member of Reuse Minnesota and SWANA Minnesota Chapter, reflecting her leadership in advancing practical reuse and materials recovery solutions nationwide.



Appendix B

Survey Questionnaire

SURVEY QUESTIONNAIRE

Survey: Assessing the Recyclability of K-Cups

1. Facility/ Operator: Contact Information

- A. Facility / Company Name:
- B. Location (Address, City, State):
- C. Primary Geographic Area Served (e.g., counties, cities, regions):
- D. Contact Person Name & Title:
- E. Contact Email / Phone:

2. Facility Operations

Do you operate as a:

- ☐ Single stream recyclables MRF
- ☐ Mixed Processing MRF-Recycling Hauler
- ☐ Other (please specify)

3. Materials Accepted: Focus on #5 Plastics and K-Cups

A. Does your facility accept #5 plastic (polypropylene) items for recycling?

- ☐ Yes
- ☐ No

B. Does your facility accept small format #5 plastic items (e.g., smaller than 4 inches in two dimensions)?

- ☐ Yes
- ☐ No

C. Does your facility accept single-serve coffee pods (e.g., K-Cups) for recycling?

- ☐ Yes
- ☐ No

D. If yes to single-serve coffee pods, do you specifically accept or target those made of #5 plastic (e.g., K-Cups)?

- ☐ Yes
- ☐ No

4. K-Cup Acceptance Requirements (Please answer the following questions only if your facility accepts K-cups for recycling.)

A. How does your facility require K-Cups to be accepted for recycling?

- ☐ Whole pod (unseparated)
- ☐ Separated into plastic cup, foil lid, filter, and coffee grounds

B. What are the biggest barriers to accepting K-Cups separated vs. whole (e.g., contamination, equipment limitations, cost, labor)?

5. Processing & Sorting

A. Please describe how K-Cups are captured/sorted

- What sorting technology or processes do you use (e.g., optical sorters, manual picking)?
- Do you sort K-Cups into separate #5 bales, mixed #3–7 bales, or include them with other materials?
- How much of this material (weight, volume, or item count) do you capture on a daily or weekly basis?

B. Not Captured/Disposed

- If these materials are not captured or fully sorted, what happens to them (e.g., sent to landfill, incineration, or other)?

C. Changes in Operations

- Have your K-Cup (or small #5 plastic) collection policies changed over the past 5 years (e.g., started accepting them, stopped accepting them)? If yes, please explain.
- Do you anticipate any changes in the next 2–3 years regarding your ability to collect K-Cups for recycling or disposal? If yes, please explain.

6. Market & End Destinations

A. If your facility produces separate #5 bales:

- Have you had issues maintaining a consistent buyer for the resulting material stream?
- Do you need to further prepare, clean, or otherwise process these items for them to be accepted by downstream markets?

B. If your facility includes K-Cups or other #5 plastics in mixed #3–7 bales:

- Have you had issues maintaining a consistent buyer for the resulting material stream?
- Do you need to conduct any special preparation for these bales?

C. If you handle K-Cups or other #5 plastics in any other way (e.g., shred and separate foil, filter, etc.):

- Have you had issues maintaining a consistent buyer for the resulting material stream?
- Do you need to separate the foil, filter, or coffee grounds to meet market requirements?
- What is the final disposition of these separated or processed materials?

7. Additional Notes or Comments

- Please share any feedback on challenges or opportunities related to recycling single-serve coffee pods (e.g., contamination from coffee grounds, small size, multi-material components, etc.).



Appendix C

Survey Results

SURVEY RESPONSES

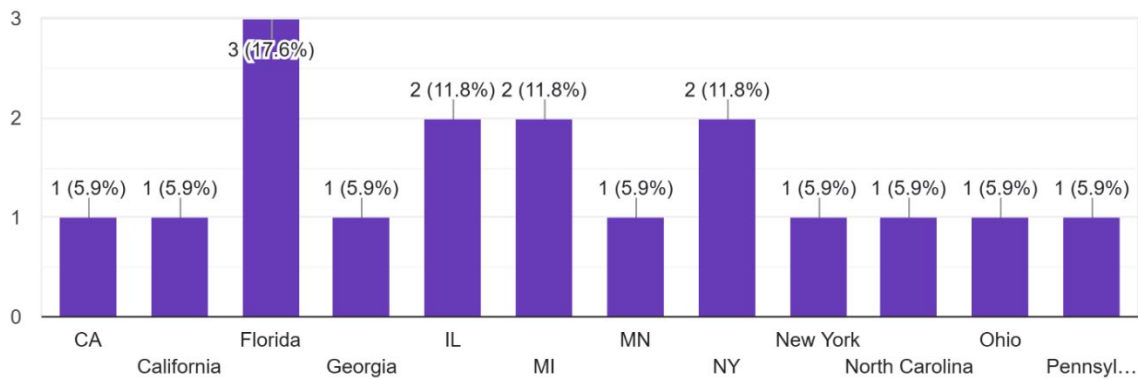
Survey: Assessing the Recyclability of K-Cups

1. Facility/ Operator: Contact Information

Note: Only general location is shown to maintain respondent anonymity.

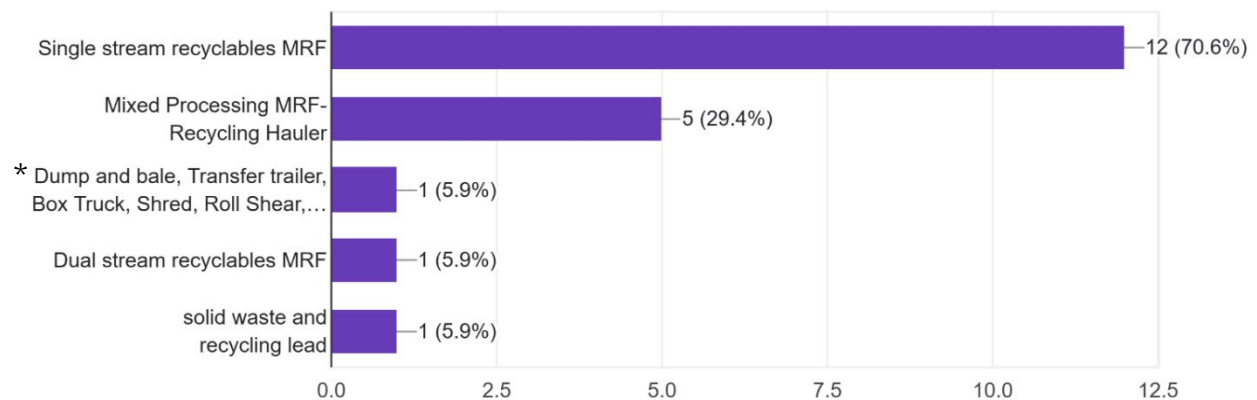
Facility State

17 responses



2. Facility Operations

Do you operate as a (select all that apply):



*Dump and bale, Transfer trailer, Box Truck, Shred, Roll Shear, Cross Dock

3. Materials Accepted: Focus on #5 Plastics and K-Cups

A. Does your facility accept #5 plastic (polypropylene) items for recycling?

14 responses



**The facility accepts recyclables but operates as a transfer station, sending the materials to a third party for sorting and resale. He did not know the name of the third-party.*

B. Does your facility accept small format #5 plastic items (e.g., smaller than 4 inches in two dimensions)?

13 responses

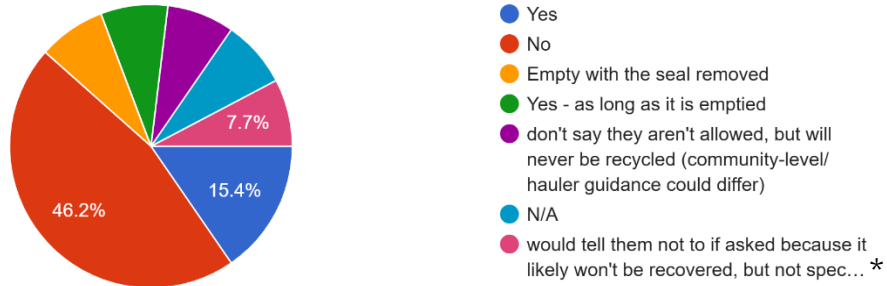


**No - MRF has optical sorting technology for plastics but the number 5s are typically hand sorted out.*

***technically acceptable, don't say they aren't allowed on website, but an item <2.5"-3" will always fall through screen right away and never get recycled*

C. Does your facility accept single-serve coffee pods (e.g., K-Cups) for recycling?

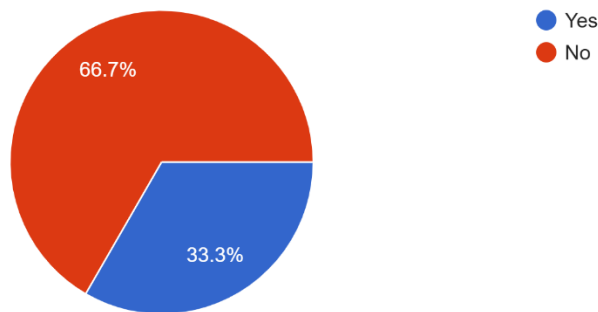
13 responses



**would tell them not to if asked because it likely won't be recovered, but not specified on education materials not to include*

D. If yes to single-serve coffee pods, do you specifically accept or target those made of #5 plastic (e.g., K-Cups)?

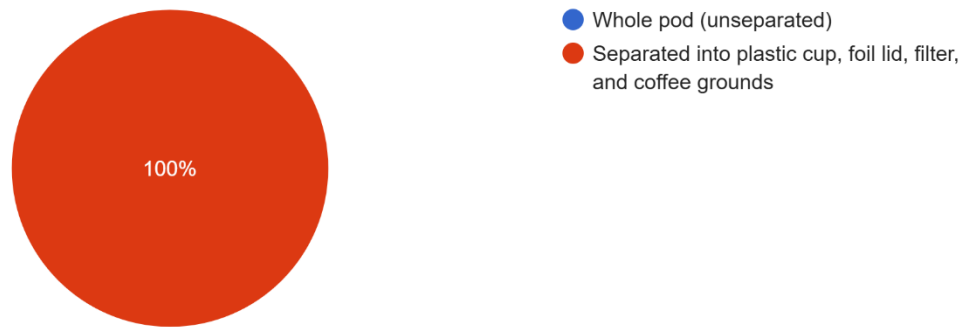
9 responses



4. K-Cup Acceptance Requirements (Please answer the following questions only if your facility accepts K-cups for recycling.)

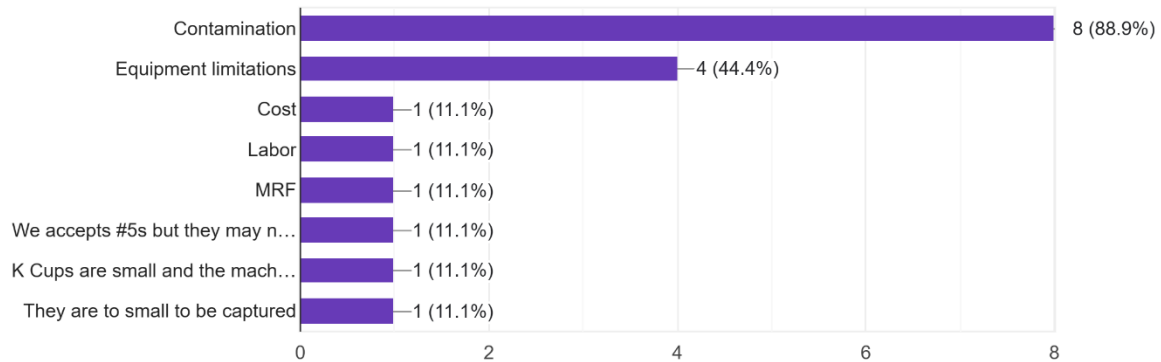
A. How does your facility require K-Cups to be accepted for recycling?

6 responses



B. What are the biggest barriers to accepting K-Cups separated vs. whole (e.g., contamination, equipment limitations, cost, labor)?

9 responses

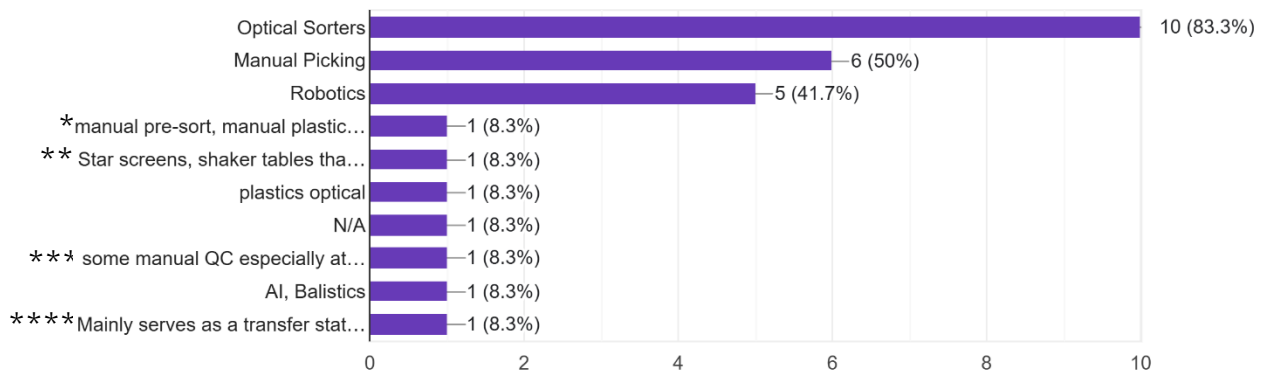


5. Processing & Sorting

A. Please describe how K-Cups are captured/sorted

- What sorting technology or processes do you use (e.g., optical sorters, manual picking)?

12 responses



**manual pre-sort, manual plastics sorting for #1/#2 from commingled line prior to robots*

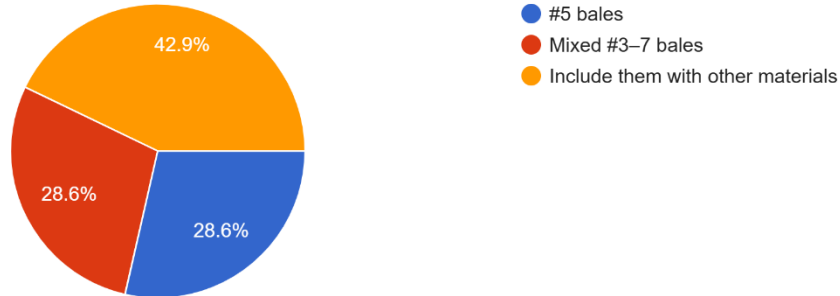
***Star screens, shaker tables that separate small items like glass*

****some manual QC especially at pre-sort*

*****Mainly serves as a transfer station.*

- Do you sort K-Cups into separate #5 bales, mixed #3–7 bales, or include them with other materials?

7 responses

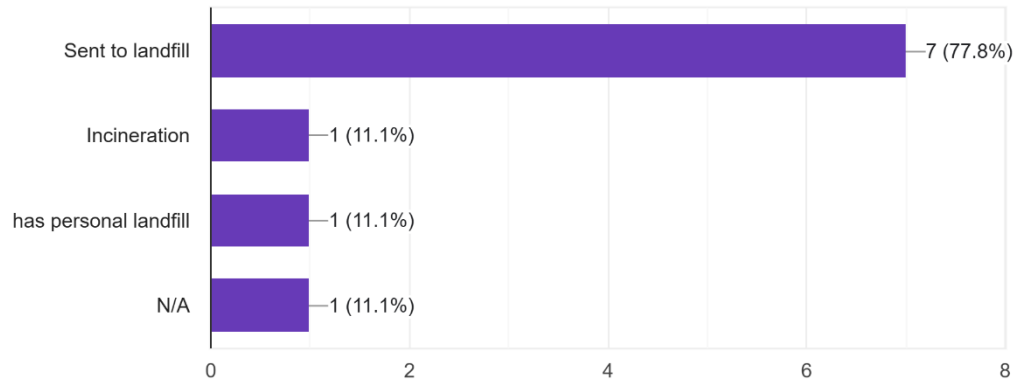


- How much of this material (weight, volume, or item count) do you capture on a daily or weekly basis?
 - Unknown
 - Check with MRF
 - 2-3 bales #5 weekly
 - The combo bale of #1 and #5 we capture approx. 20 bales per week at an average weight of 1,540lbs per bale.
 - will not be captured in any bale, sees them in residual
 - 1-2% of stream
 - N/A
 - 30,000 lbs per week, estimate

B. Not Captured/Disposed

- If these materials are not captured or fully sorted, what happens to them (e.g., sent to landfill, incineration, or other)?

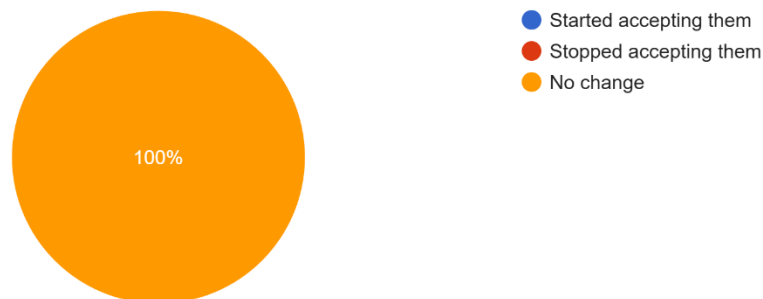
9 responses



C. Changes in Operations

- Have your K-Cup (or small #5 plastic) collection policies changed over the past 5 years (e.g., started accepting them, stopped accepting them)? If yes, please explain.

11 responses



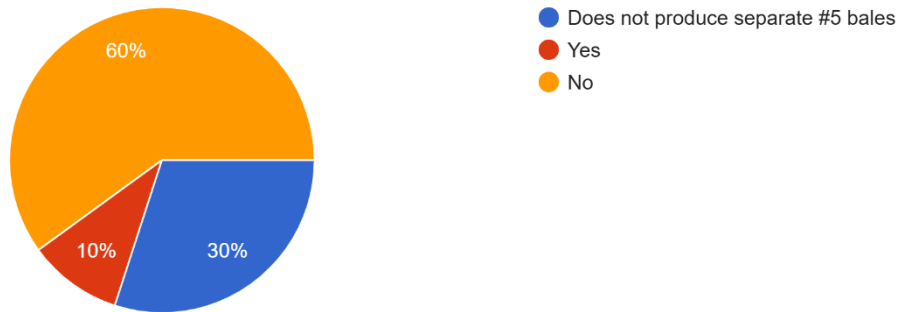
- Do you anticipate any changes in the next 2–3 years regarding your ability to collect K-Cups for recycling or disposal? If yes, please explain.
 - no
 - No
 - It is possible, currently the challenge on recovery of the #5 is the size of the material, too small.*
 - No - they're impossible to recycle with the MRF technology they currently have or will have.*
 - no comment*
 - No changes at the city level*

6. Market & End Destinations

A. If your facility produces separate #5 bales:

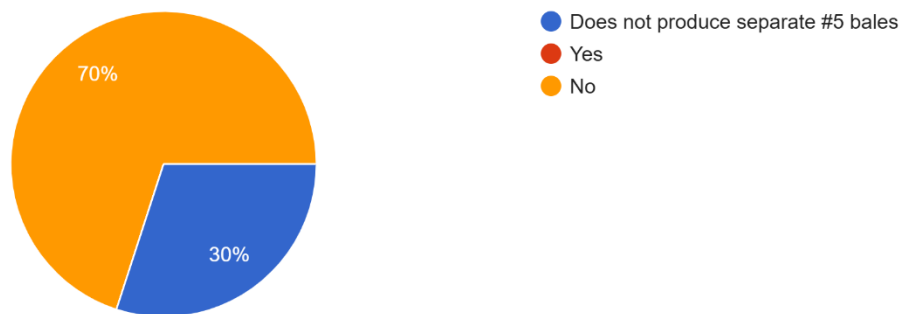
- Have you had issues maintaining a consistent buyer for the resulting material stream?

10 responses



- Do you need to further prepare, clean, or otherwise process these items for them to be accepted by downstream markets?

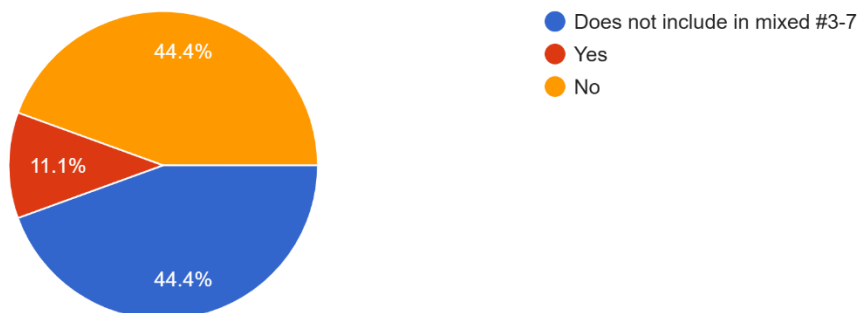
10 responses



B. If your facility includes K-Cups or other #5 plastics in mixed #3–7 bales:

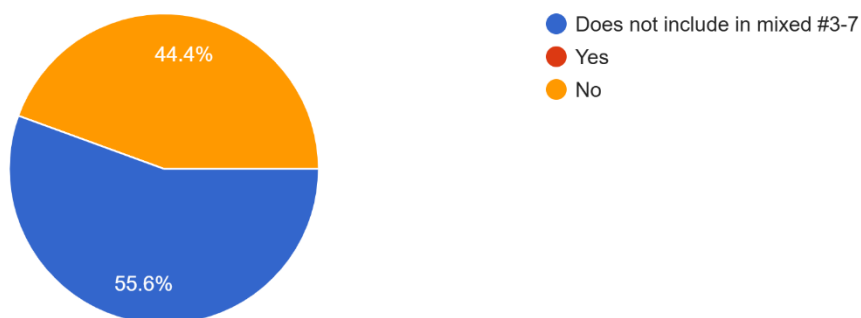
- Have you had issues maintaining a consistent buyer for the resulting material stream?

9 responses



- Do you need to conduct any special preparation for these bales?

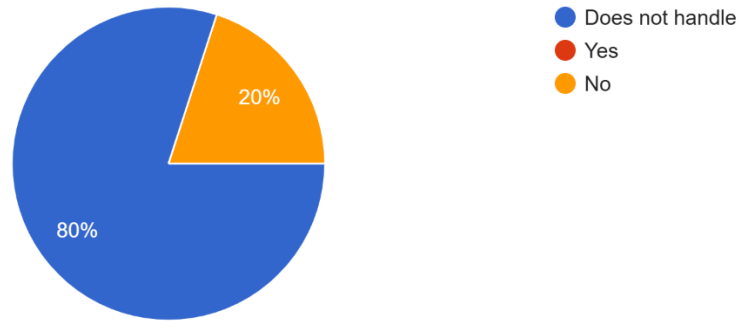
9 responses



C. If you handle K-Cups or other #5 plastics in any other way (e.g., shred and separate foil, filter, etc.):

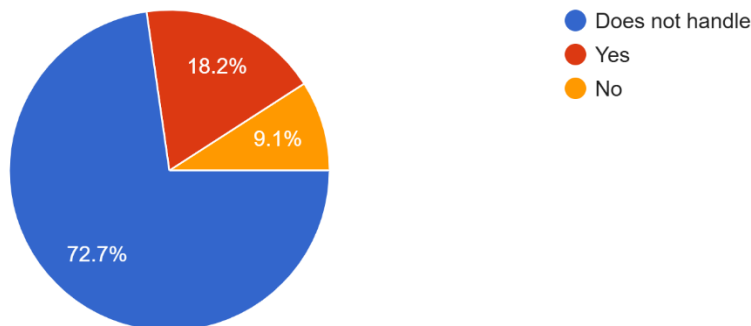
- Have you had issues maintaining a consistent buyer for the resulting material stream?

10 responses



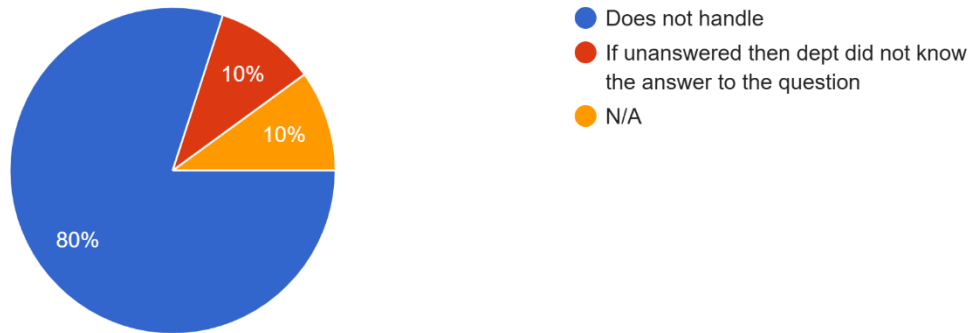
- Do you need to separate the foil, filter, or coffee grounds to meet market requirements?

11 responses



- What is the final disposition of these separated or processed materials?

10 responses



7. Additional Notes or Comments

- Please share any feedback on challenges or opportunities related to recycling single-serve coffee pods (e.g., contamination from coffee grounds, small size, multi-material components, etc.).
 - *The facility accepts recyclables but operates as a transfer station, sending the materials to a third party for sorting and resale. Do not know the name of the third-party or what their operations consist of.*
 - *Contamination and size (many fall out in the process)*
 - *Contamination from coffee grounds typically and education that they are recyclable and proper procedure for recycling the k-cups.*
 - *Haven't been targeting or monitoring for these pods. Hard to know how many are even in their stream, not collecting many. #5 are challenging and education could be improved for residents to understand what is and isn't recyclable plastic. Small size a challenge in any MRF system to capture. Robots are trained to grab polypropylene and assumes K-cups would be included but not sure if part of their training (had <1 yr, since July). Takes several months to have enough #5 or #3-7 bales to ship.*
 - *The main issue is the foil and grounds as well as the size.*
 - *The MRF technology does not allow for the recycling of K Cups due to its small size and composition.*
 - *Our biggest concerns are the small size and contamination on the k-cup (residual grounds, foil lids). Our #5 bales are already difficult to market, because product sold in #5 containers often stays on the container making them dirtier than other bales (yogurt, other dairy etc.). Adding k-cups would only further devalue these bales and possibly make them undesirable by our buyers.*
 - *Not feasible at their MRFs, would need a whole new line with robots or manual picking as the only way to get it from the residual, and unlikely to be ready to recycle*

(separated and foil/coffee removed). Collecting coffee pods by themselves seems like only option that would work, and would likely be too expensive to be sustainable (especially if consumers weren't separating the pods themselves).

- *size and mix of materials makes it challenging for the MRF and material mix also a challenge for the end market*
- *The challenge is two-fold, the public desire to break down and the k-cup is too small a fraction to be captured.*
- *Just due to size there isn't much else they can do to recover them. They fall through the glass breakers rather than going over top like larger items to continue sorting. Further limitation is the minimal value of 3-7 bales. About a year and half ago had to pay the broker to take them for a couple months; has bounced back since but guesses they lose money in general on 3-7, even with robots. Feel they could install more robots and still catch more due to sheer volume of 3-7 they receive, but wouldn't get ROI.*
- *Size and contamination*
- *Mainly serves as a transfer station, they don't recycle on-site.*